Health Promotion and Aging

Practical Applications for Health Professionals

Fourth Edition

David Haber, PhD

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Foreword

The fourth edition of *Health Promotion and Aging: Practical Applications for Health Professionals* by David Haber should be on the bookshelf of every student and every professor in any of the health disciplines. Although we live in the days of the internet, and everything is easily available on the Web, this book is a reminder as to why the book on the shelf is still needed. This new book is a resource that pulls together everything that a health care provider would need to know about promoting health and quality of life for older adults.

Although Dr. Haber does not articulate this in his book, *Health Promotion and Aging: Practical Applications for Health Professionals* is written within the backdrop of a social-ecological model that incorporates intrapersonal, interpersonal, organizational, and environment factors into health promotion. This model provides a comprehensive way to consider health promotion and consequently addresses all aspects of this broad concept in an organized fashion. Intrapersonal aspects of aging and normal versus abnormal age changes are addressed. Interpersonal issues are considered in great detail and include interactions between patients and providers, with suggestions for both patients and providers on how to optimize those interactions. The book also provides a multitude of ways an older adult can be encouraged to expand his or her social network.

The current health care system and the environment are addressed within the context of health promotion, and Dr. Haber also anticipates our future health care systems and environment. Dr. Haber reminds us throughout the book of the coming-of-age of the baby boomers and the impact this will have on health care. When he becomes president (as he facetiously predicts), Dr. Haber will redesign aspects of the health care system and change the surgeon general to the wellness general. While his message is easy to read and fun, he makes important points related to health and health behaviors within our communities.

Dr. Haber has a unique way of interspersing the book with personal experiences with regard to practice as well as personal experiences that make reading the text cover to cover so easy and enjoyable. His approach also serves as an effective way to learn and to remember the important tidbits of care related to health promotion.

So what is in between the covers of this book that makes it such a precious and useful resource? It starts with an overview of health promotion and provides an easy-to-read review of critical health promotion guidelines and the interface of the health care system with regard to those guidelines. Medicare coverage, including Medicare Part D and its impact on society, is specifically reviewed. The second chapter is a critical asset for those engaged in any type of health promotion encounters with older individuals. Chapter three provides a wonderful and comprehensive synthesis of current guidelines and research supporting or refuting specific health-promotion and disease-prevention activities. Activities such as immunizations, cancer screenings, and medication prophylaxis (e.g., aspirin use) are considered. Chapter four moves into the area of behavior change, and tricks of the trade for changing behavior are reviewed. Further coverage includes specific behaviors such as exercise, nutrition, weight management, smoking, alcohol use, driving, and injury prevention. Practical information about what activities to do and how to do them is provided. Chapter eight addresses the good (and the not-so-good) aspects of complementary and alternative medicine. The book has a very strong emphasis on the importance of social support and interaction, whether this support comes through Web-based interactions or group programs. Chapter ten is dedicated to where older adults could and should receive sufficient support across all stages of the long-term care continuum (from prevention to hospice services). The book ends with a glimpse into the future and on an optimistic note about the wonderful opportunities for students in the areas of geriatrics and gerontology and for what is yet to come as the baby boomers age. For those of us who are quickly approaching the wonderful world of aging, thanks to Dr. Haber for providing a resource that we can use as individuals and providers to assure optimal health as we age.

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Preface

I was trained at the University of Southern California as a sociologist specializing in gerontology but spent my career implementing and evaluating health promotion projects in the local community. This contradiction between training and practice has informed me on why promoting health is possible, but difficult.

From a sociological perspective it is clear to me that American society is not particularly health promoting. For example, computers are increasingly promoting sedentary behavior, both at work and at play. A fast-paced society encourages us to seek convenient food and drink, and ubiquitous advertising—to the tune of tens of billions of dollars per year—promotes questionable foods and drink over good nutrition. And the considerable stress engendered by a dynamic society leads to smoking, excess alcohol consumption, and engagement in other risky behaviors.

At the same time, however, we are becoming increasingly well educated on health matters and eager to learn more from research findings that quickly reach Web sites, books, magazines, newspapers, and television programs. Primarily through public education, we were able to reduce smoking rates in half between 1965 and 1990, and perhaps we can do the same with obesity and inactivity if we direct similar attention to these problems.

So while sociological truths are not to be denied, there is still considerable potential to empower individuals to live a healthy lifestyle. And while there is a vacuum of leadership created by a mostly hands-off federal government, there are an increasing number of local organizations taking the initiative in health promotion: religious institutions, businesses, community centers, hospitals, medical clinics, educational institutions, shopping malls, and city governments.

As we begin our journey in the new millennium, research is providing convincing evidence that health promotion works—no matter what our age, and even after decades of practicing unhealthy habits. The findings are also providing specific ideas on what we need to do and how we ought to go about doing it. In some areas the strategies for improving health are a lot less onerous than we thought they had to be. For

example, progressing from a sedentary lifestyle to brisk walking for up to a half hour most days of the week can do our health a world of good.

Even the dreadful piece of legislation enacted in 1994, the Dietary Supplement Health and Education Act, may have some value, in spite of the plethora of worthless and sometimes harmful products that it now allows to be promoted over the counter with ridiculous claims, such as "reverses aging." Perhaps it is helping an American public become a bit more judicious in the evaluation of claims about what swallowing a pill can accomplish.

I would also like to note that the terms in the title of this book, *Health Promotion and Aging*, are not as straightforward as they might seem. Matters relating to health, for instance, are often dominated by medical issues. And it is not clear which terms are most salient to aging people: *health promotion*, *disease prevention*, *management of chronic disease*, *health education*, or other expressions.

And when does aging start: at the government-protected age of 40 at work, at the AARP eligible age of 50, at the traditional retirement age of 65, at the eligibility age of 75 at some geriatric clinics, or at the demographically interesting ages of 80 or 85? And how should we feel about the anti-aging movement that urges us to defy the aging process? This anti-aging perspective has an appeal to many who have a vision of living vigorously and looking youthful for as long as possible. But what about us pro-agers who embrace the aging process, accept its deficits, and creatively uncover its strengths?

The fourth edition of *Health Promotion and Aging* has one new chapter (15), and the other 14 have been substantially revised and updated. The book is focused on current research findings and practical applications. This edition includes detailed descriptions of two of my programs that have been recognized by the National Council on the Aging's Best Practices in Health Promotion and Aging: an exercise program in the community that includes aerobics, strength building, flexibility and balance, and health education; and a health contract/calendar to help older adults change health behaviors. I have also begun work on life reviews in community settings, and some of that work informs this edition.

Much has happened since the third edition, many questions have been raised, and a good many questions have been answered, temporary though that may be. Perhaps the best way to preface this book is to select just a few of the questions that are addressed:

How do you define healthy aging?
Which communication skills prevent lawsuits?
How do you convert passive patients into empowered clients?
What are the best Web sites for health promotion and aging?
Why are medical screenings so controversial?

Should all older adults be on a statin?
Who does not do immunizations, and why not?
Medicare prevention: What is it, what should it be?
Are you aware of the recent changes in Medicare prevention?
What is the latest research on how exercise prevents disease and improves function?
What takes place in the author's exercise class?
What nutritional tools are good with older adults?
Is the 2005 Food Guide Pyramid—MyPyramid—an improvement over the previous version?
What should we know about the different kinds of fats?
What are the latest cholesterol guidelines?
What do we need to know about sugar and salt?
How can nutrition labeling be improved?
What is the major contributor to excess weight: genetics, lifestyle, or environment?
Should we gain weight with age?
Should churches promote weight loss?
Is CAM a crock?
Which dietary supplements should older adults take?
What is the story with vitamin E?
Who quits smoking?
How well do we assess alcohol problems with older adults?
What can health professionals and older adults do to reduce medication misuse?
What can older adults do to prevent falls?
When should older adults stop driving?
Can pedestrian safety be improved?
What can be done to improve sleep?
How effective is pet support on mental health?
What are the two sides to whether religion promotes health or extends longevity?
How important is peer support?
What are the problems with identifying and treating depression?
Can we improve cognitive fitness and stave off Alzheimer's?
What are the insurance inequities with mental disorders?
How do older adults deal with stress?
Can we manipulate a positive attitude to extend longevity?
Do placebos work?
Have you conducted a life review?
What is going on in churches, hospitals, educational institutions, and shopping malls?

Do you know about Healthwise, the Chronic Disease Self-Management Program, Project Enhance, the Ornish Program for Reversing Heart Disease, Community-Oriented Primary Care, and other model health promotion programs?
What do you need to know about health professional associations, community volunteering, and health advocacy opportunities for older adults?
What do you need to know about diversity and aging?
How does the aging of women differ from men?
Is socioeconomic status more important than race in gerontological health?
What are the problems associated with rural aging?
What can developed and developing countries learn from each other?
How should we remake American society to promote healthy aging?
Are you ready to take a glimpse into the future?

I have attempted to make the book practical by including health-promoting tools, resource lists, assessment tools, illustrations, checklists, and tables; thoughtful by raising issues in each chapter and posing additional questions at the end; and humorous because humor is essential to health promotion.

For faculty, there are 185 questions for challenging your students at the end of the chapters. There is also an Instructor's Guide with test questions that can be obtained from Springer Publishing Company, LLC.

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CHAPTER ONE

Introduction

Did you know that the federal government establishes goals for healthy aging? In 1990, for instance, the U.S. Public Health Service established the goal of increasing years of healthy life remaining at age 65 from the 11.8 years that it was in 1990 to 14 years by 2000. It turned out, however, that this goal for the decade was not met, though minority elders made substantially more progress than nonminority elders. Although healthy life remaining at age 65 had increased only 0.4 years, to 12.2 years, the data indicated an additional 1.3 years for African Americans and 1.8 years for Hispanics during this decade (U.S. Public Health Service, 2000).

This, of course, raises some questions: How long has the federal government been doing this? Are they still doing it? Is it helping to promote healthy aging? For those readers who are impatient, the three answers are more than 25 years; yes; and sorry, you will have to read on to find out about the third answer.

HEALTHY PEOPLE INITIATIVES

In 1979, an influential document, *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention,* was published (U.S. Department of Health and Human Services [USDHHS], 1979). Over the years, this report was widely cited by the popular media as well as in professional journals and at health conferences. Many attribute to it a seminal role in fostering health-promoting initiatives throughout the nation. It was followed by another report by the U.S. Public Health Service in 1980, *Promoting Health/Preventing Disease: Objectives for the Nation,* which outlined 226 objectives for the nation to achieve over the following 10 years.

TABLE 1.1 Healthy People 2010: Leading Health Indicators

Rank	Indicator
1.	Physical activity
2.	Overweight and obesity
3.	Tobacco use
4.	Substance abuse
5.	Responsible sexual behavior
6.	Mental health
7.	Injury and violence
8.	Environmental quality
9.	Immunization
10.	Access to health care

A decade later, in 1990, another national effort, Healthy People 2000, was initiated by the U.S. Public Health Service in an effort to reduce preventable death and disability for Americans by the year 2000. The Healthy People 2000 initiative focused on three broad public health goals for Americans: (a) to increase the span of healthy life; (b) to reduce health disparities; and (c) to achieve access to preventive services.

In 2000, the Healthy People 2010 initiative was launched, with the number of objectives increased to 467, distributed over 28 priority areas. An interagency work group with the U.S. Department of Health and Human Services, however, pared this list to 10 leading health indicators (Table 1.1).

As you can observe, the table does not refer to an age-specific list of health indicators. Sexual irresponsibility and smoking, for instance, are much more prevalent problems among younger adults than among older adults. And access to health care is primarily an issue for younger persons without health insurance. Another limitation, unrelated to age, is that there are few federal funds earmarked specifically to accomplish improvement among these 10 health indicators.

On the positive side, setting health care priorities is no longer a simple matter of tabulating the number of deaths from a few diseases and then organizing a campaign against the most prevalent ones, like heart disease and cancer. The Healthy People initiatives are health oriented, not disease oriented, and as such they recognize the complexity of the socioeconomic, lifestyle, and other nonmedical influences that impact our ability to attain and maintain health.

A second major benefit of the initiative is that they are focused on documenting baselines, setting objectives, and monitoring progress. According to the 1998–1999 Healthy People 2000 Progress Report (National Center for Health Statistics [NCHS], 1999), 15% of the objectives for the year 2000 were met, and 44% demonstrated movement toward the target.

However, since the initiative relied mostly on data monitoring and a small amount of publicity—and very little financial support—it is unclear whether Healthy People 2000 contributed directly to this progress.

For example, in an area where there was no financial support for encouraging change—being overweight or obese—the trend in America for adults between the ages of 20 and 74 has been in the opposite direction. There has been a steady increase in weight gain for Americans over the decade (NCHS, 1999). There has been a similar result with sedentary behavior among Americans. In the absence of financial support for encouraging change in this area, light to moderate physical activity on a near-daily basis between the ages of 18 and 74 has not improved over the decade (NCHS, 1999).

Focusing on those aged 65 and over, the Merck Institute of Aging and Health (http://www.gericareonline.net) came out with a report card on the Healthy People 2000 initiative, and it revealed many failing grades. Older Americans did not reach the 2000 target goals; in fact, they fell far short of them for physical activity, overweight, and eating fruits and vegetables. Additional failing grades were assigned to the target goals of reducing hip fractures for persons aged 65 and over and fall-related deaths for persons aged 85 and over.

In contrast to the mere monitoring of most Healthy People 2000 target goals, financial assistance was provided to older adults through Medicare during the decade for mammogram coverage, pneumococcal vaccination, and influenza vaccination. With this financial support the percentage of compliance in these three areas doubled among older adults during the decade (Haber, 2002a). Consequently, the Healthy People 2000 target goals were met for mammogram screening and influenza vaccination and fell just short of being met for pneumococcal vaccination.

This raises the question of whether the federal government should be doing more than monitoring data changes when it comes to promoting healthy aging. A comparable question can be asked of state governments. The Healthy People initiatives are supposed to have a counterpart initiative at each of the state health departments. In my experience with several states, however, this initiative has been ignored, or the state health department conducted a modest project that was accomplished several years ago but did not follow up with additional activity.

I will come back to this issue of whether the federal government should be doing more than monitoring data changes in the last chapter of this book. In the meantime, to find out more about the Healthy People 2010 initiative, go to http://www.health.gov/healthypeople/state/toolkit. And, finally, back to the question, Does establishing goals help to promote healthy aging? The answer is what you might expect: not if you are merely monitoring.

SOCIODEMOGRAPHIC TRENDS

It has seemed almost obligatory over the past quarter century to begin a gerontological article or book with comments about the rapid aging of society. About 15–20 years ago, we began to see two slight variations of the ritual: Many writings began with comments about the aging of the aged, and an additional spate of writings appeared on the coming onslaught of aging baby boomers, born between 1946 and 1964.

In 2006, when the vanguard of baby boomers became sexagenarians, both ends of the older age spectrum commanded our attention. The robust baby boomers–cum–gerontology boomers made it obvious to all but the most ageist of younger persons that the vitality of aging persons remained strong. The stereotype of aging as a process synonymous with physical and mental deterioration was tarnished. And at the other end of the age spectrum, among persons aged 85 and older, the growth in the percentage of the very old began to startle—about a 40% growth per decade. In 1980, there were 2.2 million Americans aged 85 and over; in 1990, 3 million; in 2000, 4.3 million; and in 2010, there will be 6 million.

Along with the increasing breadth of aging Americans comes increasing complexity. Fifty-year-olds are eligible for membership in AARP (formerly the American Association of Retired Persons), but they are quite different from 70-year-olds, who in turn are significantly different than 90-year-olds. Moreover, 90-year-olds are different from one another. A few of them are pumping iron and throwing away their canes (Fiatarone et al., 1990), while others are waiting to die.

What aging Americans have in common, be they 50 or 90, robust or frail, is a future with an intensified demand for *medical* care (euphemistically referred to in America as *health* care) and the ongoing escalation of medical care costs. Driving these demands and costs are the increasing numbers of aging persons with both chronic and acute medical conditions and an expensive, high-tech, acute care–oriented medical system.

As we entered the third millennium, this demand for costly and sophisticated medical care collided with an unpredictable federal budget. In less than 6 months' time during the year 2001, we went from a record-breaking and astoundingly huge budget surplus to budget deficits of uncertain duration—thanks to the one-two punch of federal legislation to launch a 10-year tax cut and the surging costs of both a war on terrorism and domestic programs.

Matching the uncertainty of our economic future is our uncertainty over whether the American public's voracious appetite for medical care can be reduced by disease prevention and health promotion. On an optimistic note the media has allocated considerable time and space to the merits of promoting good health practices, including its potential for cost savings.

Joining the media are the federal and state governments, which have strongly endorsed *disease prevention/health promotion;* the health professions, which have proclaimed its importance in education and training; the business community, which has firmly supported it for employees; and individuals who often discuss their attempts at it, both successful and otherwise.

If disease prevention/health promotion strategies as a way of controlling medical costs have been vying for center stage in society, it has been the stage of a not very prosperous community theater. The federal government plays a limited role in disease prevention and will not subsidize health promotion. State governments have been more concerned about the expenditures that the federal government continues to pass along to them (welfare reform and antiterrorist measures among the more costly), rather than on new disease prevention/health promotion initiatives that need funding.

Health professionals, too, have provided mostly lip service to health promotion because they have not been reimbursed for it. Health science students have received only a modicum of health promotion knowledge and skills and infrequent experience in applying it (Haber & Looney, 2000; Haber et al., 1997, 2000). The business community has devoted resources to health promotion (often calling it worksite wellness) but has stopped short of focusing on the employees who need it most—older and more sedentary employees.

And last but not least, individuals have spent more time and money on health promotion. But they also have spent more time and money at restaurants; on eating larger portions of food with higher fat content; and on computers, in front of which they have sat for an increasing number of hours.

Perhaps the disparity between the promise of health promotion and the attention shown it, and the allocation of inadequate resources toward supporting it, originates in the American value of individual responsibility. Unlike medicine, where we know we are not responsible for prescribing drugs or conducting surgery on ourselves and family members, we feel capable of walking briskly and eating healthfully—if we choose—without the necessity of experts, health programs, and taxpayer financial support. Thus, though most people are not doing as good a job as they would like at promoting their health, many believe it is up to the individual to take responsibility for it.

Individual responsibility is an important American value, but individuals are imperfect and need help. If support can be provided by government, business, the media, the community, health professionals, religious institutions, family, and friends, we are going to do much better at promoting our own health and those of the people we love.

I hope the subsequent chapters of this book provide the reader with ample ideas and data on health promotion and aging to justify some degree of optimism and to inspire additional initiatives—from the individual level to all the major institutions of society, including family, work, government, religion, health care, and education.

What follows are cautionary as well as hopeful sociodemographical data to suggest that aging adults may not only lead the way in escalating medical costs, but also have the potential to lead the way in the implementation of creative and cost-effective health-promoting strategies. In this latter regard the data reveal that the educational level of aging Americans has risen, that they are increasingly health conscious, and that they are active in community health-promoting endeavors.

Much of the information in the next section is taken from summaries of data provided by a variety of sources, including the U.S. Bureau of the Census's *65+ in the United States: 2005* (http://www.census.gov); the Administration on Aging's *A Profile of Older Americans: 2000* (file can no longer be accessed); The National Center for Health Statistics's *Health, United States, 2005* (http://www.cdc.gov/nchs/hus.htm); *American Perceptions of Aging in the 21st Century* (National Council on the Aging, 2002); *Older Americans 2004: Key Indicators of Well-Being,* a report of the Federal Interagency Forum on Aging-Related Statistics; and *The State of Aging and Health in America,* Merck Institute of Aging and Health (http://www.miahonline.org).

Population Growth Over Age 65

By now, all but the most uninformed know that the American population has been aging dramatically. Since 1900, the percentage of Americans aged 65 and over has more than tripled, from 4% in 1900 to almost 13% in 2004, and the number has increased 12-fold, from 3 million to 36 million. This trend will continue for several decades. Between 2000 and 2030, the number of people who are 65 and older is expected to more than double, from 35 million to 71.5 million (Figure 1.1), and the percentage who are aged 65 and over is expected to reach 20%.

The percentages in Table 1.2 show why the population age pyramid—a few older adults at the top and many children at the bottom—is rapidly becoming a population age rectangle.

The Baby Boomers

The baby boomers are the 76 million persons born between 1946 and 1964. Most were conceived when the millions of soldiers, sailors, and marines returned home from World War II and created a baby boom that

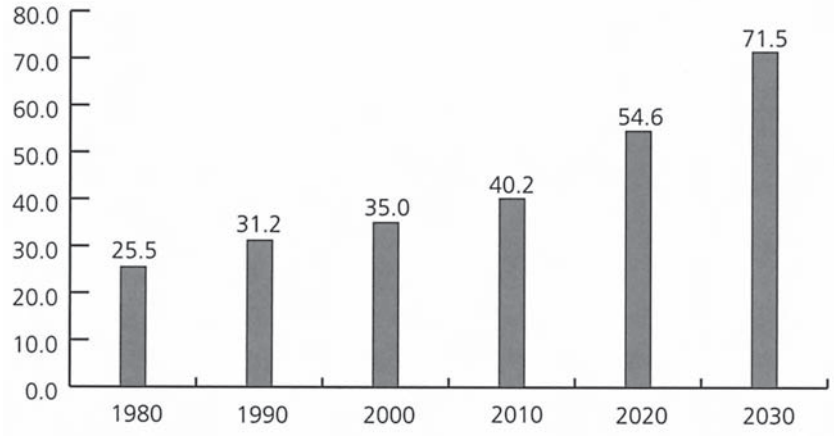


FIGURE 1.1 Number of persons aged 65+, 1980–2030 (in millions).
Note. From *Older Americans 2004: Key Indicators of Well-Being* (p. 2), by the Federal Interagency on Aging Related Statistics, November 2004, Washington, DC: U.S. Government Printing Office.

started quickly—there were fewer than 2.8 million births in 1945 but more than 3.4 million in 1946—and lasted 18 years. The boomers challenged our hospital capacity when they were born, the school system a few years later, and society in general when they reached draft age, and many did not agree with the politicians who wanted to expand the Vietnam War.

The baby boomers' impact on society as middle-aged persons has been unclear—spoiled descendents of the Greatest Generation or pioneers in social reform and civil rights? Starting in the year 2010, however, when the boomers turn age 64, their impact will be clear and dramatic. And they will expect answers to the Beatles' question: "Will you still need me, will you still feed me, when I'm 64?" (The question will be even more relevant in 2030, when they will be 84.)

In 2010, the number of persons between the ages of 45 and 64 is projected to be twice that of those aged 65 and over: 79 million versus 39 million. And boomers will be bringing with them into retirement not only their large numbers and a history of advocacy, but a powerful interest in the

TABLE 1.2 Becoming an Age Rectangle

Year	Under Age 18 (%)	Over Age 65 (%)
1900	40	4
1980	28	11
2030	21	22

solvency of the present and future Social Security and Medicare programs. Their influence on society is likely to be dramatic as they become retirees.

As eloquently stated by Frank Whittington, director of Georgia State's Gerontology Center (and I paraphrase), on January 2, 2008, shortly after 9:00 a.m., a simple bureaucratic event was the harbinger of a fundamental change in American society. Someone, probably a woman, walked into the local office of the Social Security Administration and applied for retirement benefits. She celebrated her 62nd birthday on that day and became the first baby boomer to apply for early Social Security benefits. Over the next couple of decades, over 70 million of her peers will follow suit. We must not doubt that when that woman strode up to the counter to ask for her benefits, all of our lives had begun to change.

When boomers retire, they will make enormous demands on both the Social Security and Medicare programs, which, at the same time, will be supported by a shrinking taxpaying workforce. By the time the last boomer turns 65 in the year 2029, the retirees drawing Social Security and Medicare benefits will include one in five Americans.

The Older Old

The older population itself is getting older. The percentage of persons aged 85 and over is growing faster than any other age group. There was a 36% increase among Americans aged 85 and over from 1980 to 1990 (from 2.2 million to 3 million); a 43% increase from 1990 to 2000 (from 3 million to 4.3 million); and a 40% increase is projected from 2000 to 2010 (from 4.3 million to 6 million). Every decade, there is another 40% increase in the number of persons aged 85 and over.

This demographic trend is significant for two reasons. On the positive side the rapid growth of this segment of the population converts this previously uncommon event into an increasingly likely stage of the life cycle. Moreover, the percentage of older adults aged 75 and over who report good health or better is 66%.

Experts believe that today's 70-year-old is more like the 60-year-old in previous generations (Trafford, 2000). Older adults have the same perception about themselves. The National Council on the Aging (2002) together with the Harris National Survey reported that 51% of persons between the ages of 65 and 74 and 33% of persons aged 75 and over perceive themselves as middle aged or younger! This certainly is evidence that many older adults are redefining old age as beginning later in the life cycle.

On the challenging side, for both individuals and society, is that the ability of this age group to function fully is significantly less than the younger old. Whereas only 6% of persons aged 65–69 reported difficulties with at least one activity of daily living task, 35% of persons aged

85 plus had such difficulties. Similarly, only 1% of persons aged 65 were residents of nursing homes, but 22% of persons aged 85 plus were residents. The older old person places more demands on family caregivers and societal resources.

Chronic Conditions and Disability

The leading chronic conditions among those aged 70 plus in 1996 were arthritis (58%), hypertension (45%), hearing impairments (30%), heart disease (21%), cataracts (17%), orthopedic impairments (16%), and diabetes (12%). The prevalence of each condition increases in old age, and many persons over age 80 have multiple chronic conditions and multiple physical impairments.

By age 65, approximately 14% have difficulty performing an activity of daily living (ADL)—like bathing, transferring, dressing, toileting, or eating—or difficulty with walking. And about 21% have difficulty with an instrumental activity of daily living (IADL), like shopping, preparing meals, managing money, light housework, and getting around the community. By age 80 plus, however, the percentage having difficulty with ADLs (28%) and IADLs (40%) is double that of the younger old.

Although chronic conditions increase with age, disability rates for older Americans have been declining. In 1982, the disabled older population in the United States totaled 6.4 million. If the 1982 rate had continued, the number of disabled would have climbed to about 9.3 million in 1999. Instead, it rose to only 7 million—less than one-fourth of the increase that might have been expected. Another way to view this change is that in 1982, 26.2% of those aged 65 and over had a disability that was a substantial limitation in a major life activity; by 1999, this percentage fell to 19.7%.

Centenarians

According to the Guinness World Records (http://www.guinnessworldrecords.com), a French woman, Jeanne-Louise Calment, has lived the longest, reaching 122 years before she died in 1997. In 2005, the longest lived person was the Dutch woman Hendrikje van Andel-Schipper, who reached 115 years and attributed her longevity to eating a piece of herring every day.

On June 9, 2005, the world's oldest living married couple had an aggregate age of 205 years. Magda Brown, age 100, attributed her 74-year union to Herbert Brown, age 105, to her taking the lead ("I am the strong one") and his following ("He is the easygoing one"). Apparently, Herbert is more than just easygoing. As a Jewish person, he had to survive the Nazi concentration camp at Dachau.

On December 5, 2004, Johannes Heesters celebrated his 101st birthday. He announced at that time that he had no plans to take what he called "early retirement." This Dutch-born German singer-dancer-actor was still appearing on stage. As he noted: "The stage is my life and I'd have been dead and gone long, long ago if it hadn't been for the audience's applause." Mr. Heesters, however, was not the oldest worker in 2004. Ray Crist, age 104, still worked as a research scientist at Messiah College in Pennsylvania. He had earned his doctorate in chemistry from Columbia University in 1926 and was still putting it to good use.

As centenarians, Andel-Schipper, the Browns, Heesters, and Crist have a lot of company. There were 71,000 people aged 100 or older in 2005, with the U.S. Census Bureau projecting that figure to be 114,000 in 2010 and 241,000 in 2020. Some census projections forecast as many as 1 million centenarians by the year 2050, when the baby boomers begin reaching age 100.

A *USA Today/ABC News* poll in 2005 reported that only 25% of Americans want to live to be 100 or older. The majority of Americans are concerned that they will become disabled and a burden to their families. And yet many Americans are fascinated by the idea of an increasing number of people becoming centenarians.

The same holds true for scientists as well. One scientist, though, is not content with merely becoming a centenarian. Aubrey de Grey, a controversial practitioner of biogerontology at the University of Cambridge, believes that the first person who will live to be 1,000 might be age 60 already. While this Englishman's ideas are far from the scientific mainstream, he has inspired considerable interest in his theories, having been invited to deliver 33 presentations in the United States in 2005. This interest may have been stimulated in part by his $20,000 cash prize for anyone who can disprove the scientific basis of his theories, as determined by a review panel of independent molecular biologists. His provocative ideas on increased longevity range from stem cells that can regrow diseased tissue to implanting bacteria to clean up waste that builds up inside cells.

Life Expectancy

The life expectancy of Americans in 2004 was the highest it has ever been, 77.9 years, according to the National Center for Health Statistics. Before breaking out the champagne bottle, though, it should be noted that the United States was still behind 24 countries.

Americans' life expectancy has been rising almost without interruption since 1900, thanks to advances in sanitation, medicine, and health behavior (particularly smoking cessation). It is by no means certain whether these increases in life expectancy will continue unabated. Increases in

TABLE 1.3 Ten Leading Causes of Death in 2004

	No. of deaths
1. Heart disease	654,000
2. Cancer	550,000
3. Stroke	150,000
4. Chronic lower respiratory diseases	123,000
5. Accidents	108,000
6. Diabetes	72,800
7. Alzheimer's disease	65,800
8. Influenza and pneumonia	61,500
9. Kidney disease	42,800
10. Septicemia (blood infection)	33,500

obesity, and the related conditions of hypertension and diabetes, may reverse this trend, while the advent of cholesterol-lowering drugs and other advances in medicine may foster it. The future may also be determined by changes in the health behavior patterns of eating, exercising, and abstinence from smoking.

For women, life expectancy in 2004 reached 80.4 years; for men, it reached 75.2 years. The gender differential has been narrowing, with the 5.2-year differential the smallest difference since 1946. Medical experts speculate that women are working harder, smoking more, and undergoing more stress.

Table 1.3 lists the leading causes of death in 2004, with Alzheimer's forging ahead of influenza and pneumonia due to a 1.4% increase in the former and a 7.3% decline in the latter. Deaths from heart disease, cancer, and stroke all declined.

Hospital Stays and Physician Visits

In 1964, the average length of a hospital stay for an older patient was more than 12 days. By 1986, it was reduced to 8.5 days, by 1996 to 6.5 days, and by 1999 to 5 days. Hospital expenses no longer accounted for the largest percentage of health expenditures for older persons, falling slightly behind medical/outpatient costs. Quickening the hospital discharge over the past few decades, however, has led to older adults comprising a higher percentage of hospital stays. Older adults accounted for 20% of hospital stays and used one-third of the days of hospital care in 1970; by 2000 they

accounted for 40% of hospital stays and used almost one-half of the days of hospital care (Hall & Owings, 2002).

In 1998, the average Medicare beneficiary visited or consulted with a physician 13 times during the year (Federal Interagency Forum on Aging-Related Statistics, 2000). It is estimated that older patients occupy almost 50% of the time of health care practitioners, and it is predicted with near certainty that the percentage of time that health care practitioners will spend with older patients will continue to increase.

Medications

In 1995, older adults constituted 12% of the population but consumed 32% of all prescription drugs and 40% of over-the-counter drugs. Adding to the frequency of drug consumption among older adults has been the burden of rising prescription drug expenditures over the past several years. The growth in prescription drug expenditures was double-digit every year from 1994 to 2001. The annual growth expenditure reached an astonishing 19.7% in 1999, though it declined some in 2000 (16.4%) and 2001 (15.7%) as employers raised copayments.

Among persons aged 65 and over, 85% used a prescription drug in 2002, up 11% from 1994. There was an even greater increase of 17% among older adults using three or more prescription drugs during this time period, from 35% to 52%.

By 2001, prescription drugs accounted for 9.9% of all health expenditures due to higher priced new drugs, advertising of prescription drugs on television, and an increase in the number of prescriptions written by physicians. In 2005, prices for brand-name prescription medications rose 6%, while inflation overall was 3.4%. That was the sixth year in a row that medication increases had outpaced inflation.

Health Habits

On the brighter side the health habits of older adults may, on balance, be slightly superior to those of younger adults. People aged 65 and over, for instance, are less likely to smoke, drink alcohol, be obese, or report high stress. They eat more sensibly than do younger adults, are as likely to walk for exercise, and are more likely to check their blood pressure regularly. Older adults over the past decade improved their participation in medical screenings and immunizations, and adults in general increased their seat belt use (D. Nelson et al., 2002).

On the darker side, older adults are more likely to be sedentary and malnourished. Their advantage in being less stressed may be due merely to less awareness of, or willingness to report, stress. They may be smoking less owing to the fact that smokers are more likely to die before age

65. Also, when older adults engage in risk behaviors such as excess alcohol consumption, sedentary behavior, poor nutrition, and lack of seat belt use, their vulnerability to morbidity and mortality is greater.

To put things in perspective, though, few adults in the United States, young or old, live a comprehensive healthy lifestyle. National data reveal that only 3% of the population engages in all four of the following lifestyle choices: nonsmoking, healthy weight, five fruits and vegetables per day, and regular physical activity (Reeves & Rafferty, 2005). Among older adults, one-third do not get any leisure-time physical activity, two-thirds do not eat five servings of fruit and vegetables a day, and one-fifth are 30 pounds or more overweight.

Perceptions of Health

Most people who are elderly tend to view their health positively. Seventy-six percent of the younger old, aged 65–74, rate their health as being good, very good, or excellent. Among those aged 75 and over, 66% report good, very good, or excellent health. This percentage declines to 56% among older adults 65 and over without a high school diploma and to 52% among minorities who are aged 75 and older.

Volunteering and Work

Many older adults are active and productive, choosing to engage in volunteer opportunities and work. In any given year, almost one out of every five older Americans engages in unpaid volunteer work for organizations like churches, schools, or civic organizations. In addition, an unknown additional percentage of older adults do other types of volunteer work, like helping the sick or disabled or helping out with grandchildren.

Surprisingly, those who continue to work after age 65 are *not* less likely to volunteer than those older adults who retire (Caro & Morris, 2001). Researchers believe that the potential for increasing volunteerism among retired older adults is significant and that "in the period immediately after retirement there is a heightened receptivity to volunteerism" (Caro & Morris, 2001, p. 349).

According to the Bureau of Labor Statistics, a growing percentage of older workers are remaining in the workforce (Figure 1.2). After decades of decline, the labor force participation rate for those aged 65 and over leveled off in the mid-1980s and has since been increasing. Those just over the conventional retirement age of 65 have increased even more. A 2002 study by AARP reported that 69% of individuals between the ages of 45 and 74 plan to work in some capacity in their retirement years, primarily due to economic reasons.

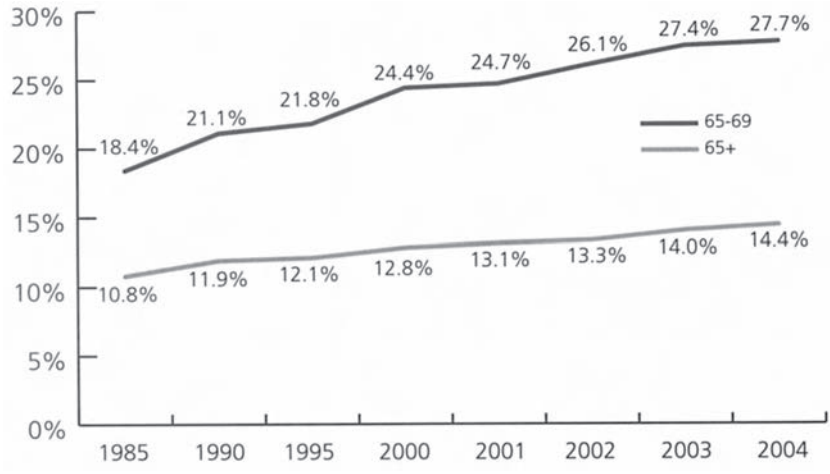


FIGURE 1.2 Labor force participation rates of persons aged 65–69 and 65+, 1985–2004.

Note. From "Employment and Earnings," U.S. Bureau of Labor Statistics, January 1986, 1991, 1996, 2001–2005.

In addition to having a longer retirement phase to save for, employees are increasingly less likely to enjoy the security of defined benefit programs (i.e., traditional pensions) and instead must rely on defined contribution programs (i.e., do-it-yourself retirement savings plans).

Labor force participation is higher in the United States than in most other countries, such as France, Germany, Italy, Sweden, the United Kingdom, and Canada, although it is considerably lower than the rate in Japan: 36% for men and 16% for women.

Educational Status

Between 1960 and 1989, the median level of education among older adults increased from 8.3 to 12.1 years. The percentage of older adults who completed high school rose from 18% in 1950, to 28% in 1970, to 70% in 2000.

By 2000, the median number of years of education of people who had reached age 65 was equivalent to that of all adults aged 25 and over (almost 13 years). However, the percentage who had completed high school varied considerably by race and ethnic origin among older persons in 2000: 74% of Whites, 63% of Asians and Pacific Islanders, 46% of African Americans, and 37% of Hispanics.

About 16% of older adults in 2000 had a bachelor's degree or more, up from 4% in 1950. As the formal educational level of older adults

continues to rise, this may well correlate with an increase in their interest in seeking out health information and engaging in health-promoting activities in their communities.

Political Power

The Federal Election Commission reports that older adults are disproportionately likely to vote. Moreover, the percentage of voting elders has increased over the past 20 years. In 1978, older adults generated 19% of all votes cast; in 1986, 21%; and in 1998, 23%. Yet older adults in 1998 constituted only 13% of the population.

Older adults are more likely to demonstrate higher levels of civic engagement, paying more attention to politics and public affairs than younger adults (Binstock & Quadagno, 2001). Voting differences, however, are greater among older adults than between younger and older adults as socioeconomic class, ethnicity, gender, and religion are more important influences on voting patterns.

Internet Access

A national 2004 survey from the Pew Internet and American Life Project reported that the percentage of older adults who accessed the Internet had increased 47% between 2000 and 2004. This increase comes primarily from persons who are in their 60s (54% online) versus those aged 70 and older (28% online). While the online usage of older adults continues to lag behind younger adults, the difference between older boomers and younger adults is not statistically significant. Thus Internet access between younger and older adults will close rapidly in the near future.

Gender differences have disappeared during this time period, with older women as likely to use a computer as older men. Income and education levels, however, still predict differences in computer usage.

Poverty

The poverty rate among older persons has fallen from 35% of those aged 65 and over in 1969 to 10.4% in 2002. Without Social Security and cost-of-living increases, that percentage would have risen to 50% over that time. Thanks to a variety of sources of income, including Social Security (42%), public and private pensions (19%), earnings (18%), asset income (18%), and other sources (3%), poverty for older adults has fallen below the poverty rate for persons aged 18–64.

The declining poverty rate for older adults may be overstated. The U.S. Bureau of the Census assumes that the costs of food and other

necessities are lower for older adults and does not adequately take into account that older adults spend proportionately more on health care than do younger adults. Moreover, there are hidden poor among the older population who reside in nursing homes or who live with relatives and are not counted in the official census statistics (Hooyman & Kiyak, 2005).

The poverty rate was 2–3 times higher for older African Americans and Hispanics than for older Whites and more than twice as high for older women than older men. Combining gender and ethnicity, poverty in 2003 was 10% for older White women but 27.4% for older African American women and 21.4% for older Hispanic women.

Racial and Ethnic Composition

The diversity of the older adult population in America is increasing. Between 1990 and 2030 the increase in population age 65 plus will be 131% among African Americans, 147% among Native Americans, 285% among Asians and Pacific Islanders, and 328% among Hispanic Americans. Non-Hispanic White older Americans, who are now in the majority, will only increase 81%.

Although health professionals will need to become more knowledgeable about the ethnic backgrounds of their older clients, there is great diversity within ethnic groups as well. Age, gender, region, religion, English-speaking skills, income, education, lifestyle, physical disability, marital status, place of birth, and length of residence in the United States are examples of important variables to consider within each ethnic group.

There is also a continuum of acculturation that occurs among elders within each ethnic group. Acculturation is the degree to which individuals incorporate the cultural values, beliefs, language, and skills of the mainstream culture. To avoid stereotyping ethnic groups, there needs to be recognition of the many distinctive ethnic subgroups (Haber, 2005a).

DEFINITIONS OF HEALTHY AGING

Health professionals need to be cautious about defining good health for older adults. This is the message delivered by Faith Fitzgerald, MD, in an editorial in the *New England Journal of Medicine:*

> We must beware of developing a zealotry about health, in which we take ourselves too seriously and believe that we know enough to dictate human behavior, penalize people for disagreeing with us, and even deny people charity, empathy, and understanding because they act in a

> way of which we disapprove. Perhaps [we need to] debate more openly the definition of health. (Fitzgerald, 1994, pp. 197–198)

The Federal Government

A broad definition of health is provided by the federal government's Public Health Service through its 1990 Health Objectives for the Nation. This definition of health includes the following three components:

1. Disease prevention, which comprises strategies to maintain and to improve health through medical care, such as high blood pressure control and immunization.
2. Health protection, which includes strategies for modifying environmental and social structural health risks, such as toxic agent and radiation control, and accident prevention and injury control.
3. Health promotion, which includes strategies for reducing lifestyle risk factors, such as avoiding smoking and the misuse of alcohol and drugs, and adopting good nutritional habits and a proper and adequate exercise regimen.

Extraordinary Accomplishment

The definition of good health in late life can be reframed substantially by viewing it from the unique perspective of extraordinary accomplishment. At age 99, Mieczyslaw Horszowski, a classical pianist, recorded a new album, and twin sisters Kin Narita and Gin Kanie recorded a hit single in Japan. At age 91, Hulda Crooks climbed Mount Whitney, the highest mountain in the continental United States (Wallechinsky & Wallace, 1993). A 63-year-old climbed one of the Himalayan peaks in 1998, a peak that only the most elite alpinists can ascend (Kinoshita et al., 2000).

At age 61, a California woman named Arceli Keh lied about her age (she said she was 51) in order to become eligible for a fertility program where she was implanted with an embryo from an anonymous donor. In 1996, at age 63, she became the oldest woman on record to have a baby. Her record was surpassed in 2006 when an unnamed 67-year-old Spanish woman, who had become pregnant after she received in-vitro fertilization treatment, gave birth to twins by Cesarean section in a hospital in Barcelona, Spain. Perhaps an even more extraordinary accomplishment in late life will occur when this woman raises her twin teenagers as an 85-year-old mother.

In 2005, in the United States Senate, the average age was over 60 years, the oldest it has ever been. Not surprisingly, the term *senate* derives

from the Latin word for "old." Golda Meir became prime minister of Israel at age 71.

Kozo Haraguchi ran the 100 m in 22.04 s, setting a record for his 95–99 age group. This 95-year-old Japanese man said he had to run cautiously because the outdoor track was slick with rain. Another runner, Johnny Kelley, won the Boston Marathon twice. Even more remarkable was that he started this annual race 61 times during his lifetime, finishing the 26.2 miles 58 times. Mr. Kelley died in 2004, at the age of 97. Another nonagenarian, though, continued to race in 2004. Fauga Singh moved from India to England and decided to take up running at the age of 82. At the age of 92 he set a world record for his age group by running the Toronto Marathon in 5 hr and 40 min.

At 77, John Glenn completed rigorous physical preparation to become the oldest space traveler in history. At 80, George Burns won his first Oscar. And to end on an ironic note, in 2004, at the age of 91, Red Rountree became the oldest known bank robber in United States history. Currently serving a 12-year term—which is likely a life sentence—in Texas, Red said he robbed banks for fun: "I feel good, awfully good for days after robbing a bank." After two successful bank robberies, the third time apparently was not the charm. The teller at the third bank, responding to the demand for money, asked the question, "Are you kidding?"

While I marvel at these examples of unusual achievement by aging adults, I do not use them as inspiration for older, or even younger, persons. These models are astonishing, but they do little to enhance the confidence of aging adults who do not believe they can—and oftentimes do not want to—come close to similar achievement.

As Betty Friedan (1993) noted in her book *The Fountain of Age*, older adults "attempt to hold on to, or judge oneself by, youthful parameters of love, work and power. For this is what blinds us to the new strengths and possibilities emerging in ourselves."

Prevention

Prevention is often categorized as primary, secondary, or tertiary (Figure 1.3). Primary prevention focuses on an asymptomatic individual in whom potential risk factors have been identified and targeted. Primary preventive measures, such as regular exercise, good nutrition, smoking cessation, or immunizations, are recommended to decrease the probability of the onset of specific diseases or dysfunction. Primary prevention is different than the term *health promotion* in that it is less widely ranging in scope and tends to be used by clinicians in a medical setting.

Secondary prevention is practiced when an individual is asymptomatic but actual (rather than potential) risk factors have been identified at

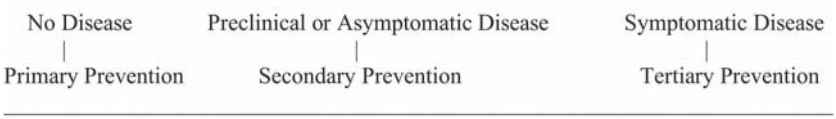


FIGURE 1.3 Three levels of prevention.

a time when the underlying disease is not clinically apparent. A medical screening as an example of secondary prevention is only cost-effective when there is hope of lessening the severity or shortening the duration of a pathological process. Blood pressure screenings, cholesterol screenings, and bone densitometry are the most widely implemented forms of secondary prevention.

Tertiary prevention, which takes place after a disease or disability becomes symptomatic, focuses on the rehabilitation or maintenance of function. Health professionals attempt to restore or maintain the maximum level of functioning possible, within the constraints of a medical problem, to prevent further disability and dependency on others.

Tertiary prevention corresponds to phase 2 (rehabilitation of outpatients) and phase 3 (long-term maintenance) of the cardiac rehabilitation of a cardiac patient (phase 1 is the care of a hospitalized cardiac patient). A study of 10 randomized clinical trials involving more than 4,000 patients who had myocardial infarctions revealed that patients who completed a program of tertiary prevention reduced their likelihood of cardiovascular mortality by 25% (Oldridge et al., 1988).

A focus on prevention may be more appealing to some older adults than an emphasis on health promotion. Older adults are likely to be coping with chronic conditions, and the prevention, delay, or reduction of disability and dependency is a much more salient issue for them than it is for most younger adults.

Moreover, among medical professionals, the relevancy of the term *prevention* is enhanced because several prevention activities, like mammograms, are reimbursable through Medicare. Prevention has gotten its foot in the door, so to speak, in the system of health care reimbursement, whereas the activities of health promotion have not.

One advantage of the use of the term *health promotion*, however, is that it encompasses mental and spiritual health concerns. Instead of clients and health professionals becoming fixated on risk factors and the prevention of disease or disability, health promotion or wellness can be viewed as an affirming, even joyful, process. As health professionals who promote health, for instance, we can encourage playing with grandchildren or the joy of bird watching to an older client and not concern ourselves with its ability to prevent disease or illness.

Health promotion is also a more proactive term than *primary prevention*, which tends to imply a reaction to the prospect of disease. Directing a client's anger or frustration into political advocacy work, for example, is a proactive, health-promoting enterprise that benefits both the individual and society.

In one (admittedly dated) health study, however, in-depth interviews with older adults who declined to participate in a health promotion study reported that they were less familiar and comfortable with the term *health promotion* than were those who eventually participated (Wagner et al., 1991). The research topic of assessing older adults' attitudes toward different health terms remains largely unexamined, and this ignorance can reduce our effectiveness as health educators.

Wellness

Although the term *wellness* has had many supporters in the health professions over the past 25 years (Jonas, 2000), particularly among persons who conduct health programs at large U.S. corporations (Jacob, 2002), it tends to be embraced less than the terms *health promotion* and *disease prevention*. Nonetheless, wellness conveys an important message—that good health is more than physical well-being. In fact, seven dimensions are usually touted among wellness advocates, as shown in Table 1.4.

Wellness is a welcome and important reminder about the breadth of health promotion that is missing from most other terms. The only limitation to the term *wellness* is that it tends to be identified with the more alternative activities—acupuncture, homeopathy, spiritual healing, aroma therapy—to the exclusion of more mainstream activities, like exercise and nutrition. Thus it conveys flakiness to some.

Anti-old and Anti-aging

Who is healthier: an old person or an older person? Is this a preposterous question? Maybe not. Do the terms *old* and *older* reflect our prejudices? One of the leaders in the field of gerontological language, Erdman Palmore, thinks so. Palmore suggests that most of the synonyms for old are unhealthy in some way, words like *debilitated*, *infirm*, and *frail*. An older person, on the other hand, is a more neutral term; and perhaps the term *elder* connotes an even healthier role for older persons in society (Palmore, 2000).

And yet I am reminded of a conversation I once had with Maggie Kuhn, the founder of the advocacy organization the Gray Panthers. She reported on an exchange that she had with President Ford at a hearing

TABLE 1.4 Seven Dimensions of Wellness

Dimension	Attainment
Physical	Exercise, eat a well-balanced diet, get enough sleep, protect yourself.
Emotional	Express a wide range of feelings, acknowledge stress, channel positive energy.
Intellectual	Embrace lifelong learning, discover new skills and interests.
Vocational	Do something you love, balance work with leisure time.
Social	Laugh often, spend time with friends and family, join a club, respect cultural differences.
Environmental	Recycle daily, use energy-efficient products, walk or bike, grow a garden.
Spiritual	Seek meaning and purpose, take time to reflect, connect with the universe.

she attended on a pension bill in Washington, DC. After gaining President Ford's attention, he asked her, "And what do you have to say *young lady*?" Maggie replied, "First of all, I'm not a young lady. I'm an *old woman*." She was making the statement that she was proud of being old and had earned that label.

A related concern is the anti-aging movement and its chief proponent, the American Academy of Anti-Aging Medicine. This professional society is "pursuing the fountain of youth with their lucrative nostrums and illusory interventions, (while) we geriatricians remain solidly in the trenches caring for our patients, the most aged, complex, frail, and vulnerable—far removed from the fantasies of eternal life, much less the fountain of youth" (Hazzard, 2005, p. 1435).

Most proponents of the anti-aging movement are focused not on the most aged, but on the middle-aged and the young-old, those most concerned about combating the signs of aging. One key weapon in their arsenal is the *cosmeceutical*, which combines the terms *cosmetic* and *pharmaceutical* and refers to a topical skin treatment formulated to eliminate the wrinkles and signs of aging (Bayer, 2005). If the cosmeceutical intervention proves insufficient, there are Botox injections, microdermabrasions, chemical peels, collagen injections, and plastic surgeries. Anti-agers deliver a strong message that aging is a disease that needs to be cured—at least cosmetically and temporarily.

I think, however, that we need a pro-aging movement, one that emphasizes the healthy aspects of aging. No longer needing to impress employers, in-laws, or peers, older adults are free to be themselves. The old not only have an opportunity to be freer, but wiser, more conscious of the present, and more willing to be an advocate for a healthy future. Maggie Kuhn certainly lived a pro-aging lifestyle.

Compression of Morbidity

According to Fries and Crapo (1986),

> although there is little hope for cure of chronic diseases through the traditional medical model, the onset of these diseases may be postponed through modification of risk factors, many of which are possible to control, either personally or socially. As the onset is delayed to older ages and approaches the limit of the human life span, we can envision a society where everyone can expect to live in vigorous health to close to the average life span and then die after a brief period of illness. (p. 37)

In other words, we have the potential for spending a longer time living and a shorter time dying.

For most people, though, the prospect of living a long time past one's 65th birthday is bittersweet. As Americans live longer today than ever before, we have a greater fear of a prolonged period of disability and dependency in late life.

One definition of healthy aging, then, is to be able to live life fully until death. According to one national study, though, only 14% of those who have died after age 64 were fully functional in the last year of their lives (Lentzner et al., 1992). Unfortunately, the study did not identify the number of older adults who, despite the fact that they were not fully functional in the last year of life, lived vital and fulfilling lives during that year.

Most of us are greatly concerned with the probability of being severely restricted for a long period in late life. The evidence is not encouraging in this regard in that the longer we live, the more likely we are to endure a prolonged period of disability prior to our deaths. Death after age 85 is almost 4 times more likely to follow a period of profound physical impairment than is death between the ages of 65 and 74 (Lentzner et al., 1992).

Examining the length of the dependency period prior to death, at age 65 we have about 17 years left to live, with 6.5 of those years in a dependent state (38% of our remaining years). Also, less than 6% are receiving help in the basic activities of daily living between the ages of 65 and 74. In contrast, at age 85 we have an average of 7 years left to live, with 4.4 years in a dependent state (63% of our remaining years). At age 85, more than one in four are receiving help in the basic activities of daily living (Guralnik, 1991).

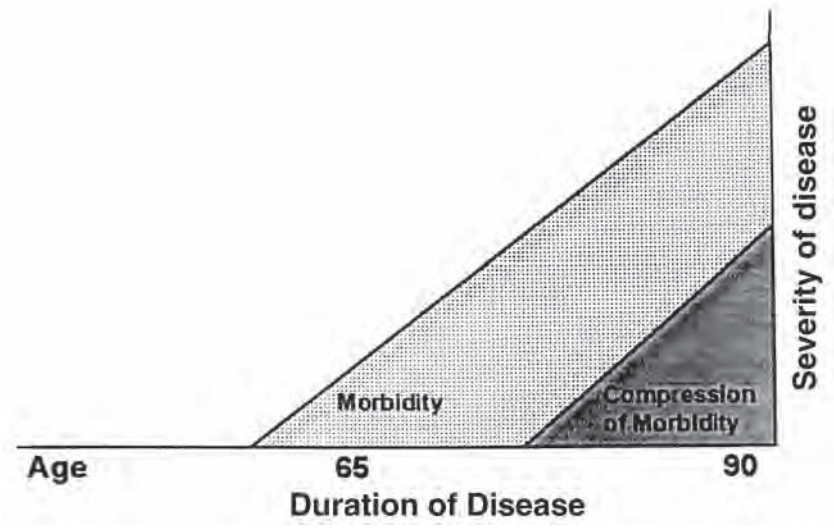


FIGURE 1.4 Compression of morbidity.

Pessimists argue that the period of morbidity preceding death will increase in the future due to (a) limited biomedical research funds available to improve the physical and mental capacity of the very old; (b) the fact that some major diseases, such as Alzheimer's, do not have recognized lifestyle risk factors that we can modify; and (c) medical advances, such as dialysis and bypass surgery, that will increase the life expectancy of individuals with disease rather than prevent the occurrence of disease.

Optimists, on the other hand, argue that there will be a *compression of morbidity* (see Figure 1.4) in the future due to (a) probable advances in biomedical research that will prevent or delay the occurrence of disease and (b) the continued potential for reducing risk factors such as smoking, blood pressure level, poor nutritional habits, and sedentary lifestyles that will result in better health.

At the same time that the general population will be able to delay the onset of chronic disease due to these factors, the life *span* (the maximum number of years of the species) is fixed. Thus, argue the compressionists, we will not only delay morbidity, but we will also shorten it.

Studies by Manton and colleagues (Connolly, 2001; Kolata, 1996; [Manton et al., 1998; Manton et al., 1993] analyzed data from the 1982–1999 National Long Term Care Surveys, a federal study that regularly surveys almost 20,000 people aged 65 and older. The researchers arrived at the unexpected conclusion that the percentage

of chronically disabled older persons—impairments for 3 months or longer that impede daily activities—has been slowly falling. Whereas 25% of people over age 65 reported chronic disability in 1982, only 21% reported this to be the case in 1994 (Manton et al., 1997). Also surprising was the increasing percentage during this time period of those over age 65 reporting no disabilities.

These unexpected findings still need further examination, especially as to whether they are linked more to initiatives in health promotion and disease prevention, such as improvements in diet, exercise, nonsmoking, and other lifestyle factors; or to medical access and advances, such as treatment for arthritis and cataracts; or to increased use of devices, such as canes, walkers, walk-in showers, support rails, and handicapped accessible facilities; or to societal improvements, such as an increase in educational and income levels.

HEALTH PERSPECTIVES AND AGING

Health Expectancy Versus Life Expectancy

Those who live to the age of 65 are likely to live into their 80s. Of the remaining average of 17 years to live after age 65, 12 are likely to be healthy and 5 will be years in which there is some functional impairment (NCHS, 1990b).

Place yourself in the shoes of the person who has just reached age 65. Are you primarily interested in extending your life for more than the 17 years you are likely to live, or are you most interested in how many of your remaining years will be healthy and independent ones?

Your health expectancy, or the number of healthy years you can expect to have left, depends to a great extent on your physical activity, nutritional intake, social support network, access to good medical care, health education, and health services. Health expectancy is more important to older adults than life expectancy (see Table 1.5).

TABLE 1.5 Healthy People 2000: Goal to Increase Years of Healthy Life Remaining at Age 65 to 14 Was Not Met

Year	Healthy life remaining
1990	11.8 years of healthy life remaining at age 65
2000	12.2 years of healthy life remaining at age 65

Physical Versus Emotional Aspects of Aging

There is a strong reciprocal relationship between the physical and emotional aspects of health. When our physical health is threatened, so typically is our emotional health. The converse is equally true.

As we age, however, it may be the case that good health is less dependent on physical status than on emotional status. One study reported on shifting perspectives of health over time, with older participants expecting physical health problems because of their age and discounting them somewhat because of this expectation (Keller et al., 1989). A study of 85-year-olds living in the Netherlands reported that physical function was not the most important component of successful aging. These older adults were able to adapt successfully to physical limitations. The researchers reported social contacts as the most important factor in well-being, and the quality of the contacts was more important than the number (Von Faber et al., 2001).

Another study of 32 elderly Catholic nuns generated, through open-ended interviews, more than 100 characteristics of health that were important to older adults besides physical health, including the ability to enjoy life and good personal relationships (Huck & Armer, 1995). An examination of multiple studies on declining physical health with age reported that many older adults who are frail and sometimes disabled did *not* evaluate their health or lives negatively (Pinquart, 2001).

Most health professionals subscribe to the notion that health is more than the absence of illness. Were this not the case, they would have to label the vast majority of older adults, 90% of whom are coping with a chronic condition, unhealthy. The chronic diseases that older persons contend with do not necessarily relate to their ability to perform daily activities. Disease, in fact, may not be evident even to the person who has it.

The presence or absence of disease may therefore not be a source of great concern to older adults. The ability to perform activities of daily living, however, *is* of great concern to older adults, who desire as much independence as possible (Duffy & MacDonald, 1990). The definition of health, especially among older adults, should not be linked with disease or its absence, as the medical model suggests, but with independence, the ability to accomplish one's goals, and the existence of satisfying relationships.

A health perspective that emphasizes the psychological status of older adults does not view health as a continuum ranging from physical disability and illness at one end, with a neutral point in the middle, where there is no discernible illness or wellness, to a high level of wellness at the other (Kemper et al., 1987; Sarafino, 1990). Critics of this type of health continuum argue that even a person who is functionally impaired or disabled and residing at one end of the alleged continuum can focus

considerable attention on a high level of wellness, devoting energy to health awareness, health education, and psychological growth.

Finally, health professionals need to walk a fine line with older clients. On the one hand they have been accused of ignoring the medical needs of older adults by discounting the viability of certain medical interventions due to age (Ebrahim, 2002). In fact, older patients can benefit as much from surgical interventions in their 80s as do younger patients (Varghese & Norman, 2004). On the other hand, health professionals can unduly focus on the reimbursable medical needs of older clients and neglect the alleviation of the emotional deterioration that often accompanies chronic illness.

HEALTH CARE

Medicare

Medicare was enacted in 1965 to help persons aged 65 or older pay for medical care. In 2003, Medicare covered 41 million older adults and more than 5 million younger persons who were disabled. Medicare is a major payer in the U.S. health care system, spending $309 billion in 2004, with projections to $670 billion in 2015. Ironically, despite the substantial reimbursements that older adults receive through the Medicare program, older Americans spend more money out of pocket now, controlled for inflation, than they did prior to the inauguration of Medicare.

Medicare Part A is referred to as hospital insurance, and most people do not have to pay a monthly premium because they are eligible through the Medicare taxes they paid while they were working. Part A includes hospital care ($952 deductible in 2006), inpatient psychiatric care (190-day lifetime maximum), skilled nursing facility care (100 days), rehabilitation or home care following a hospitalization, and hospice care for the terminally ill. There are restrictions on what kind of conditions are covered and the length of coverage, and copayments apply as well.

Part B is referred to as medical insurance and covers physician services, outpatient hospital care, and other medical services, such as physical and occupational therapy and some home health care. Part B requires an $88.50 per month premium (in 2006) and generally pays 80% of physician and outpatient services after an annual $124 deductible. Part B includes some medical screenings and clinical laboratory tests but does not cover dental services, hearing aids, eyeglasses, and most long-term care services. Chronic conditions are, for the most part, not covered by Medicare, and prevention coverage is limited primarily to medical screenings and immunizations.

In 2007 Medicare shifted, for the first time, to means-based testing for Part B premiums. Individuals earning less than $80,000 saw their premiums increased to $93.50 a month. Individuals earning over $80,000 ($160,000 for married couples) paid a surcharge ranging from $12.50 to $68.80 a month, depending on income level. This type of income indexing is expected to increase in subsequent years, and beneficiaries with high incomes may pay at least 3 times the amount of the basic premium.

Part C refers to private health insurance plans that provide Medicare benefits. Part D refers to the Medicare prescription drug plan which went into effect on January 1, 2006. This part is also administered by private health insurance companies. The privatization of Medicare and Social Security will be examined in chapter 14 on public health.

A little over one-fourth of the federal outlay for older adults is for Medicare, and these expenditures have been rising (and continue to rise) rapidly. Between 1960 (5 years before the onset of Medicare) and 1990, the proportion of the federal budget spent on programs serving older adults had doubled, from 15% to 30% of the federal budget. Much of this increase occurred between 1975 and 1988, when personal health care expenditures under Medicare increased an average 14.4% per year, more than twice the rate of inflation. Stated in absolute dollars, Medicare spending increased from $7.5 billion in 1970 to $114 billion in 1991.

Although the growth in Medicare spending has slowed since then, it is still dramatic. Medicare spending more than doubled between 1991 and 2001 (from $114 billion to $238 billion) and is expected by the nonpartisan Congressional Budget Office to more than double over the next decade under existing laws.

It is not surprising therefore that even though the single largest component of out-of-pocket costs for older adults is nursing home care, the federal government has resisted overtures to include substantial long-term care coverage under Medicare. Even without the additional expense of long-term care, Medicare is projected to become insolvent by 2019. This insolvency date may be reached sooner, after the costs of the Medicare prescription drug program and additional payments to private health plans become clearer.

The Centers for Medicare and Medicaid Services (formerly the Health Care Financing Administration) oversees all financial and regulatory aspects of the Medicare and Medicaid systems. For additional information, call 800-MEDICARE (800-633-4227) or go to the Medicare Web site (http://www.medicare.gov).

Medicaid

Medicaid is different than Medicare in that it is not focused primarily on older adults; it is state, not federally, managed; and it is funded jointly by

the states and the federal government, not just by the federal government. The most significant difference is that Medicaid is the largest source of funding for medical and health-related services for people with limited income, that is, what used to be referred to as a welfare program, in comparison to Medicare, which is partially financed by users through payroll taxes.

Because it is state run, Medicaid policies for eligibility, services, and payment vary considerably. One aspect of Medicaid that has not varied much, regardless of state, is that its costs have increased steadily throughout the country so that in 2004, it constituted, on average, one-quarter of each state's budget. Medicaid spending totaled $293 billion in 2004 and was projected to grow to $670 billion in 2015.

Moreover, Medicaid pays for nearly 60% of the costs of nursing home residents, most of whom are older adults, and it is for all practical purposes (6% of Americans have long-term care insurance) the only insurance plan for institutional long-term care. Medicaid is based on the premise that individuals pay out of pocket until they impoverish themselves to the point where they become eligible for coverage. Also, it is not legal for an older person to give away money from a bank account to relatives in order to qualify for assistance with long-term care expenses.

Societal Health Care Costs

In a democratic society, there is stiff competition for societal resources that are taxpayer subsidized. Health care (typically referring to medical care only), however, has consistently maintained its status in this country as a very high priority for these limited resources. Spending for national health care grew from 5% of the gross national product in 1960 to 16% in 2004. This represents an increase from $27 billion in 1960 to $1.9 trillion in 2004. (As an aside, I would like to note that on more than one occasion I have seen *trillion* mistakenly replaced by *billion* in the health care expenditure literature. I think this occurs because it is difficult to comprehend the definition of *trillion*. Even *Merriam-Webster's Collegiate Dictionary*, 10th edition has trouble with it, referring to *trillion* as "a very large number.")

The United States spends a higher percentage of its gross domestic product (GDP), 16%, on health care than does any other country. In 2004, health accounted for 10.9% of the GDP in Switzerland, 10.7% in Germany, 9.7% in Canada, and 9.5% in France. The disparity with U.S. expenditures would be even greater were we to find a way to include the 45 million younger Americans who lack access to the health care system through insurance coverage and were we able to increase the coverage of an additional 50 plus million persons who have inadequate insurance.

By all accounts we spend the most on health care compared to any other country, yet it does not necessarily mean we have the best health care. *Best* can be defined in any number of ways, including access to medical care by all citizens and a priority on disease prevention and health promotion over costly specialized medical procedures.

The World Health Organization made its first attempt to measure quality health care in its World Health Report, published in June 2000. The rankings were controversial, and clearly the reader needs to take the U.S. ranking (37th) with the proverbial grain of salt. Nonetheless, it is sobering to note that U.S. health care expenditures were more than double per capita those of Japan in 1999, yet Japanese citizens were expected to live 74.5 years of *healthy* life and U.S. citizens only 70 (Crossette, 2000).

Another international study of health care quality was conducted in 2006, and the United States ranked last when compared to Australia, Canada, Germany, New Zealand, and the United Kingdom. The per capita health expenditures of these five countries ranged from 33% to 53% of the United States, yet on 51 indicators—including such health promotion measures as use of mammograms, flu shots, medication reviews, and diet and exercise advice—the United States ranked last or tied for last in 27 (Monaghan, 2006).

Health Care Versus Medical Care

It is estimated that 60% of early deaths in the United States are due to behavioral, social, and environmental circumstances, versus 10% due to shortfalls in medical care (with genetic predisposition constituting the remainder; McGinnis et al., 2002). Paradoxically, however, the behavioral, social, and environmental components of health care have not constituted a high priority for the health care dollar. In fact, only about 3% of the nation's health care costs were spent on health-promoting and disease-preventing activities.

Most of that 3% goes either to the physician's office or other clinical settings for preventive measures, such as medical screenings and vaccinations (about 35%), or to health protection in the physical environment, such as toxic agent and radiation control (about 30%; *American Medical News*, 1992a). And only a portion of the remainder is spent on changing unhealthy behaviors.

Although there has been undeniable financial neglect at the federal level for decreasing unhealthy lifestyles among the American people, increasing public attention has been focused on this problem area ever since the publication of the landmark document *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention*

(USDHHS, 1979). This report provided considerable credence for the idea that major gains in health and independence in the future are likely to come from personal lifestyle changes.

Dr. John Rowe, director of the MacArthur Foundation's Consortium on Successful Aging, also concluded that our vigor and health in old age is mostly a matter of managing how we live (Brody, 1996). Supporting this contention is a widely cited article in the *Journal of the American Medical Association* (McGinnis & Foege, 1993) which suggested that we should no longer view death as being due to heart disease, cancer, stroke, and chronic obstructive pulmonary disease, but rather to tobacco, inactivity, diet, alcohol, microbial and toxic agents, sexual behavior, motor vehicles, and illicit or inappropriate use of drugs.

A HEALTH PROMOTION AND AGING MODEL

Practitioners in the community or clinic who want to promote the health of older clients are limited by time, resources, reimbursement, and training. Although these issues are addressed elsewhere in this book, a succinct conceptual framework for promoting the health of older adults is not. The main components of a model of health promotion and aging might be useful for the training of health professionals (Haber, 1992a, 1993b, 1996, 2001b; Haber & Lacy, 1993; Haber et al., 1997, 2000) and are presented next.

The Aging Component

I criticized the Healthy People 2010 leading health indicators because they were not age-specific. And yet I must confess that the content of this book, *Health Promotion and Aging*, frequently lacks specificity when it comes to aging. Younger and older age segments of the second half of life have little in common. Yet each end of this age continuum is becoming increasingly important to practitioners, educators, and policy makers in the coming years.

The young-old are in their 50s and 60s, people who in all likelihood are not enthusiastic about an oxymoronic label that includes the dreaded term *old*. As the young-old become synonymous with the baby boomers, though, they may have a new name to adjust to: the gerontology boomers. The cutting edge of the baby boomers turned 62 years of age on January 1, 2008, with another boomer being added to the ranks every 8 s. And just as the baby boomers were hard to ignore as they disrupted health care and educational institutions, and later as Vietnam War protesters, they will be hard to ignore as gerontology boomers, adults who are eligible for AARP.

Boomers are not old in the sense of physical vitality, mental acuity, or occupational productivity. But none have escaped diminished hearing and vision; few have overlooked the fact that more of their life is behind them than ahead; and many have given considerable thought to their retirement years.

It is during these years that the incidence of major chronic conditions such as arthritis, hypertension, and obesity rises significantly. At the same time, more than 4 million Americans between the ages of 50 and 64 are without health insurance. These persons are too young for Medicare, not poor enough for Medicaid, and not very well protected by the Age Discrimination in Employment Act.

Given the substantial number of years remaining to persons in this age group, and the potential to defer or prevent chronic impairments, it is imperative that a health promotion and aging model follow the lead of AARP and begin to target the gerontology boomers.

The *old-old* are persons age 85 and above (for an interesting essay on the "dwindling years," see Sandock, 2000). Probably half of them are physically frail, mentally diminished, or societally disengaged. These older adults have a challenging and diverse set of problems to solve in order to remain independent. At the same time, their problems are likely to be costly to resolve and bedeviling to solve for future cohorts of politicians.

In this era of needing to reduce the federal debt, how do you provide government subsidy for costly interventions such as home care support that is preferred by most old-old, programs to strengthen muscles that are in danger of becoming too weak to maintain independence, or prescription medications that are costly but vital for maximizing functional ability? When the prescription medication reimbursement program was added to Medicare in 2006, it was accomplished only by adding to the federal debt. While intergenerational rivalry is currently more of a theory than a reality, our children and grandchildren may some day come to resent this type of financial profligacy.

On the bright side, some of the nonagenarians have taken up pumping iron for the first time. And the potential to strengthen the old-old, to keep them independent in a home setting, to engage them in society, has never been more promising. This potential for improvement continues through the dying process, when the ability to die in comfort with family and friends visiting in a home environment is also, thanks to the hospice movement, more probable as well.

The Health Component

Communication and Collaboration

Two fundamental assertions within this health promotion and aging model are that it is better for older adults to collaborate with health

professionals than to take a passive, compliant, or—equally likely—non-compliant role, and it is also better to collaborate than to engage in health-promoting activities on one's own.

These assertions are based on two facts: (a) that most older adults have medical conditions that require professional supervision, and health-promoting activities can affect these medical conditions; and (b) that health professionals who keep up with the health promotion field can make vital contributions to the health-promoting efforts of older adults.

Effective communication between clients and health professionals is an essential component of collaboration and can lead to better results and more satisfied clients and health professionals.

Health Education

Health education has advanced considerably beyond the idea that mere knowledge inspires change. First, given the plethora of information that pours out of the media, bookstores, libraries, and mouths of experts, it is difficult for individuals to sort out accurate, up-to-date information that is pertinent to their particular health needs.

Second, older adults learn best in andragogical (adult-oriented learning) situations, in which new ideas are presented through collaborative relationships, and in small participative groups, where they have control over the learning and maintenance processes.

Third, education by itself is typically insufficient to inspire behavior change. It is far more effective to add behavior and psychological management techniques to the transmission of knowledge as well as to infuse the educational process with social support.

Health Behavior Change

Assessments help determine where best to focus one's limited time, energy, and resources for health behavior change. Crucial to this process is selecting the area that the individual (or the focus can be on the collective—ranging from group, to state, to nation) is most ready to change. It is the rare or mythical person who is attentive to every periodic medical screening and who strives constantly to improve every aspect of a healthy lifestyle. It is more realistic to set a priority or a set of priorities and devote energy and time to it or them.

Assessments lead to interventions, and interventions should focus on goals that are modest and measurable in order to increase the likelihood of success. Attention must also be paid to the important components of the intervention, such as building and maintaining motivation; establishing the new behavior as a habit; garnering social support; setting the

health goal for a short period of time on the way to more ambitious, longer term goals; and problem solving around the barriers that have prevented success in the past and might be anticipated to arise in the future.

Social cognitive theory underlies health behavior assessments and interventions and suggests social, behavioral, and psychological management techniques for health behavior change. Regarding social support, the most likely sources come from family members, friends, neighbors, and peers. Peer support can be found in community health education programs, intervention programs, and mutual help groups. The medical profession is also a potential source of social support, but because it tends to slight behavioral, psychological, and social interventions, it is underutilized.

Regarding behavioral techniques, common strategies include health contracting, self-monitoring, stimulus control, and response substitution. Widespread psychological techniques include stress management and cognitive restructuring.

It is important for health professionals to learn multiple social, behavioral, and psychological techniques in order to address the unique and multifaceted needs of older adults.

Community Health

Health professionals have limited time, knowledge, and skills with which to help their older clients change health behaviors. It is therefore vital that older adults be as informed as possible about the community health options that are available to them. These options are proliferating at a variety of community sites, such as religious institutions, community centers, shopping malls, government agencies, professional associations, and nonprofit agencies.

Health professionals need to visit these sites as well as get feedback from clients who visit them in order to make more effective referrals.

Diversity

Unique problems emerge from diversity: (a) Asian American elders who become the first generation of their ethnicity to be placed in American nursing homes by their baby boomer children; (b) older women who have inadequate retirement incomes because they spent many years in unpaid caregiving roles; (c) rural elders who do not have access to nearby hospitals or health professionals. What do we gain by focusing on the diversity of aging within America as well as from the study of global aging? At minimum, we gain more sensitivity to the disparate ways we

age. At best, we discover innovative strategies for improving the quality of life as we age.

Advocacy

Until utopia comes to America, the health care system will never meet all the health needs of all the people all the time. In recent years, in fact, health care inflation has started to soar again, forcing policy makers and medical administrators to make tough decisions about further limiting the availability of health professionals and other health care resources.

The health care system can be continually improved, however, and oftentimes through advocacy. By dramatizing their particular plight to community leaders, media representatives, and state and federal legislators, older adults can be effective change agents in ways that health professionals cannot. When health professionals mobilize their clients to political or community action, they may not only help to bring about a more responsive health care system for their clients, but also for themselves. Health professionals can also advocate for change by joining professional organizations and advocacy groups, reaching out to Congress, writing articles, and appearing in the media.

QUESTIONS FOR DISCUSSION

1. Must health promotion and disease prevention *save medical dollars* in order to inspire financial support for such activities from our federal and state governments and through private insurance reimbursement? Present a brief argument supporting a positive response, and then a negative response.
2. Are you in favor of the federal government monitoring goals for healthy aging? If so, how would you improve federal intervention? If not, why?
3. Will age 65 remain the de facto definition of old age? If yes, why? If not, what will replace it, and will there be multiple chronological markers for old age?
4. Americans value individual responsibility. Should we as individuals bear full responsibility for our health-promoting activities? Why?
5. Many people aged 75 and over perceive themselves as middle-aged. What do you think about this phenomenon? Explain.
6. Does an increase in chronic conditions mean a comparable increase in disability? Why?
7. What is *your* definition of healthy aging?

8. Are you optimistic or pessimistic about the occurrence of a compression of morbidity? Explain your reasoning.
9. Do you think we should replace the academic focus on life expectancy with a focus on health expectancy? Why?
10. Why do we call medical care *health care*?
11. What are two or three of the most important changes that are needed to convert our medical care system into a health care system? How do we make these changes?
12. What do you think is the most important health objective that should be set for older adults for the Healthy People 2020 initiative, and what should federal and state governments do to help?
13. What can both health professionals and laypersons in your community do to help achieve the objective you set in the previous question?
14. If you were writing a book on aging and health promotion, which age range would you cover: 50 plus, 65 plus, 80 plus, all ages, or something else? Justify your answer.
15. Describe one way that you could improve on the health promotion and aging model.
16. Examine one other topic in this chapter that you found interesting and has not been explored when answering the previous questions. Why did you find this interesting?

CHAPTER TWO

Health Professionals and Older Clients

> The art of medicine consists of amusing the patient while nature cures the disease.
>
> —Voltaire, French physician and author

Voltaire knew that most medical conditions are self-limiting and that benignly amusing the patient is oftentimes all that is needed. Other than for, perhaps, a unique problem with stress management, benign amusement is not enough help to provide older clients who want to collaborate with health professionals on health promotion or disease prevention goals.

COLLABORATION

Suffering is an appropriate adjective for many patients. In fact, the term *patient* is derived from a Latin word meaning "to suffer." Patients, however, are also associated with another adjective: *passive*. And passivity is no longer appropriate for patients. When it comes to managing chronic conditions or engaging in health promotion or prevention, aging persons are better off participating in the decision-making process and becoming collaborative clients rather than patients who passively comply with the decisions of health professionals. For this reason I prefer to use the term *client* or health care *collaborator* in this book, though on occasion I use the term *patient* when it is more relevant for the context.

In order to collaborate, clients must understand the choices available to them. These choices may be profound, such as deciding whether to combine chemotherapy with visualization techniques, or mundane, such as helping to decide on the timing of a treatment plan. Research has shown that client participation, even in mundane choices such as the timing of chemotherapy treatment, can result in fewer side effects (Spiegel & Bloom, 1983).

Similarly, nursing home residents receive health benefits when encouraged to make choices about their environment. Residents who make decisions become more sociable, show improvement in their mental health, and even live longer than do residents who adopt a passive lifestyle in an institutional setting (Rodin & Langer, 1977).

Another example of the benefits of participating in decision making is demonstrated by clients who improve adherence with their drug regimen after participating in the choice of which medication to take. Clients may make this choice knowing that they are able to live more easily with the side effects of one medication in comparison to another (Lorig, 1992). Or clients who take multiple medicines may choose a less challenging medication schedule because they know that adherence will improve in a lifestyle that is already characterized by a busy calendar and a faulty memory.

In contrast, many medical decisions are made as a consequence of physician priority rather than client preference. For example, the selection of the best treatment for prostate cancer—surgery or radiation—is often difficult to make. The choice, however, usually depends on whether a patient visits a urologic surgeon or a radiation oncologist. Surgery is less likely for benign prostate enlargement if physicians involve patients in the decision-making process by educating them about the options ("Controversial Cases," 2002).

Willingness to Collaborate

In a 1992 national survey by the Gallup organization, 63% of the 1,514 randomly selected adults reported that doctors did not involve patients enough in treatment decisions (*American Medical News*, 1992b, p. 16). A survey sponsored by the American Board of Family Practice (1987) reported that earlier cohorts of older persons have been less likely to take an active role in the professional–client relationship, but present and future cohorts of older adults have significantly higher educational levels than their predecessors. Educational levels correlate with client willingness to collaborate with a health professional.

Even older adults with less formal education, however, are more likely than previous cohorts of older adults to be exposed to health information from television, radio, newspapers, and magazines. This type

of informal health education, which prevails today, also correlates with client willingness to collaborate with a health professional.

Regardless of educational level, clients may differ significantly in the degree to which they want to collaborate in an active way in a health care encounter. Some clients want to give up responsibility to the practitioner; others want an active part in the decision-making process (Haug & Lavin, 1981). These two perspectives, however, may not be as contradictory as they appear. A focus group study of coronary artery disease patients, for instance, reported that older patients were likely to prefer that doctors make *certain* decisions for them (Kennelly, 2001). This deference may not mean they preferred to be passive about making *all* decisions, but either the patient or the physician was trying to simplify a particularly complicated or uncertain decision-making process (Braddock et al., 1999; Kennelly, 2001).

Practitioners also vary in their willingness to collaborate with patients. The same practitioner will relate to different patients in different ways. One study of patients at primary care clinics, for example, reported that physicians were less willing than they were with younger patients to ask patients aged 65 and older to change their health behavior habits or to provide them with health education or counseling (Callahan et al., 2000).

Philosophical orientations among practitioners vary as well. Some health practitioners want a professional-centered relationship with patients. They want to be in total control of the interaction and prefer brief responses to their questions. This approach is guided by highly structured questions to patients. Others are more client-centered. They ask open-ended questions, value information on the psychosocial aspects of the health problem, restrict the use of jargon, elicit the client's perception of the health problem, and encourage clients to participate in the decision-making process (Sarafino, 1990).

The theoretical middle position is for the health professional to assess each client's willingness to be active in his or her health promotion and medical care decision making and then match his or her strategy with the level of participation desired by the client. Although this approach can theoretically reduce client stress level and enhance communication, it is based on an untested assumption: that the health professional can accurately assess the client's willingness or potential to be active in his or her health decisions.

Another option is to encourage clients to be more involved in their health care, regardless of their initial enthusiasm toward this prospect. This stance can be justified on the basis that in this age of managing chronic health problems and promoting health over long periods of time, it is in the best interests of clients that we encourage them to be informed and involved.

Client Empowerment Versus the Passive Patient

From the client's perspective, empowerment means having the opportunity to learn, discuss, decide, and act on decisions. From the perspective of the health professional, empowerment of clients means not only to provide service to them, but also to collaborate with them and to encourage their decision-making abilities.

The role of the *passive patient* evolved from the belief that health care is too complex to be understood or controlled by the layperson—that the doctor knows best. In the past, when acute care medicine reigned supreme, the patient only came to the physician when seeking a cure, and this attitude merited validity.

Today, however, acute care diagnosis and treatment are but two of many important health care activities. Other high-priority health activities include health maintenance, rehabilitation, disease prevention, health promotion, and health advocacy. The one element common to these areas is persistence: One cannot maintain, rehabilitate, prevent, promote, or advocate successfully, except on a long-term basis. The passive patient role, extended over time, can be dangerous to one's health.

Health professionals frequently encounter older clients who could benefit were they more assertive about improving their health and the health care system in which they participate. Following are some typical examples:

- An older client with unhealthy lifestyle habits expresses the desire to eat less and get more exercise, but no health professional has helped galvanize this client to action.
- A chronically impaired older client, or a member of this client's family, is disgruntled by the lack of some service, such as home care or respite, that could enhance the client's independence or the family caregiver's mental health; however, this service is not covered by Medicare or a medigap insurance policy, and the family cannot afford it.
- A client who is recovering from a stroke (or heart attack, cancer surgery, etc.) appears to be isolated and discouraged. This client could benefit from interacting with people who are coping with similar challenges.
- An older client who takes multiple medications on an ongoing basis is having trouble complying with the medication regimen and needs help in managing the medication schedule and monitoring possible interactive effects.

The passive client or family member has little hope of rectifying any of the aforementioned situations, and health professionals cannot solve

all problems for all clients. Health professionals can, however, motivate, educate, refer, and follow up. These interventions can empower the older client or family member.

How to Collaborate

The U.S. Preventive Services Task Force recommendations for patient education and counseling (U.S. Preventive Services Task Force [USPSTF], 1996) are applicable to how to collaborate with a client. These recommendations are liberally paraphrased as follows:

1. Consider yourself a consultant, and help clients remain in control of their own health choices.
2. Counsel all clients, and especially reach out to those who differ from you in age, educational level, gender, and ethnicity.
3. Make sure your clients understand the relationship between behavior and health. Understand, though, that knowledge is necessary, but not sufficient, to change clients' behaviors.
4. Assess clients' barriers to change, including their lack of skills, motivation, resources, and social support.
5. Encourage clients to commit themselves to change, involving them in the selection of risk factors to eliminate.
6. Use a combination of strategies, including behavioral and cognitive techniques, the identification and encouragement of social support, and appropriate referrals.
7. Monitor progress through follow-up telephone calls and appointments, and activate your health care team, including the receptionist and other office staff.
8. Be a role model.

Should Medical Encounters Include Health Promotion?

Health promotion takes place primarily in one's home, neighborhood, or as part of a community health program. Should it also be a part of an individual's medical care? Arguing against it is that physicians and other clinicians have their hands full taking care of medical needs. Time is at a premium for getting medical work done; is it wise to hastily include health promotion, perhaps at the tail end of a medical encounter? Lack of time is exacerbated by the fact that many clinicians are not particularly well trained in health promotion or inclined to participate in this type of activity.

I argue that health promotion can, and should, be a part of most medical visits. In response to lack of time, a meta-analysis of 34 clinical

trials showed that even brief physician advice, perhaps 3 min, can impact on smoking cessation, dietary changes, and exercise promotion (Egede, 2003; Kottke et al., 1988). Also, as people age, they visit medical clinics more frequently, providing an ongoing opportunity to briefly encourage health promotion and to follow up on advice. In addition, health promotion and medical care should not be mutually exclusive domains. Exercise and diet, for instance, can impact on medication usage.

Changing Medical Encounters Into Health Encounters

Although some persons may enthusiastically discuss health issues with their nurses, physicians, or other health professionals, many do not. People may simply wish to resolve the immediate medical problem with a health professional. They may not view health promotion as a personal priority, much less an issue to be discussed during an illness-related visit. Moreover, persons who *are* interested in health-promoting practices may not think of their health professional as an authority in this area.

If health professionals are interested in promoting health, therefore, what should they do to encourage a collaborative health-promoting relationship? First, they can inform clients at their first visits that health issues are part of their job. Second, it helps to have an ample supply of health-related materials readily available: health articles posted on bulletin boards, a stock of updated health education materials in the waiting area, and relevant health materials given directly to clients. Third, office personnel, such as receptionists, need to be trained to distribute and explain health information and health assessment forms to waiting clients.

The likelihood is not great that a nurse, physician, or other health professional will turn an office waiting room into an environment that is conducive to health education. A survey of 150 South Carolina physicians, for instance, found that most thought the office waiting area a potential place for health education, but few had purchased any health education materials. In contrast, most spent over $100 a year on commercial magazine subscriptions (Taylor et al., 1982).

An Office System for Implementing a Health Promotion Practice

Several researchers have presented ideas on how to incorporate health promotion into a medical practice (Agency for Healthcare Research and Quality, 2002; Beck et al., 1997; Haber & Looney, 2000; Leininger et al., 1996; Stock et al., 2004). A summary of these ideas and practices can be grouped into four components: leadership, goal setting, intervention, and evaluation and feedback.

Leadership needs to inspire office staff to accomplish a health goal. The goal may be simply stated as "we want to promote health by encouraging our patients and staff alike to take health-promoting action most days of the week." Leadership must also let office staff know what is expected of them and how they will be held accountable. Leadership need not be limited to clinicians. A proactive receptionist can take a leadership role, from the early stages of recruitment to the end stage of providing follow-up results to patients.

Goal setting can be done on an individual basis, with each patient completing a brief health assessment. A more practical strategy is to determine a *specific* health goal for all patients based on, for example, an unusually low rate of influenza vaccinations or colorectal cancer screenings or a high percentage of smoking or overweight patients. Goals should be bound by time, perhaps 6 months, to maximize staff energy and to assess results.

Intervention has several subcomponents. How will *recruitment* be conducted: in-person, through mailings, or through flyers that are posted? How will patient contacts and results be *tracked?* There are a variety of effective tracking systems, including chart inserts, flow sheets, and office computer systems that can facilitate systematic follow-up of clients' attempts to change or maintain health habits. *Location* of the intervention can be patient-determined, perhaps carried out in the patient's home; clinic-based, possibly a group health intervention; or a referral to a community health program, perhaps with the aid of a community health resource directory that is developed over time.

Evaluation and feedback can be multifaceted. A periodic inquiry with staff and patients can determine whether the intervention appears to be working as intended. Health results from patients can be calculated, such as a percent increase in mammogram screenings. Feedback should be given to staff, with successes celebrated and a follow-up discussion on what to do next. Feedback should also be given to patients, preferably in person or through telephone calls, and perhaps supplemented with written feedback (McDowell et al., 1986). The more ambitious the behavior change goal (e.g., stopping smoking), though, the more frequent the follow-up contact needs to be along the way to success (Sennott-Miller & Kligman, 1992).

Health Education Materials

Success with achieving health goals is likely to be enhanced through effective health education materials. A 1996 Kaiser Permanente survey found that many patients were dissatisfied with the current state of health education. As one physician noted, "Who can blame them? In most cases,

patient education consists of an out-of-date brochure, pulled from the back of a drawer, dusted off and handed to the patient following diagnosis" (Hutchinson, 1998, p. 13).

Even good patient education materials tend to be limited in effectiveness in that they are written for those who need them the least: "well-educated, middle-class, middle-aged, non-minority populations who are highly motivated" (Baker & Wilson, 1996, p. 124). Moreover, patient education materials tend to be disseminated without explanation (Cherry et al., 1995); if they are distributed directly by health professionals with an accompanying explanation on the importance of the materials and how to use them, they are more likely to be helpful to recipients (Barlow et al., 1996).

Another study reported that patients do not usually help themselves to educational pamphlets but prefer to receive them directly from a health professional. At some of the 18 family medicine practices observed in one study, hundreds of different educational handouts were available. The researchers concluded, however, that the best way to distribute patient education materials was for health professionals to choose a small number of documents that were well suited to their educational style, their patient profile, and the perceived informational needs of patients (McVea et al., 2000). Materials need to be examined for accuracy and clarity, and staff need to be on the lookout for up-to-date and improved resource materials.

Put Prevention Into Practice

Put Prevention Into Practice (PPIP) was developed by the U.S. Public Health Service's Office of Disease Prevention and Health Promotion in order to improve the delivery of clinical preventive services on a national level. PPIP clinical sites in the community are designated to provide annual health risk assessments to patients and to target risk reduction and health promotion through screening, examination, immunization, counseling, and education (Melnikow et al., 2000). In Texas, primary care sites throughout the state were offered support for implementing prevention services through consultation, protocols, and grants provided by the state health department (Haber, 2002a).

If health professionals are interested in assessing their readiness for incorporating prevention strategies into a clinical setting as well as developing a protocol and evaluating its impact, PPIP offers a manual: *A Step-by-Step Guide to Delivering Clinical Preventive Services: A Systems Approach*. It can be downloaded from the Agency for Healthcare Research and Quality (AHRQ) Web site (http://www.ahrq.gov); obtained through the AHRQ Publications Clearinghouse (800-358-9295); or

requested through e-mail (ahrqpubs@ahrq.gov). For more information about PPIP in general, e-mail PPIP@ahrq.gov.

Referrals to Community Health Education Programs

Assisting older clients with promoting health and preventing disease is an important component of the health professional–client relationship, but the amount of time available for this endeavor is typically severely limited. It is therefore important for the health professional to learn more about the health resources and programs available in the community and to make appropriate referrals.

The past decade has witnessed a proliferation of low-cost or free educational opportunities for older adults within the community. With the exception of isolated rural areas, a considerable number of health education opportunities for older persons are available.

These opportunities may include programs sponsored by the local senior center, YMCA/YWCA, hospital, religious institution, AARP chapter, health professional association, health advocacy group, mutual help group, university or community college, Elderhostel program, shopping center mall-walker program, or corporate retiree wellness program—to name a few possibilities (see chapter 12, Community Health).

Once having identified a substantial number of community health organizations or resources that are available to clients, additional considerations come into play. Cost, transportation access, and instructor competency with older persons are obviously important factors to consider before referring clients to community health education programs. Besides being knowledgeable about community health services and programs, it is important to get feedback on the effectiveness of these programs before referring clients to them. As noted previously, feedback from clients can be systematically elicited and made available to other clients by computer access or through a card catalog.

Community health programs are likely to be more successful if based on andragogical principles. *Andragogy* is the art and science of teaching adults based on a set of assumptions about learning that are different from traditional pedagogy. These assumptions, which have received only limited empirical examination (Brookfield, 1990), are twofold:

1. *Active involvement.* Active involvement on the part of older persons is preferable to the more traditional, passive student role. Older adults learn best when actively participating in an experience, such as helping to set goals, individualizing instruction to meet their needs, and helping to assess their own progress.

2. *Peer interaction*. Andragogy is fostered when age peers provide support, information, and assistance to one another. Community health education programs that allow for peer interaction and support may be more effective than those that rely primarily on didactic educational techniques.

Personality Characteristics of a Health Professional "Collaborator"

Certain personality characteristics, such as patience, tolerance, and a positive attitude, enhance the health professional's chances for collaborating successfully on a health goal (Sarafino, 1990). Encouraging health change requires *patience*: client progress tends to be slow, incremental, and characterized by lapses or reversals. Health professionals are unrealistic if they expect to achieve health goals with their clients in the same time period required for the reversal of most acute care problems.

Tolerant health professionals are nonjudgmental about the poor health habits of clients. These habits no more should be viewed as character weaknesses than a physical illness would be. If a client senses self-righteous judgment on the part of a health professional, even though it may not be verbally expressed, any mutual health endeavor is doomed to fail.

Health professionals with a *positive attitude* begin any health endeavor by identifying the personal assets of clients that *will* facilitate a change in health behavior. If, for instance, a client has a receptive attitude toward health, the health professional should acknowledge it. It is also important to acknowledge past successes by the client in a health area; positive personality traits, such as persistence or a sense of humor; the support of a spouse or friend; or the educational and financial resources that will help the client access community health resources or education programs.

COMMUNICATION

Effective collaboration between health professionals and clients is dependent on good communication. Open-ended inquiries and empathic listening skills are important aids to the health professional, increasing the likelihood of good communication with clients. Taking the time to explore the values and beliefs of clients can help the professional overcome communication barriers erected by differences in educational attainment, cultural beliefs, socioeconomic status, religion, gender, and age.

Given the limited amount of time within which most clinicians and patients operate, however, it is not surprising that physicians who are similar to their patients are viewed as better communicators and more participatory. Specifically, physicians get rated highest on participatory decision-making style when they and their patients are of the same gender and race (Cooper-Patrick et al., 1999).

Web sites have been created to help patients search for physicians of a particular race (http://www.findablackdoctor.com), religion (Christian Medical and Dental Associations, http://www.cmda.org), or sexual sensitivity (Gay and Lesbian Medical Association, http://www.glima.org).

Patients and physicians participate for free, though physicians can pay for expanded listings (Adams, 2006). There is limited research on the effectiveness of patient–physician similarity, though one study reported that African American patients who visit physicians of the same race rate their medical visits as more satisfying and participatory (Cooper et al., 2003).

Regardless of patient and physician similarity, there may be fundamental communication issues that need to be addressed. One small study in Albuquerque, New Mexico, brought family medicine residents and older patients together to examine provider–client discrepancies in medical encounters (Glassheim, 1992). The elders said they wanted health providers to listen more. The providers, in contrast, said they wanted their older patients to focus, to tell them what they want.

Communication takes time. Clients need to focus their questions more precisely to help busy health professionals be more effective. But busy health professionals need to be part of a team effort, and some member of the team (e.g., an office staff member, peer support group member, or trained paraprofessional or volunteer) needs to allow the client adequate time to communicate.

Time and caring work together: "The quality of the relationship also may be enhanced through the use of appropriate touch and the acceptance of patient reminiscences during the medical exchange" (McCormick & Inui, 1992, p. 222). Health professionals who are unable to communicate warmth and are unwilling to spend time with older clients put themselves at a disadvantage for motivating and encouraging behavior change (Street et al., 2005).

One study reported that attire matters. Four hundred patients were shown photographs of physicians wearing either professional attire with white coat, surgical scrubs, business attire, or casual dress. Seventy-six percent favored the physicians dressed in white coats and stated they would more likely trust those people, share sensitive information with them, and return for follow-up (Rehman et al., 2005).

To help an older patient communicate more effectively with a physician, the National Institute on Aging (NIA) disseminates a 30-page soft-covered book

entitled *Talking With Your Doctor: A Guide for Older People*. The book provides many tips for good communication and focuses on getting ready for your appointment, how to share information with your doctor, and how to get information from your doctor and other health professionals. To get free copies for a medical office, or for an older patient, call the NIA Information Center (800-222-2225) or order via e-mail (niaic@jbs1.com) and ask for NIH (National Institute of Health) Publication No. 94-3452.

Communication Skills

A health professional's message can be viewed as a therapeutic agent, comparable to a prescription of medicine or a surgical intervention. The positive expectations and good communication skills of a person considered to be trustworthy, expert, and powerful should not be underestimated as a therapeutic tool.

Conversely, poor communication skills by health providers are significantly more likely to be associated with patient lawsuits. In one astonishing study, 40 s of speaking could distinguish between surgeons with and without prior malpractice claims (Ambady et al., 2002). Surgeons with histories of malpractice claims were significantly more likely to demonstrate dominant and hostile voice tones, while those without such histories were more likely to demonstrate warmth, interest, concern, and sincerity.

The following questions are designed to help assess communication skills. About half were stimulated by a presentation made by Kate Lorig, RN, health educator at Stanford, or borrowed from an article by McCormick and Inui (1992). The rest are based on my personal experience with health education in the community.

Interpersonal Effectiveness

1. Do you make eye-to-eye contact?
2. Do you have a caring but not condescending tone of voice?
3. Are you and your clients comfortable with touching? If so, will this enhance rapport?
4. Do you engage in reciprocity of information by self-disclosing when useful?
5. Do you let your clients talk enough, or provide someone who will listen, or refer them to a support group that will listen?
6. Are you well informed about clients' religious or cultural restrictions regarding privacy, touching, speaking to a woman alone, or engagement in other types of intimate interactions?

7. Cross-cultural issues are not just racial, religious, or ethnic. We all interpret our health and diseases uniquely (i.e., we try to make sense of things within our belief systems). Do you try to be sensitive to your clients' unique cultural interpretations?
8. Are you able to resist countering clients' beliefs that are not harmful and instead just add to them (e.g., "Yes, astrology [or, acknowledge to yourself, preordained circumstances] may contribute to your pain, but pain is also caused by other factors")? Do you give clients power by adding to their data banks, rather than contradicting them?
9. Is it possible to gain insight into your clients' lifestyles by making home visits or getting feedback from someone who has?

Informational Processing

1. Do you know if your clients understand what you said; can they paraphrase it back to you?
2. Do you know what your clients mean; can you paraphrase it back to them?
3. Do you supplement your verbal instructions with clear, unambiguous written instructions?
4. Do you ask your clients to write down their questions between visits and bring the questions with them on their next visit?
5. Do you encourage your clients to bring along a helpful family member or friend to help with communication? Do you talk directly to your clients and not primarily to their support people?
6. If appropriate, have you screened for cognitive impairment?
7. Are you aware of the impact that medication side effects may have on your clients? Do these side effects interfere with their ability to communicate?
8. Do your clients have interest in the science (e.g., the anatomy and physiology) of their medical problems, or are they just interested in practical skills and knowledge? Do you provide data in a manner that is preferred and easily understood?

Social and Behavioral Support

1. Do you motivate through positive incentives, rather than rely exclusively on fear tactics, like warning your clients about morbidity or mortality risks?
2. Do you rely exclusively on talk to change client behaviors, or do you combine talk with other strategies, like behavioral management techniques?

3. Do you involve the clients' social support systems, such as family and friends, in the plan to change or maintain health behaviors?
4. Do you have an adequate reminder system to provide timely follow-up support for clients attempting to make health behavior changes?
5. Do you make appropriate referrals to community health programs or services when necessary, and equally important, do you seek feedback from clients for the benefit of other clients and to help decide about future referrals?
6. When making referrals, do you consider programs and resources that are offered at culturally relevant and supportive sites, such as neighborhood churches?
7. Do you ascertain client goals, see the underlying importance of these goals even if seemingly grandiose or trivial, and help your client redefine them to make them more achievable?
8. If you refer clients to support groups with lay leaders, do you know if they are receiving appropriate information in these groups? Do the groups invite professional expertise, and are you interested in contributing health education to these groups?

CRUISING THE NET

Face-to-face communication with health professionals has become increasingly limited in our health care system. Consumers therefore rely on other sources of health information. A 1998 Roper survey (Kleyman, 1998) of Americans found that television is their primary source of health information (40%), followed closely by physicians (36%) and magazines and journals (35%).

It is not surprising that television has been the primary source of health information. A survey of 122 local news stations in the top 50 markets reported that 40% of the television broadcasts contained at least one segment on health (Pribble et al., 2006). The researchers also noted, however, that an alarming number of stories included factually incorrect information, and sometimes dangerous advice was offered as well. Limited time may have been responsible for some of the distortions aired on television—a problem shared by newspaper coverage, with its limited space.

The fastest growing source of health information, however, is the Internet. A survey of patients in one primary care practice in Providence, Rhode Island, reported that 54% of respondents were already seeking health and medical information on the Internet. The topics most often accessed are nutrition and diet (68%), medical therapy and medications (58%), and alternative medicine (41%; "Study Looks," 2002). According

to a 2005 national survey conducted by the Pew Internet and American Life Project, 80% of American Internet users have sought information on health topics.

The fastest growing segment using the Internet is the age 50 plus category. Merely 7% of online users were aged 50 plus in 1996, but that increased to 25% in 1997 (Kleyman, 1998). Much of this growth in computer usage is taking place among the boomers, the next generation of older adults. A national Kaiser Family Foundation survey in 2005 reported that 31% of persons age 65 plus have ever gone online, but 70% of the 50- to 64-year-olds have done so. The Internet is fifth on a list of media sources of health information for seniors, compared to first among 50- to 64-year-olds.

As stated by former vice president Al Gore, the wealth of online consumer health information is "a mixed blessing because finding high-quality information that is accurate, timely, relevant and unbiased is a daunting challenge to even the most experienced Web surfer" (Schwartz, 1997). It is important to know the credentials of contributors to Web sites, whether the contributor has a financial stake in the products or information discussed, and if there are other sources of information with competing points of view.

A survey of 160 randomly selected health information sites found that more than half might have contained biased information (Laurence, 1997). Bias was not defined as accuracy, but as whether the site's owner stood to gain financially from the products or services mentioned. Accuracy, however, may also be problematic. Ten of 19 Web sites on Lyme disease had no inaccurate information, but the other 9 sites contained inaccurate information (Cooper & Feder, 2004).

Other cautions with using the Internet are lack of privacy, inefficiency (a search using the key word "senior" brought up 57,600 sites and "senior centers" turned up 275,992 sites), and high traffic causing delays ("A World of Information," 1998).

A review of the privacy policies of the 21 most trafficked health sites on the Internet concluded that few sites followed their own privacy policies. Most sites shared the personal health information that they collected from visitors, without their knowledge or permission ("Personal Data on Web Sites," 2000).

A Case Study in Web Deception: DrKoop.com

During his 8 years as U.S. surgeon general (1981–1989), Dr. C. Everett Koop became one of the most trusted and recognizable public figures on the topic of public health. He was best known for leading campaigns to deter cigarette smoking and to raise AIDS awareness.

In June 1999, a decade after leaving office, Dr. Koop cashed in on his fame and reputation and launched an online health information Web site. The initial public offering of DrKoop.com sold 9 million shares and raised close to $90 million. A bull market for e-health stocks at the time resulted in a start-up value of more than $500 million dollars for this Web site. By August 1999, it was the most visited health Web site, with about 3.5 million users.

It was downhill from there, unfortunately, due to a series of ethical lapses. Millions of dollars were made by Dr. Koop and his investment partners when they sold shares of their stock soon after the initial public offering, and in direct violation of securities law (Biesada, 2000). Nor did visitors to the site know that 14 hospitals that were described on the site as "the most innovative and advanced health care institutions in the country" had actually paid a $40,000 fee to be included on this list (Noble, 1999). Repeated examples of the site's inability to distinguish between advertising and health education continued to surface.

By the time I accessed the site in May 2002, questionable dietary supplement formulas were being peddled by "the Doctor you KNOW you can trust," and free psychic readings were being promoted. A few months later, DrKoop.com filed for bankruptcy ("Dr. Koop to Cease Operation," 2002), and in July 2002, its assets were sold for a paltry $186,000 to a company that sells discount vitamins. At one time, DrKoop.com had been valued at $1 billion.

DrKoop.com was not alone. Medscape Inc., worth $3 billion in February 2000, was sold to WebMD Corp. for $10 million in December 2001. WebMD Corp., in turn, worth $20 billion in May 1999, was down in value to $1.4 billion in August 2002. Most online consumer health information companies have either vanished or have become mere shadows of their former selves (Chin, 2002b).

The problem for companies, and the appeal to consumers, is that most online health information is available free. Internet users seeking health information went from 52 million in 2000 to 73 million in 2001 (Chin, 2002b). The growth rate is even more impressive when you consider that the number of people going online for health information in 1994 was close to zero. The growth rate is explained not only by the increase in computer familiarity, but also by the fact that 82% find what they are looking for most of the time or always (Chin, 2002b).

Web Sites

Potential problems aside, more and more health consumers are finding the Internet to be an incredibly useful tool. Free online health information

is available in all forms, including continuing education, consumer education, journal articles, discussion groups, magazine and newspaper articles, book reviews, chat rooms, Web reviews, databases, and so forth. There were 50,000 Web sites devoted to health in 2000 (Gearon, 2000). In 2007, if you googled *health,* there were 2.5 million sites.

I have attempted to categorize below a few of the more interesting Web addresses that I have accessed. Generally speaking, government sites (.gov), nonprofit groups (.org), and educational institutions (.edu) are more trustworthy than commercial sites (.com). Two other cautions: (a) These sites are very interesting, and you might find yourself lost in cyberspace for hours; and (b) on one site I read about a condition labeled *cyberchondria*, referring to people who *increase* their anxiety about their health by going online.

Government

Healthfinder (http://www.healthfinder.gov): Considered by many to be the premiere site for health information, including publications, clearinghouses, databases, Web sites, self-help or support groups, and so on.

National Institutes of Health (http://www.nih.gov): Contains links to more than 100 government databases and consumer health publications.

Medline Plus (http://www.medlineplus.gov): A database with references to 4,000 medical journals, a medical encyclopedia and dictionary, a drug reference guide, and hundreds of links to reputable health organizations.

U.S. Food and Drug Administration (http://www.fda.gov): Provides the latest information on new drugs and recently identified risks.

Office of Disease Prevention and Health Promotion (http://odphp.osophs.dhhs.gov): Provides fact sheets and links to publications.

Administration on Aging (http://aoa.dhhs.gov): The aging network.

Agency for Healthcare Research and Quality (http://www.ahcpr.gov): Provides information on best treatments for specific health problems.

ClinicalTrials.gov (http://clinicaltrials.gov): Provides details on 5,200 mostly government-funded clinical trials.

Wellness

DrWeil.com (http://www.drweil.com): Dr. Weil is Director of Integrative Medicine at the University of Arizona; this site is broad in scope but focuses on dietary supplements.

WholeHealthMD.com (http://www.wholehealthmd.com), HealthWorld Online (http://www.healthy.net), and HealthTouch Online (http://

www.healthtouch.com): All three sites focus on complementary and alternative medicine.

Wellness Councils of America (http://www.welcoa.org): Focuses on worksite wellness programs and products.

National Wellness Institute (http://www.nationalwellness.org): Offers conferences, programs, and wellness assessment tools.

National Center for Complementary and Alternative Medicine (http://nccam.nih.gov): Provides information on complementary and alternative medicine.

Quackwatch (http://www.quackwatch.org): Identifies dubious alternative health care claims.

Professional Organizations

National Association of Area Agencies on Aging (http://www.n4a.org)

American Cancer Society (http://www.cancer.org)

American Heart Association (http://www.americanheart.org)

American Diabetes Association (http://www.diabetes.org)

American Lung Association (http://www.lungusa.org)

National Osteoporosis Foundation (http://www.nof.org)

Gerontological Society of America (http://www.geron.org): Focuses on research.

Association for Gerontology in Higher Education (http://www.aghe.org): Focuses on education.

National Council on the Aging (http://www.ncoa.org) and the American Society on Aging (http://www.asa.org): Both sponsor many community service and educational programs, including a joint annual conference.

National Hospice Foundation (http://www.hospiceinfo.org): Will help you find a hospice near you and draft a living will.

AgeSource Worldwide (http://research.aarp.org/general/geo): Provided by the AARP Research Information Center as a clearinghouse of health-related materials.

Center for the Advancement of Health (http://www.cfah.org): Examines behaviors, biology, emotions, and social context to promote practical health care solutions.

Federal Interagency Forum on Aging-Related Statistics (http://www.agingstats.gov/default.htm): A collaborative effort among 12 federal agencies that produce or use statistics on aging.

Health and Retirement Study (http://hrsonline.isr.umich.edu/index.html): Surveys more than 22,000 Americans aged 50 and older every 2 years on physical and mental health and related topics; data products available without cost.

American Federation for Aging Research (http://www.infoaging.org): Focuses on disease, biology, and healthy aging.
National Academy on an Aging Society (http://www.agingsociety.org): Provides data profiles and issue briefs about older Americans, with emphasis on public policy research on population aging.
Centers for Disease Control and Prevention (http://www.cdc.gov/nchs/agingact.htm): Focuses on trends in health and aging.

Specific Health Content Areas

National Family Caregivers Association (http://www.nfcacares.org)
American Alliance for Health, Physical Education, Recreation, and Dance (http://www.aahperd.org)
American Council on Exercise (http://www.acefitness.org)
Active.com (http://www.active.com): Event locator for individual and team sports and park and community activities.
American Dietetic Association (http://www.eatright.org): Offers daily nutrition tips and reliable answers to nutrition questions, including where to find a dietitian.
Wheat Foods Council (http://www.wheatfoods.org): Everything you want to know about grains.
Center for Science in the Public Interest (http://www.cspinet.org/nah): Publisher of *Nutrition Action Healthletter*.
Tufts University Health and Nutrition Letter (http://www.healthletter.tufts.edu)
Quitnet (http://www.quitnet.org): A quit-smoking site in association with Boston University and a private company.
National Institute on Alcohol Abuse and Alcoholism (http://www.niaaa.nih.gov)
National Institute on Drug Abuse (http://www.nida.nih.gov)
Substance Abuse and Mental Health Services Administration (http://www.samhsa.gov)
Association for Death Education and Counseling (http://www.adec.org)

Older Consumers

AARP (http://www.aarp.org): Provides health news and information on a wide range of activities and links to other sites. The Web site http://www.aarp.org/internetresources provides a directory of 800 plus Internet sites by and for older adults: caregiving, health, aging organizations, Medicare, community services, and so on.
Seniornet (http://www.seniornet.org): Teaches adults aged 50 and older to use computers and links to 600 discussion groups.

ThirdAge (http://www.thirdage.com): Provides tips on a wide variety of topics, from retirement savings to clothing colors that flatter gray hair.

SeniorJournal.com (http://www.seniorjournal.com): Daily news stories on topics of interest to older adults.

Assisted Living Store (http://www.assistedlivingstore.com): Devices for assisted living.

Seniors-Site.com (http://www.seniors-site.com/funstuff): Jokes—some off-color, some just off, and some are actually funny.

WebMD.com (http://www.webmd.com): Wide range of health and medical topics.

Elderhostel (http://www.elderhostel.org): More than 800 educational programs sponsored throughout the United States and 90 countries abroad.

University of California, Berkeley Wellness Letter (http://www.berkeleywellness.com)

Novartis Foundation for Gerontology (http://www.healthandage.com): Provides interesting articles and information on a wide range of health and medical topics.

Mayo Clinic (http://www.mayohealth.org): Covers a wide range of health topics.

Gray Panthers (http://www.graypanthers.org): Intergenerational advocacy group on a wide range of issues.

Postscript for the 3rd edition: It was a tough call, but I decided to include Web site addresses again for this edition of the book. Web site addresses come and go, and sometimes they transform into topics you do not expect or want. For example, as the second edition of this book was going to press, a student of mine took the initiative to review my Web site addresses one last time. One address, which included the word sweat, *reported on exercise topics. Or, at least it did at one time. When the student checked it out again, however, it had transformed into a particularly malicious pornography site.*

I, needless to say, was quite grateful for that student's initiative and managed (without too much difficulty) to get the editor to make a last-minute change in the second edition. I should note, though, that the student was unavailable for a last-minute review of this edition.

Postscript for the 4th edition: Again, no student-initiated fact checking was available for this section. However, the Web sites included in this 4th edition appear to represent stable organizations, as evidenced by the fact that 45 sites remained the same (96%) over a 3-year period, and only 2 sites were no longer operative—nor were they transformed into anything exotic. Several additional Web sites have been added to this edition as well as electronic newsletters and so on, which follow.

Electronic Newsletters

Human Values in Aging

Edited by Rick Moody, this monthly e-newsletter contains items of interest about humanistic gerontology, including late-life creativity, spirituality, the humanities, arts and aging, and lifelong learning. For a sample copy or free subscription, e-mail hrmoody@yahoo.com.

Positive Aging

Psychologists Ken and Mary Gergen edit this electronic newsletter devoted to positive approaches to aging. This newsletter not only offers a uniquely positive perspective, but summarizes a wide variety of research that is useful to practitioners. For a free subscription, e-mail gv4@psu.edu.

Soul of Bioethics

Edited by Rick Moody, this monthly e-newsletter focuses on ethics and aging, including long-term care, end-of-life decisions, and holistic dimensions of caregiving. For a sample copy or free subscription, e-mail hrmoody@yahoo.com.

Aging Opportunities News

A monthly e-newsletter for academic gerontologists and geriatricians seeking news on the latest research, education, workforce training, and demonstration outcomes in the aging field.

News From the Geriatric Mental Health Foundation

The foundation is dedicated to raising awareness of psychiatric and mental health disorders affecting the elderly and promoting healthy aging strategies. For a free subscription, e-mail web@GMHFonline.org.

Miscellaneous Communications

Agency for Healthcare Research and Quality

Updated prevention recommendations from the U.S. Preventive Services Task Force (see chapter 3) for the years 2001–2005 were compiled into two loose-leaf binders as well as a CD and made available for purchase for $30. Topics include medical screenings and behavior change counseling. E-mail ahrqpubs@ahrq.gov, or call the AHRQ Publications

Clearinghouse at 800-358-9295. It can also be accessed free at http://www.ahrq.gov/clinic/pocketgd.htm.

Ageline Database

This database contains abstracts of social gerontology and aging-related articles, books, and reports. Free access is available through http://research.aarp.org/ageline/home.html.

Current Awareness in Aging Research

Contains e-clippings on aging in the United States and around the world. Free access is available on a daily basis; contact jsolock@ssc.wisc.edu.

Health and Aging

This is a 2004 selected annotated bibliography in *AGHE Brief Bibliography: A Selected Annotated Bibliography for Gerontology Instruction* (Haber, 2004). The CD-ROM is available from the Association for Gerontology in Higher Education, 1030 15th Street, NW, #240, Washington, DC 20005.

SELECTED COMMUNICATION ISSUES

Cross-Cultural Communication

Some managed care organizations are recognizing the importance of helping health professionals communicate more effectively with minority patients. In Southern California, for instance, Kaiser Permanente has a medical anthropologist on staff to help health professionals work more successfully with minority patients and to develop special programs for minority members.

Cross-cultural communication, however, is not simply an issue of race or nationality. Many cultural differences that emerge between health professionals and clients are based on differences in age, gender, religion, ethnicity, socioeconomic class, and education. Every health professional must deal with these types of cross-cultural issues. Open-ended questions can help the health professional understand the client's point of view: How would you describe your health problem? Why do you think this problem occurred? Do you have sources of relief that I do not know about? Apart from me, who do you think can help you get better? Has anyone made

recommendations to you? Did you try any of them? (For more cross-cultural questions, organized by content area, see Haber, 2005a.)

For those interested in the topic of racial and cultural biases in the health care setting and the improvement of communication skills between health professionals and clients, the American Academy of Family Physicians provides a CD (#724) or a video (#723) entitled *Quality Care for Diverse Populations* (call 800-274-2237).

End-of-Life Communication

Effective communication is important up to the end of life. Some health care professionals believe that discussing end-of-life care issues upsets their clients. One study, though, reported that few older adults are upset by such a discussion (Finucane, 1988). It is important that a client's views be clearly communicated and recorded before an unexpected crisis develops. Clear thinking is more likely when a patient is relatively healthy and not suffering from anxiety.

Unfortunately, this type of communication is the exception rather than the rule. More than 90% of older adults in one study, for instance, did not clearly understand cardiopulmonary resuscitation (CPR; Shmerling et al., 1988). Eighty-seven percent of older respondents thought CPR should be discussed routinely with health professionals, but only 3% had engaged in such discussions with them.

Another common example of a serious failure to communicate is the fact that most older adults understand the idea of a living will, but the vast majority have neither signed one nor discussed the issue with a health professional. Geriatrician Joanne Lynne, director of George Washington University's Center to Improve Care of the Dying, reported on the importance of clear communication between health professionals and clients. She examined 569 advance directives, but only 22 of them were specific and clear enough to help physicians and family members decide what to do (Lynne, 1997).

Almost 1,200 seriously ill Medicare beneficiaries were interviewed at five U.S. teaching hospitals. Forty percent of the study patients requested a preference for treatment to focus on extending life, whereas 60% expressed a preference for comfort care. Eighty-six percent of the patients who wanted aggressive treatment reported that their care was consistent with their preferences; however, only 41% of those who preferred comfort care reported that their care was consistent with their preferences (Teno et al., 2002).

In October 1997, Oregon legalized physician-assisted suicide through the Death with Dignity Act. As a consequence, patients who requested assistance with suicide spent more time communicating about the issue

through discussions with nurses, social workers, and physicians. According to participating nurses and social workers, the primary reason a patient makes such a request is to be able to control the circumstances of death if they so choose, not to end their life because they are depressed, lack social support, or fear being a financial drain on family members (Ganzini et al., 2002). Even among the terminally ill persons who requested a prescription for lethal medication, less than half actually ended up taking their lives (Hedberg et al., 2002). Access to professional communication was apparently sufficient to meet their needs.

Communicating to Client Companions

One study of more than 1,000 patients visiting an academic general internal medicine practice over a 3-month period reported that one-third brought a companion with them to the doctor's office, and 16% had the companion come into the exam room (Schilling et al., 2002). A majority of physicians, and an even higher percentage of patients, found the arrangement to be helpful. The two major drawbacks were patient confidentiality and whether patients would reveal all they needed to when someone close to them was in the room.

Older men are less likely than women to bring a companion when visiting a doctor, but if they do bring a companion to the clinic, they are more likely to bring that companion into the examining room to help them communicate with the doctor. Older women tend to bring companions primarily for transportation or companionship, visiting with the doctor alone (Beisecker, 1990).

A client's companion can provide a vital service to both the health professional and the client, serving as an independent monitor of a person's condition and providing helpful feedback on client collaboration with treatment regimens. A companion can make sure that questions are asked and answers understood. On the other hand, health professionals can be seduced into communicating with companions and ignoring their clients. Problems that may stem from coalition formation (between two of the three participants) have not been examined as yet.

Communication Barriers Between Health Professionals and Older Clients

The satisfaction of older clients is positively associated with the length of their visits with physicians and with physicians' support of topics initiated by the clients (Greene, 1991). Using audiotapes and other tools, however, researchers have found that doctors seem reluctant to discuss psychosocial and prevention issues with older clients and are less

receptive to these issues when raised by older clients than when raised by younger ones (Callahan et al., 2000; Greene, 1991; Greene et al., 1987; Kennelly, 2001).

Another study reported that older clients are less likely than younger clients to agree with their physicians on the main goals of their visit (e.g., to discuss medication side effects, physical symptoms, etc.) and the topics that ought to be discussed (Adelman et al., 1989). An exception was with personal habits (e.g., diet, exercise, smoking, drinking). These topics, though, were infrequently discussed with physicians, regardless of a client's age [Greene et al., 1987].

A study of older diabetic clients reported that 42% were unable to discuss with their physicians the symptoms that concerned them (Rost, 1990). Physicians were much less responsive to topics raised by their older clients than to those raised by themselves (Adelman et al., 1989; Greene, 1991). Many of the recognized verbal and nonverbal approaches to good communication are not being practiced between primary care physicians and their patients (Beck et al., 2002).

Physicians give older clients considerably less cardiac risk reduction advice (regarding diet, exercise, weight control, smoking, stress management, and work) than they give younger clients (Young & Kahana, 1989). Thus older clients are systematically denied the opportunity to lessen their risk of future heart problems by adopting the behavioral advice of their physicians.

How well do nurses communicate with older patients? A meta-analysis of 34 studies reported that more patients were satisfied with care from a nurse practitioner than they were with care from a physician. Some of the studies reported that the nurse practitioner gave more time, information, and advice on self-care and management of disease (Horrocks et al., 2002). The key difference between nurse practitioners and physicians—the amount of time spent with patients—may be diminished in the future if nurse practitioners find themselves with less time to spend with patients.

A survey of 552 pharmacists in Indiana reported that 88% were willing to participate in continuing education courses to learn more about health education and promotion. Despite this willingness to learn, though, the pharmacists reported persistent barriers to health education in the pharmacy setting due to lack of time, reimbursement, privacy, training, and management support (Kotecki et al., 2000).

Jargon

A study conducted more than 30 years ago on lower-class clients' comprehension of 13 terms used by their physicians found, not surprisingly, that each term was understood by only one-third of the clients (McKinlay,

1975). What *was* surprising is that physicians expected these clients to have even *less* comprehension than was reported.

A scholarly effort a few years later reported that the problem persisted. The reasons physicians continued to use incomprehensible language may have been habit; the belief that accurate comprehension of a medical problem might increase the client's stress level; the fact that hard-to-understand terms are likely to be conversation stoppers, making more time available for seeing other clients; the belief that the use of big words elevates the status and authority of the practitioner; and the belief that lack of comprehension may make errors harder to detect and thus litigation less likely (Sarafino, 1990).

Clients, however, prefer health professionals who are willing to listen, communicate clearly, and show warmth and concern. When these expectations are met, clients offer more significant diagnostic details, keep more appointments, and litigate less (Sarafino, 1990).

Four Common Reasons for Health Professionals Not Communicating About Health With Older Clients

1. *I do not think most of my clients want to communicate about health.*
   This statement may be true, given the dry way in which health education is often presented. But many clients become more enthusiastic about health when they are encouraged to identify benefits that are meaningful to them: benefits like more energy, less arthritic pain, better sleep, or more strength. Clients also appreciate help with identifying the best pathway for accomplishing the health goal of their choice.
2. *I am not skilled in doing it.*
   With a few exceptions in nursing (e.g., Wold & Williams, 1996), medicine (e.g., Haber & Looney, 2000), and allied health (e.g., Haber et al., 1997), health science students do not receive adequate knowledge, skills, and especially practice in providing health promotion and education to older clients during the course of their student training. However, given the wealth of continuing health education opportunities for health professionals that are available online and in the community, the major barrier to becoming more skilled at practicing health promotion and education with clients is insufficient motivation.
3. *I do not have the time for it.*
   Limited time is a major concern that permeates the managed care environment. This barrier, though, can be circumvented in several ways. Many ideas and techniques can be presented

effectively to clients in a brief period of time, office staff and health educators can assist with providing health education, and informed referrals can be made to appropriate and effective community health programs and support groups.

4. *I am not paid to do it.*
   Health professionals rarely benefit monetarily from offering health promotion and education to clients. But they do receive the gratitude of clients who stop smoking, start exercising, lose weight, or reduce stress. And this, in turn, provides most health professionals with tremendous mental health benefits, not to mention more client referrals from the family and friendship networks of satisfied clients.

QUESTIONS FOR DISCUSSION

1. Think about an occupation that you wish was more health oriented (like a nursing home administrator, a physician, a minister, etc.). How could you transform that job to generate more health-promoting activities with older adults?
2. Cruise the Web sites listed in this chapter, and select one that relates to healthy aging that you think can be useful for you as a health practitioner. Print out a hard copy; state why you like it and how you can determine the accuracy and integrity of this source of information.
3. Three important personality characteristics of a *health* provider are mentioned in this chapter. Add a fourth. Why do you think this additional characteristic is important?
4. Describe an example of ageism that you witnessed in a health professional–client or teacher–student encounter. Why was it ageist?
5. The term *empowerment* can easily be viewed as a buzzword (thrown around a lot, signifying much but meaning little). Do you feel that way? Can you give an example of how you or someone you know became a more empowered student, teacher, or practitioner?
6. Suppose you encounter a 70-year-old client who prefers an authoritarian health provider. As a clinician, would you accept this person's attitude, or would you encourage more patient initiative? If you encourage more initiative, how would you go about it?
7. How familiar are you with the health-promoting resources in your community? Find one that you are unfamiliar with but believe may be important for older persons. Summarize it sufficiently to answer most questions that older adults might have about it.

8. Which communication skill listed in this chapter are you most in need of improving, and how might you go about improving it?
9. Review the Miscellaneous Communications section. Briefly describe one topic that you think would be an interesting addition to this section, and why.
10. A physician has hired you as a consultant and wants to know how she can enhance her reputation as a health promoter. Briefly note three ideas that would help her accomplish this goal.
11. When it comes to health, some people are too passive and others are overconfident about their knowledge and skills. Provide one tip on how to communicate effectively with the passive client and one tip with the overconfident client.
12. Examine the four major barriers preventing health professionals from engaging in client education. What is your opinion on how significant these barriers will be 10 years from now, and why?
13. When is the opportune time to discuss disease prevention and health promotion with older clients?
14. Examine one other topic in this chapter that you found interesting and has not been explored when answering the previous questions. Why did you find this interesting?

CHAPTER THREE

Clinical Preventive Services

MEDICAL SCREENINGS AND PROPHYLAXIS: CONSIDERABLE CONTROVERSY

For an earlier edition of this book I wrote the chapter on medical screenings with a lot more certainty about the reliability of its content. I began by stating a few of the obvious successes achieved by medical screenings and subsequent interventions. For example, I noted that because of the Pap smear test, cervical cancer mortality dropped substantially during the 1970s and 1980s. I also noted that partly due to the increased screening for, and treatment of, hypertension, the incidence of stroke and heart attack was significantly reduced.

I was not Pollyannaish about the topic, however. I reported that despite considerable support—and in some specific screening instances, universal acclaim—medical screenings were neither systematically nor uniformly implemented by clinicians. I noted that this behavior was due in part to clinicians and researchers failing to agree on the effectiveness of screenings and interventions, that is, the relative benefits versus the risks (medical, psychological, and financial) to individual patients.

I also noted that people with low income levels were at a disadvantage when it came to medical screenings because of greater time constraints with physicians and that persons with low education levels (including Medicare recipients) were less likely to discuss screening options and other health education matters with their physicians.

Obviously, none of this examination in the 1990s could predict the controversy over medical screenings and prophylaxis that emerged later. Beginning in 2001, there was an explosion of research findings and popular articles on the utility of medical screenings and interventions. Much

of the attention was on whether women should get mammograms or hormone replacement therapy. But there were also interesting questions raised about such topics as bone density, blood pressure, cholesterol, prostate cancer, the age at which screenings should begin and end, and whether we should be taking statins as an intervention for just about everything.

Underlying many of the issues raised about medical screenings and subsequent medical interventions were fundamental questions about the validity of the research that had been conducted. Before we tackle these questions, screening by screening, we need to lay some groundwork on what guides clinician decision making when it comes to medical screenings.

Guide to Clinical Preventive Services

More than 30 years ago, routine annual medical screenings were being replaced by periodic reviews based on the unique health risk factors of individual clients. There is some evidence to suggest, however, that even today, the public still believes in the undifferentiated approach of an annual physical examination and testing (Oboler et al., 2002). In one study, 65% of primary care physicians thought annual exams were necessary, and 55% believed they were recommended by national organizations (Prochazka et al., 2005). Health professionals, though, should be better informed about research findings on periodic screenings and the current recommendations.

In order to simplify and standardize this effort, the Canadian Task Force on the Periodic Health Examination initiated, in 1976, the first comprehensive effort to assess the effectiveness of a wide array of preventive services. They began by developing explicit criteria for assessing the quality of the evidence from published clinical research. Decision rules were then developed to guide clinicians.

In a similar effort that began in 1984, the U.S. Preventive Services Task Force (USPSTF, 1989) developed recommendations for clinicians on the basis of a comprehensive review of the evidence of clinical effectiveness. The conclusions were published in the *Guide to Clinical Preventive Services*, which catalogued 60 preventable diseases and conditions and provided guidelines to help health professionals select the primary, secondary, and tertiary preventive interventions that were most appropriate for their clients.

In 1996, the second edition of the *Guide* was published, and the number of topics was expanded to 70. More than 6,000 citations to the literature were provided to substantiate the prevention recommendations that were made in this edition. Beginning in 2001, in lieu of a one-volume

third edition, the Preventive Services Task Force issued updated guidelines on a piecemeal basis. Topics included a wide variety of screening and counseling recommendations, such as breast cancer screening, colorectal cancer screening, and counseling to promote physical activity.

These updates were compiled into a 2005 edition that consisted of a two-volume loose-leaf notebook and a CD for the period 2001–2005. This edition can be purchased for $30 by calling the AHRQ Publications Clearinghouse at 800-358-9295 or by sending an e-mail to ahrqpubs@ahrq.gov. It can also be accessed free at http://www.ahrq.gov/clinic/pocketgd.htm.

The recommendations in the *Guide* are based on a rating system that gives the most weight to research based on randomized controlled trials, followed by well-designed trials without randomization. The least weight is given to the opinions of respected authorities or expert committees, descriptive studies, and case reports.

Ratings of A (*intervention is strongly recommended*) and B (*intervention is recommended*) are based on good evidence to support the recommendation that a condition be in a periodic health examination; C (*no recommendation*) indicates insufficient evidence for making a recommendation for or against inclusion; and D and E (*not recommended*) are based on good evidence for exclusion.

A and B medical recommendations include such screenings as mammography, Pap smear, blood pressure, dental care, sigmoidoscopy, influenza and pneumococcal immunizations, vision, and hearing. Occasionally, recommendations are withdrawn. On October 15, 2002, the Task Force recommended *against* the use of combined estrogen and progestin therapy for postmenopausal women and reported insufficient evidence for or against the recommendation of estrogen therapy for women who have had hysterectomies.

In the second edition of this book I had included a table from the *Guide to Clinical Preventive Services* that listed medical screenings and their recommended frequencies for persons aged 65 and over. That table does not appear in this edition of the book (though my own updated version of these guidelines appears near the end of this chapter). This is due in part to the controversies that I alluded to earlier, which will be examined in more detail later. But it is also due to the fact that the screening tables are continually being outdated, and new guidelines are being released in installments by the U.S. Preventive Services Task Force.

In contrast to the evidence-based *Guide to Clinical Preventive Services* is the *Clinician's Handbook of Preventive Services*, published by the PPIP initiative of the federal government (USDHHS, 1998). The handbook is divided between children/adolescents and adults/older adults, and within each of these two sections are subsections on screenings, immunizations and prophylaxis, and counseling. This handbook is oriented more toward

clinicians than researchers and includes expert opinion in each prevention area, even when it is not evidence-based.

As a consequence, the handbook includes the recommendations of not only the evidence-based Preventive Services Task Force, but also many authorities like the Center for Disease Control and Prevention, the National Institutes of Health (NIH), the American Association of Family Practice, the American Cancer Society, the American Heart Association, and about 30 other health associations. These associations represent a wide range of recommendations. It is up to the clinician to choose the authority or evidence to guide his or her decision making.

In addition, the clinician handbook differs from the research-oriented *Guide* in that it provides assessment tools, technical information on how to perform each preventive service, a resource list for health providers, and a resource list for patients. Unfortunately, this handbook has not been updated since the 1998 second edition.

Accuracy, Reliability, and Effectiveness of Screening Tests

Accuracy refers to the sensitivity and specificity of screening tests. The *sensitivity* of a screening test is defined as the percentage of persons who actually had the disease and tested positive when screened. A test with poor sensitivity will miss persons with the condition and produce a large proportion of false-negative results. Persons who receive false-negative results will experience delays in treatment. *Specificity* refers to the percentage of persons without the condition and who correctly test negative when screened. A test with poor specificity will result in healthy persons being told that they have the disease and will produce a large proportion of false-positive results. Persons who receive false-positive results may experience expensive follow-up tests or unnecessary treatment that might not be completely safe.

Even if the test is sensitive and specific, it needs to be reliable and effective. *Reliability* refers to the ability of a test to obtain the same result when repeated. The reliability of some screenings, such as mammograms and Pap smears, has been increased due to the initiation of federal certification and annual state inspections of facilities. *Effectiveness* refers to whether the test is worth the cost, time, and bother, that is, whether there is a subsequent clinical intervention for a positive finding that can prevent or delay the disease.

BREAST CANCER

Breast cancer is the second leading cause of death from cancer among women (after lung cancer), accounting for 41,000 deaths in 2005. In

2005, an estimated 211,000 new cases of breast cancer were diagnosed in women (less than 1% of breast cancers are diagnosed in men). The median age at the time of breast cancer diagnosis is 61 years, with 57% of deaths from breast cancer occurring at age 65 or older.

The three screening tests for breast cancer are breast self-examination, clinical examination, and X-ray mammography. Breast self-exams have never been proven to reduce breast cancer deaths, but the American Cancer Society—along with many physicians—encourage their use on a regular basis. The encouragement is based on the belief that the procedure may be effective, and it is simple, safe, and free.

A study of 266,000 women in Shanghai factories, however, randomly assigned the participants to breast self-examination or no intervention. (Mammography is not widely available in China, so self-examination is the best option available.) The breast self-examinations were supervised and were done correctly and regularly. After 5 years, there was no difference in mortality between the two groups (D. Thomas et al., 2002). One meta-analysis reported that although larger tumors were more likely to be discovered through self-examination (Hill et al., 1988), the sensitivity of self-examination was quite low, and specificity remained uncertain (USPSTF, 1996).

An annual clinical breast examination for women older than 40 is recommended by the U.S. Preventive Services Task Force. A thorough clinical breast examination may be as effective as mammography, but the research evidence is thin in support of this possibility. It is also unclear whether clinical breast examinations provide added benefit when conducted in conjunction with mammography.

Regarding mammography, a consensus on its utility had grown tremendously over the past 2 decades. A national survey in 1985 reported that the majority of primary care physicians never recommended mammography screening to their female patients, but by 1988, 96% reported having done so (*Report on Medical Guidelines*, 1991). A national study of primary care physicians by the American Cancer Society in 1988 found that 80% of physicians performed more screenings than 5 years earlier.

The importance of physician recommendations for obtaining subsequent mammogram screenings was confirmed in a study of mostly older White women, two-thirds of whom had mammograms within the prior year (Brimer et al., 1991). Education and affordability might also have been factors in this study, but such was not the case for two samples of lower-income older African American women, of whom 60% complied with physicians when a mammogram was specifically recommended (Burack & Liang, 1987, 1989).

Compliance with a recommendation for a mammogram was also enhanced in 1992, when Medicare began offering partial coverage for

routine mammographies conducted every 2 years. In 1998, this benefit was increased to annually for Medicare-covered women. Another factor that contributed to adherence was the improved accuracy and reliability of mammogram screenings. In 1992, Congress approved the Mammography Quality Standards Act, which regulated equipment and personnel, including technologists and physicians, and required federal certification and annual state inspections of facilities.

The specificity of mammograms, however, still left much to be desired. Fifty percent of women who have had 10 mammograms over the past decade or two will have had one false-positive result that required further testing and unnecessary stress and expense. As many as 20% of these false alarms will lead to a breast biopsy, in which tissue is removed from the suspected tumor (Elmore et al., 1998).

The effectiveness of subsequent intervention for early detection was also a concern with some cancers, though this issue was not being addressed by many health professionals, nor was it generally known by the public over the past 2 decades. About 20% of the breast cancers being found, for example, were ductal carcinoma in situ (DCIS). There was evidence to suggest that indolent DCIS will not become invasive if left untreated; nonetheless, DCIS has been routinely treated with surgery, radiation, and chemotherapy (Napoli, 2001).

The *relatively* minor controversies that the public was aware of—such as when breast cancer screenings should begin and how often they should be conducted—did not serve as deterrents to screening compliance. This was especially true because of the substantial federal government publicity in favor of mammograms, the expanded Medicare coverage, and the widespread endorsement of the procedure by physicians. Not surprisingly, the percentage of women aged 50 and older who reported having had a mammogram in the previous 2 years went from 27% in 1987 to 61% in 1994 and 69% in 1998 (Kolata & Moss, 2002).

The 2001–2002 Mammogram Controversy

Widespread use of mammography as a screening tool began in the United States in the mid-1980s, after seven large studies involving 500,000 women seemingly demonstrated the effectiveness of this screening tool. The controversies surrounding mammography over the next decade and a half were the relatively minor ones of whether they should start at age 40 or 50 and whether they should be annual or biannual.

On one side of the debate were the National Cancer Institute and the American Cancer Society, which recommended regular mammograms beginning at age 40. On the other side was the NIH's consensus panel, which recommended that decisions about starting mammograms before

age 50 be left up to each woman and her physician. Taking a middle position, the American Medical Association's Council on Scientific Affairs recommended mammograms every 2 years between the ages of 40 and 49 and annually beginning at age 50.

In the 2002 issue of the *Annals of Internal Medicine*, two opposing points of view continued to be expressed. The Canadian National Breast Screening Study reported that after 11–16 years of follow-up, a randomized screening trial of mammography in women age 40–49 did *not* produce a reduction in breast cancer mortality (Miller et al., 2002). The U.S. Preventive Services Task Force, however, reviewed eight randomized controlled trials and still advised women to begin breast cancer screening at age 40 (Humphrey et al., 2002).

The age at which mammography screenings should be terminated also generated a little controversy but was not generally known by the public. The U.S. Preventive Services Task Force (1996) recommended the discontinuation of mammogram screenings at age 69 in asymptomatic women who had consistently normal results on previous examinations. Other authorities and researchers recommended no discontinuation of mammographies after age 69 (Kerlikowske et al., 1999; McCarthy et al., 2000; McPherson et al., 2002; USDHHS, 1996). One study reported that screening mammography is common in women aged 80 and older, but that 40% of the screened women were very unlikely to benefit due to limited life expectancy (Schonberg et al., 2004).

The disagreements in the field continued to generate little public notice in 2000, even when two Danish researchers published a report questioning the effectiveness of mammography at any age (Gotzsche & Olsen, 2000). Perhaps public awareness was muted because the majority of researchers criticized the methodology and conclusions of the Danish researchers. When the report was reissued in October 2001, however, and substantiated with additional statistical analysis (Olsen & Gotzsche, 2001), considerable attention was paid to it by both researchers and the general public. The report challenged the long-prevailing orthodoxy on whether mammography was helpful at any age, and not just the decade between ages 40 and 50.

The conventional wisdom up to this point was that the seven previously mentioned studies were convincing and that mammography helped save women's lives by detecting tumors early enough to be treated. The Danish researchers, however, concluded differently. They reported that five of the seven studies were too flawed to be credible and that the remaining two studies showed that mammography did not save, or even prolong, lives. Their conclusions were endorsed by *The Lancet* and by an expert group sponsored by the National Cancer Institute.

Other researchers, though, took exception to their findings (S. Duffy et al., 2002a; Tabar et al., 2001), and an analysis in Sweden reported that mammograms may reduce deaths from breast cancer by as much as 45% (S. Duffy et al., 2002b).

The surrounding publicity following Olsen and Gotzsche's (2001) report was nothing short of astonishing. Major professional organizations and experts expressed uncertainty, or they argued either for or against mammograms. In February 2002, Tommy Thompson, secretary of Health and Human Services, declared almost by fiat that if you are a woman aged 40 or older, you need to get screened for breast cancer with mammography every year. A not unrelated aside was that Secretary Thompson's wife was a breast cancer survivor whose tumor was detected by mammography.

Scientific controversies, however, are not resolved by fiat. Proponents of mammography noted that breast cancer death rates have declined by a little more than 1% a year since 1990 and that mammograms were responsible for this decline. Doubters of mammography suggested that perhaps the decline in breast cancer death rates was not due to early detection, but to the increasing effectiveness of treatments like the drug tamoxifen. Despite the secretary's proclamation, the following scientific, economic, and political issues remained:

1. Early detection may prevent a tumor from becoming more deadly. Larger tumors that are discovered later may be more likely to have spread beyond the site in which they arose. And survival chances of a woman with a larger tumor are not as good as those of a woman with a smaller tumor. Or maybe not. Some tumors may be discovered early by mammograms and despite intervention still spread and become deadly; some may never become deadly (about 30%), and early treatment (surgery, radiation, and chemotherapy) may be more harmful than doing nothing; and some may be detected later without harmful consequences.
2. There are also economic considerations. The breast cancer screening industry generates $3 billion a year (Kolata & Moss, 2002), and the medical industry has lobbyists who will not be easily dissuaded about the benefits of mammograms. About 30 million women are having mammograms each year as well as additional tests, and the federal government has compelled insurance companies to cover the screenings.
3. There are other economic influences on mammograms as well. Medicare paid only $85.65 for an initial mammography in 2005 (and many commercial insurers reimbursed even less) for a procedure that most argue costs at least $15 more than that.

Given the inadequate reimbursement and the risk of legal liability, postgraduate fellowships in mammography were not easily being filled. On a related note, there were 5% fewer accredited mammography centers in 2002 than in 2001, and the waiting time for routine screenings was rising (Freudenheim, 2002).

4. It is commonly accepted that all radiologists will miss some breast cancer tumors. But it is not generally known that between 15% and 40% of cancers are not detected by mammography clinics (Moss, 2002). Many physicians read too few mammograms to achieve an acceptable skill level, skill tests are not required, and physicians do not receive feedback on what percentage of cancers are detected.
5. Routine breast self-examination leads to many false-positives; about 90% of what looks like cancer turns out not to be, leading to unnecessary biopsies, which can be harmful (Baxter, 2001; Hill et al., 1988; USDHHS, 1996).

So what is a woman to do? There may be no enduring answers, but the U.S. Preventive Services Task Force decided to weigh in on the controversy in 2002 through one of their updated guidelines. Their conclusion: The original mammography studies did have flaws, but they were not drastic enough to change the recommendations. They encouraged women, particularly between the ages of 50 and 69, and perhaps between the ages of 40 and 74 (Humphrey et al., 2002), to get a mammogram every year or two. For clinical breast examination and breast self-examination, the Task Force reports that the evidence from randomized trials is inconclusive.

Additional studies have shown further support that mammography leads to a reduction in breast cancer mortality, though the magnitude of the benefit—compared to powerful new drugs accounting for the decline—was uncertain (Otto et al., 2003; Tabar et al., 2003). One study attempted to sort out the relative benefits of mammograms versus powerful new drugs in producing the 24% decline in breast cancer mortality in the United States from 1990 to 2000. Seven independent research teams all concluded that mammograms led to breast cancer decline, though the teams varied in the magnitude of the benefit, from 28% of the decline to 65%, compared to the benefit of drug therapies (Berry et al., 2005).

MENOPAUSE

There is no definitive medical screening for menopause. The average age at menopause in the United States is 51, and its existence is primarily documented by the onset and eventual termination of a variety of symptoms.

These symptoms typically include irregular menstrual cycles, hot flashes, changes in mood and cognition, insomnia, headache, and fatigue.

Some women do not view their menopausal symptoms as a medical problem and do not seek a consultation with a physician. At the other end of the spectrum, menopause may be viewed as an estrogen-deficiency disease. There is considerable cultural variation in attitudes toward, and the definition of, menopause.

At the start of the new millennium, however, the debate over the use of hormone replacement therapy (HRT) to relieve the symptoms of menopause and prevent disease may have even surpassed the controversy over the use of mammography. And, once again, there were serious questions about the validity of the research that had been conducted over the past couple of decades.

The early studies that provided optimism about HRT were based on observational studies in which large groups of women were tracked for years. In these studies the patients themselves decided whether to take HRT. We later found out that the sample populations for these studies were more affluent, better educated, younger, thinner, more likely to exercise, and with greater access to health care than women in general. In other words, the sample populations were healthier and had better health habits than other women, and the outcomes they had may have been due more to this sampling bias than to the intervention of HRT.

Under the leadership of Bernadine Healy, the first woman to head the NIH, the Women's Health Initiative was launched in the 1990s, and it included the Heart and Estrogen/Progestin Replacement Study (HERS) and its follow-up (HERS II). Using a more rigorous methodology, HERS and HERS II produced surprising results by correcting the previous sampling bias through a placebo-controlled clinical trial with random assignment. This type of randomized study is considered the gold standard in medical research, but it is much more expensive to conduct, and ethical questions are raised when some persons have to be randomly assigned to a placebo control group.

To the surprise of many people, the randomized clinical trials did not agree with several decades of consistently positive results from observational studies. Even more surprising, the HERS studies reported that there was an *increase* in heart attacks, strokes, breast cancer, and blood clots in the legs and lungs among healthy women taking HRT compared with those on the placebo (Grady, 2002b; Spake, 2002). In 2001, the American Heart Association reversed its support of HRT, and for women with cardiovascular illness a recommendation was made to avoid the therapy. In 2002, NIH became sufficiently convinced about the problems associated with HRT to send letters to the 16,000 women participating in the HERS II study, recommending that the therapy be terminated.

Even prior to the termination of this study, most women who opted for HRT were not staying on it for long. Within 1 year, 53% of 900 HRT users between 1993 and 1995 in one study had discontinued the therapy, and two-thirds had discontinued by the following year (Reynolds et al., 2001). Those who discontinued HRT cited the fear of cancer and side effects. Physicians were also becoming more cautious with HRT, using lower doses (Lindsay et al., 2002), focusing on menopausal symptoms, and reassessing its effectiveness after a few years (Grady, 2002a; Spake, 2002). For disease prevention, there appeared to be better options than HRT for heart disease (e.g., statins or aspirin) and osteoporosis (e.g., Fosamax or Actonel).

To offset emerging HRT risks, drug companies were working on selective estrogen-receptor modulators (SERMs), such as tamoxifen and raloxifene, that may reduce the risk of breast cancer and cardiovascular events and have a positive impact—though considerably less than estrogen—on the slowing of bone loss (Barrett-Connor et al., 2002; Mestel, 1997a; Walsh et al., 1998). SERMs may also relieve some of the side effects typically associated with other forms of hormone replacement therapies.

Alternative options for alleviating menopausal symptoms have not been as promising as HRT. Over-the-counter herbal supplements like black cohosh are becoming more popular for alleviating symptoms, even though the supporting research on its effectiveness remains inconclusive at best. Black cohosh and a variety of soy products (i.e., weak plant-based estrogens) work to some degree in the alleviation of symptoms in up to 40% of menopausal women, but this is about the same percentage improvement that placebos elicit!

In October 2002, the North American Menopause Society recommended that HRT not be prescribed for the prevention of heart disease and that alternatives should be considered for the treatment of osteoporosis. For women who want to treat menopausal symptoms, HRT should be limited to the shortest possible duration, and lower doses should be considered. Apparently, women already had gotten the message. On June 21, 2002, 379,581 prescriptions were filled for Prempro, a popular HRT; on September 20, 2002, only 211,249 prescriptions were filled (Elliott, 2002), a decline of 44% in 3 months.

Women's Health Initiative 2006 Update: Controversy Continues

When Bernadine Healy became the first female director of the NIH in 1991, she made the lack of female participants in government research a top priority to address. She began the Women's Health Initiative a year later, which

involved approximately 162,000 postmenopausal women between the ages of 50 and 79.

This study, which began in 1992 and is scheduled to end in 2010, was funded to the tune of $725 million. It involved giving women annual physicals, taking blood samples, and completing an annual survey regarding diet and other aspects of lifestyle. Some of the volunteer women were routed to the previously discussed HRT study, some to a low-fat diet study, and others to a calcium and vitamin D trial. All of these studies were based on huge samples and the gold standard of research: random assignment to treatment and control groups.

Unfortunately, as was the case with the HRT study, the results from the other two studies were also contrary to expectations and created considerable confusion. More than 36,000 women either took supplemental calcium (1,000 mg of calcium carbonate) and vitamin D (400 IU), or a placebo. After the average follow-up of 7 years, total fracture rates were *not* reduced by daily supplements. There was also no protection against colon cancer from the daily supplements, and the risk of kidney stones slightly increased.

Critics argued, however, that nearly two-thirds of the women in the placebo group had high intakes of calcium and vitamin D from their diet and that many in the supplement group failed to take the supplement consistently. Moreover, if you focus on the women who did take the calcium and vitamin D at least 80% of the time, there was reduced risk of hip fractures. Selecting out a subgroup, however, often produces results that are not replicable. Only additional time and research will tell.

The low-fat diet trial involved an even larger sample of 49,000 women and also produced controversial results. Women either joined the group that reduced their fat intake to 20% of daily calories and increased their vegetable and fruit intake to five servings per day and grains to six servings per day, or they continued to eat their normal diet. The healthier diet produced *no* benefit to the hearts of postmenopausal women, did *not* lower the risk of colorectal cancer, and did *not* protect postmenopausal women against breast cancer (though it came close).

The low-fat diet, however, proved to be difficult, if not impossible, for the average woman to follow. The treatment women, despite ongoing support from nutritional counseling, were unable to reach the goal diet of 20% of calories from fat, and, in fact, as the study progressed, their fat intake rose to 29%, not too much different from the average diet.

Moreover, lower fat intake, as flawed as the attempt was, did lower breast cancer by 8%, or only 1% less than a statistically significant result. And, finally, the study measured overall fat, and current research (see chapter 7, Weight Management) is leaning more toward the reduction of saturated and trans-fat as the primary mechanism for improving health.

Conclusion? These studies have yielded valuable data that are confusing in the short run but likely to be more definitive in the future and helpful for those who want to live healthier lives. In the meantime I would be cautious with HRT -particularly in regards to breast cancer-, and bullish on the positive, long-term benefits of calcium and vitamin D supplements (see chapter 8) and lower fat intake (see chapters 6 and 7).

BLOOD PRESSURE

High blood pressure is defined, regardless of age, as a systolic blood pressure of 140 mmHg or higher, or a diastolic blood pressure of 90 mmHg or higher. Systolic and diastolic blood pressures tend to increase until age 60; after that, systolic pressure may continue to increase, with diastolic pressure stabilizing or even decreasing (Beers & Berkow, 2000). A few years ago, clinicians distinguished between hypertension, or readings over 160/95, and high blood pressure, or readings over 140/90. Now the terms are used interchangeably, and the lower threshold applies.

Moreover, researchers are making the case that the threshold should be lowered. High-normal blood pressure (130/85) is associated with elevated risk for heart disease and stroke (3 times more in women, 2 times in men), particularly among older persons (Vasan et al., 2001). In 2001, the National Kidney Foundation lowered the blood pressure target recommended for people with diabetes to 130/85 or below.

And in 2003, a panel of experts from the NIH issued new federal guidelines stating that readings between 120 and 139 mmHg systolic and 80 and 89 mmHg diastolic should be considered prehypertensive. The NIH panel believed there was solid evidence that damage to blood vessels begins at lower pressure levels. While hypertension quadruples the risks of heart disease and stroke, prehypertension doubles the risks.

Heart disease and stroke are not the only problems with hypertension. Uncontrolled hypertension leads to reduction in cognitive function, specifically short-term memory and verbal ability, as one gets older (Brady et al., 2005). As systolic blood pressure rises, the risk of dementia later in life increases as well (Freitag et al., 2006). Elderly patients with mild-to-moderate hypertension are at increased risk of dementia (Skoog et al., 2005).

Sixty-five percent of Americans aged 60 and over have high blood pressure, according to the 1999–2000 National Health and Nutrition Examination Survey. Researchers associated with the Framingham Heart Study of the National Heart, Lung, and Blood Institute report that Americans aged 55 with normal blood pressure levels face a 90% chance—let me repeat that, a 90% chance!—of developing hypertension

over the remainder of their lives (Vasan et al., 2002). Complicating the problem of a greater incidence and prevalence of high blood pressure than previously thought is the undertreatment of the problem by physicians, especially among older patients and perhaps up to 75% of them (Hyman & Pavlik, 2001; Oliveria et al., 2002).

The good news about blood pressure is that there is widespread awareness. It is estimated that three out of four adults, and perhaps 90% of older adults, have had their blood pressure measured within the preceding year (see Figure 3.1). The bad news is that among those with high blood pressure, only one-fourth remain in treatment and consistently take their medication in sufficient amounts to achieve adequate blood pressure control (National Heart, Lung, and Blood Institute [NHLBI], 1997).

Nonpharmacologic therapies, such as exercise, sodium restriction, weight reduction, decreased alcohol intake, smoking cessation, and stress management, are promising in lowering mildly elevated blood pressure (Appel et al., 2003; Chobanian, 2001; Elmer et al., 2006; Linden et al., 2001; NHLBI, 1997), but these lifestyle changes can be complicated by biological factors (e.g., hypertensives who are not salt-sensitive) and behavioral factors (e.g., ability to maintain weight loss or sustain an exercise program).

FIGURE 3.1 Nursing student teaching older adult to take a blood pressure reading in one of the author's health education classes.

Medicare does not provide specific coverage for blood pressure screening (though it is considered part of the overall care covered by Medicare), despite the fact that uncontrolled high blood pressure among older adults is widespread, with costly consequences (Rigaud & Forette, 2001). If Medicare coverage of periodic blood pressure screenings was instituted, it would provide more attention to the problem, encourage more reliable screenings than the ones currently available in clinics and at community sites, and allow for appropriate follow-up counseling in a timely manner (Haber, 2001a, 2005b).

As with other medical screenings, though, there is the question of an upper age limit. Although blood pressure screenings have been recommended over the entire adult life cycle for many years, there has been increasing discussion over whether screenings and counsel might be discontinued at age 80 due to uncertain impact on morbidity or mortality (Amery et al., 1986; Gueyffier et al., 1999; Rigaud & Forette, 2001; Staessen et al., 1998). One study suggested we think twice before initiating drug therapy and attempting to lower mild-to-moderate systolic hypertension among persons aged 85 and over; individuals aged 85 and over with lower systolic blood pressure had *increased* mortality (Rastas et al., 2006).

One final note about scientific definitions: As I was writing this chapter, the American Society for Hypertension was deliberating about an expanded definition of hypertension from strictly blood pressure criteria to the use of a broader syndrome that includes other cardiovascular risk factors. While this expanded definition of high blood pressure may have scientific merit, it is unfortunate that this scientific professional society received unrestricted grants from the pharmaceutical companies to develop this new definition. Scientific professional societies should completely sever the connection between scientific decisions and financial support from profit-making businesses. Drug companies should ethically remove themselves from playing a role in redefining an illness that may expand the use of their medications.

OSTEOPOROSIS

Osteoporosis affects more than 28 million Americans, 80% of whom are women, and causes 1.5 million fractures each year. Almost half the fractures are vertebral (700,000), followed by hip and wrist (300,000 each). Half of women over age 50 will have an osteoporosis-related fracture in their lifetimes.

Osteoporosis is a condition in which the bones are thin, brittle, and susceptible to fracture. Without intervention, about 5% to 10% of

trabecular bone is lost during the first 2 years after menopause, up to 20% in the 5–7 years following menopause, followed by a more gradual loss after that. Osteoporosis is technically defined as a bone density that is 2.5 or more standard deviations below the young adult peak bone density. Osteopenia is a weakening of the bones and can be considered a warning on the way to osteoporosis. It is technically defined as 1–2.5 standard deviations below the young adult peak bone density.

A study of more than 200,000 allegedly healthy women aged 50 and older found osteoporosis in 7% of the women and osteopenia in another 40% (Siris et al., 2001). The fracture rate of women with osteoporosis in the following year was 4 times higher than the women with normal bones, and it was 2 times higher in women with osteopenia. These study results were surprising not only in detecting the widespread prevalence of osteopenia, but also in the researchers' ability to detect within a year a significant increase in fracture rate.

It should be noted that the study used a noninvasive imaging technique (with very low levels of radiation) called single-energy X-ray densitometry on peripheral bone sites, rather than the more accurate double-energy X-ray densitometry that is done on the spine and hip. The authors reported, however, that the fracture prediction rates were not compromised much by the use of the quicker, less expensive, single-energy X-ray readings.

Surprisingly, studies that identify osteoporosis in women report that detection does not necessarily lead to follow-up intervention. Only 24% (Andrade et al., 2003) and 46% (Feldstein et al., 2003) of those who had suffered an osteoporosis-related fracture in each of two independent samples received drug treatment for osteoporosis within 1 year and 6 months, respectively, following the fracture.

Another problem stems from the fact that the disease goes undiagnosed in more than half the cases (Stafford et al., 2004). Women who are most in need of bone density testing—women aged 75 and over—are the least likely to get it. In the 3 years after Medicare reimbursement for osteoporosis screening began, 27% of women aged 65–70 were tested, but less than 10% of women aged 75 and over were tested (Neuner et al., 2006).

In one review of the research literature, close to 90% of women with osteoporosis were not being diagnosed with the condition, and only about one-third with the diagnosis were offered treatment for the disease during the 1990s (Gehlbach et al., 2002). Diagnosis and treatment appear to be increasing a decade later, though, due to the growing popularity of screenings for bone density and coverage by Medicare that started in 1998 for women at risk for osteoporosis. Unfortunately, the definition of risk for osteoporosis was not made clear by Medicare when

reimbursement was first instituted, and physicians were unclear for a few years about reimbursement for their older patients.

If almost half the women aged 50 and older have osteoporosis or osteopenia, one can argue that by age 65 a significant majority of women are at risk and that therefore all women aged 65 and over on Medicare should be screened. The U.S. Preventive Services Task Force came to this conclusion in an updated guideline and recommended that routine screening begin at age 65 for all women (H. Nelson et al., 2002). It is still not known, though, how often women should undergo screenings (though some panel members recommended every 2 or 3 years) or when or if they should be discontinued at a certain age.

Some physicians take a more traditional approach and first add up the number of risk factors for osteoporosis for a specific woman before recommending screening. The risk factors, in addition to age and female gender, are White or Asian race, slender build, bilateral oophorectomy prior to natural menopause, early onset menstruation, smoking, alcohol abuse, physical inactivity, the use of steroid hormones to treat a variety of medical conditions, and getting too little calcium or too much caffeine, protein, and salt from the diet.

Interventions for reducing or reversing bone loss include an increase in dietary calcium, calcium and vitamin D supplementation, weight-bearing exercise, hormone replacement therapy, and medication, particularly bisphosphonates such as Fosamax, Actonel, and Boniva.

Fosamax (alendronate sodium) is a medication approved by the Food and Drug Administration in 1995 that can actually reverse osteoporotic bone loss. It increased bone density 3% to 9% in one sample of postmenopausal women, while a placebo group lost bone (Liberman et al., 1995). This study also reported that women with osteoporosis who took Fosamax were only half as likely to break a hip as women who did not take it. Actonel came along a bit later, but it too showed evidence of substantially reducing the incidence of new vertebral fractures (Heaney et al., 2002).

The major drawback to bisphosphonates in tablet form is that they must be swallowed without chewing, and they can linger in the esophagus and cause serious ulcers if not taken exactly as directed: on an empty stomach, with a full glass of water, half an hour before the first meal of the day, and standing or sitting upright for at least 30 min. Many patients have problems complying with these recommendations (DeGroen et al., 1996). Also, bisphosphonates may increase the probability of osteonecrosis (broken and deteriorating bones) of the jaw (Ruggiero et al., 2004). A nasal spray called Miacalcin (calcitonin) is an alternative that is easier to use but only half as effective.

On a positive note, osteoporosis drugs are improving, especially for women who do not tolerate oral dosing well, from a once-a-day pill;

to the once-a-week oral bisphosphonate Fosamax, which was approved in 2001; to the once-a-month oral Boniva approved in 2005 (Emkey et al., 2005); to the intravenous injection Boniva once every 2 or 3 months (Delmas et al., 2006); to the promise of a once-a-year injection (*Health News*, 2006; Reid et al., 2002).

Calcium and vitamin D supplementation is also an effective intervention for osteoporosis and will be examined under dietary supplements in chapter 8, Complementary and Alternative Medicine.

CHOLESTEROL

At one point in time, cholesterol guidelines were a rather simple affair. In an earlier edition of this book I reported that a total blood cholesterol level of 240 mg/dl or higher was considered abnormal because it had a substantial association with coronary heart disease (USPSTF, 1996) and that about 27% of U.S. adults had this high of a level. I was also able to report on an increasing awareness of cholesterol levels, with the percentage of adults who had their cholesterol levels checked increasing from 35% to 59% of the population between 1983 and 1988 (AARP, 1991). A more complicated issue was whether cholesterol screenings were recommended after the age of 70. It had not been determined whether the association between higher cholesterol concentrations and atherosclerotic coronary artery disease, for instance, may weaken or strengthen with age (Ettinger et al., 1992). Should the association remain the same or strengthen with age, it is an important and modifiable risk factor among older persons. Should it weaken with age, cholesterol testing with older adults would not be an effective screening.

An informal survey of several hundred physicians revealed that the majority considered age 70 the approximate threshold for effective treatment of an elevated cholesterol level. Most expressed some concern about initiating treatment through drugs or diet with patients over age 70. The concerns regarding the prescribing of hypolipidemic drugs related to their cost, side effects, and their potential interaction with other medications (Hazzard, 1992).

Dietary therapy and follow-up by physicians, dietitians, or nutritionists appeared to be effective in reducing dietary fat intake and serum cholesterol in adults of all ages (Insull et al., 1990). Dietary recommendations typically consisted of reducing fat intake to less than 30% of total calories, saturated fat (fat that is solid at room temperature, e.g., butter, cheese, fat in red meat) to less than 10% of total calories, and cholesterol intake to less than 300 mg/day (Report of the National Cholesterol Education Program, 1988).

FIGURE 3.2 The late Elizabeth "Grandma" Layton took her first art class at age 68 and drew a picture of her husband Glenn on a bathroom scale when he was concerned about weight loss and malnutrition.

The major concern with dietary recommendations for the lowering of cholesterol levels was that it may foster malnutrition in highly compliant older clients (see Figure 3.2). Malnutrition is not an uncommon issue when it comes to older adults, and cholesterol or fat avoidance that triggers malnutrition is a legitimate concern.

There have been significant changes over the past few years regarding more aggressive guidelines for cholesterol screening, and more vigorous treatment. While these changes have been motivated by medical concerns, there are health education and financial consequences as well.

The National Cholesterol Education Program (NCEP) III guidelines that were published in 2001 were more demanding and complicated

than previous guidelines (Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults, 2001). Determining risk involved more than the simple calculation of a total blood cholesterol level; it involved the calculation of several measurements: total cholesterol level, HDL cholesterol level, systolic blood pressure, the 5-year age category, smoking status, abdominal obesity, diabetes, and a family history of heart disease.

A 2004 update to the NCEP's clinical practice guidelines was more aggressive in terms of LDL level. Low-risk patients (zero to one risk factors) should be below an LDL level of 160 mg/dl, as before, but moderately high risk patients (two or more risk factors) should be below 130 mg/dl. For high-risk patients (i.e., coronary heart disease patients or the risk equivalent), an LDL below 100 mg/dl was now recommended, rather than the previous 130. And for a subset of very high risk patients the recommendation was less than 70. Not surprisingly, it was recommended that a physician be consulted for expert advice on the number of risk factors that you have before determining which LDL category was acceptable for you.

In addition, this aggressive approach increases the number of persons who are being recommended to take the new cholesterol-lowering medications—from 13 million under the 1993 guidelines, to 36 million under the 2001 guidelines, to 43 million under the 2004 update. This may be reassuring from a medical perspective but raises some nonmedical issues. How many adults can afford the $1,200 a year for medication costs? If society cannot afford the estimated $300 billion annually that may be needed for cholesterol-lowering medications (Ansell, 2002), should only the well-off be privileged to get them (Gambert, 2002)? What are the long-term effects of treating younger persons more aggressively and having them on cholesterol-lowering medications for 40 years or more?

Paralleling the aggressive new NCEP guidelines, the U.S. Preventive Services Task Force released its new guidelines for cholesterol screening and eliminated its upper age limit of 65 for routine cholesterol screening. The clinical evidence, however, is more supportive for treating hyperlipidemia in older adults than it is for removing an upper age limit for routine screening and primary prevention (Hall & Luepker, 2000; Oberman & Kreisberg, 2002). Another study raised the question whether screening and treatment for patients over the age of 80 is effective with lowering mortality rate (Foody et al., 2006).

My last concern with the new NCEP panel guidelines is that while the experts mention diet and lifestyle recommendations, they come close to proclaiming medication as the *only* way to achieve major cholesterol reduction (Fedder et al., 2002). Since the majority of the NCEP panel of experts have links to the major pharmaceutical companies that produce

statins, it makes you wonder if their perspective has been influenced by this association.

When dietary recommendations are made by the panel, they seem to be particularly harsh, reducing the daily limit on dietary cholesterol to less than the amount in the yolk of a single large egg. This is tantamount to avoiding, for the most part, not only a second egg, but also meats, poultry, and cheese. Overly compliant older adults may run the risk of malnutrition.

Statins

Cholesterol levels fell markedly over the past 20 years due, in large part, to the introduction of statin drugs in the late 1980s (Carroll et al., 2005). Not so coincidentally, annual deaths from heart disease in the United States dropped from nearly 800,000 in the late 1980s to about 650,000 in 2002. Statins, such as Lipitor, Zocor, and Pravachol, substantially reduce levels of LDL cholesterol, the kind that clogs arteries and leads to heart attacks and strokes. The target goal of Healthy People 2010 for no more than 17% of U.S. adults having a total cholesterol level of 240 mg/dl or higher had been met by 2004. By that year, annual sales of statin drugs had increased to $14 billion in the United States.

When the cholesterol-lowering drugs referred to as statins were first subjected to an onslaught of research studies, they were touted to not only reduce blood cholesterol by as much as 60%, but to benefit a wide range of conditions, like osteoporosis and colon cancer (Ansell, 2002; Scranton et al., 2005; "Statin Drugs," 2001), heart disease and strokes (Altman, 2001; Heart Protection Study Collaborative Group, 2002; Landers, 2001; LaRosa et al., 2005; Nissen et al., 2006; Ramasubbu & Mann, 2006), breast cancer (Ricks, 2001), and dementia or Alzheimer's disease (Jick et al., 2000; Masse et al., 2005; Simons et al., 2001; Yaffe et al., 2002).

This initial optimism has been reigned in a bit by several studies that show that statins do not appear to reduce the risk of incident dementia or Alzheimer's disease (Li et al., 2004; Rea et al., 2005; Zandi et al., 2005), incident colorectal cancer (Jacobs et al., 2006), or cancer in general (Dale et al., 2006). Undaunted new studies continue to be published touting yet new benefits for statins, such as a reduction in the risk of cataracts (Klein et al., 2006).

Many of these preliminary studies, however, were not randomized clinical trials, and statins may be more efficacious (i.e., likely to succeed in studies) than effective (i.e., likely to succeed in practice) because noncompliance rates increase over time in routine care settings (Benner et al., 2002; Elliott, 2001b; Jackevicius et al., 2002), with out-of-pocket costs

being a major contributing factor (Ellis et al., 2004). There is also a clinical advisory on the safety of statins, particularly on the risk for myopathy, a neuromuscular disorder (Pasternak et al., 2002), liver disease (LaRosa et al., 2005), and incidence of hip osteoarthritis (Beattie et al., 2005).

In 2006, efforts to sell cholesterol-lowering statin drugs over the counter were defeated by the Food and Drug Administration. Not only were concerns raised about the ability of people to self-determine whether they should take a statin, but there are serious side effects among a small minority of users. To end on a positive note, a much less expensive generic version of a widely used cholesterol drug, Zocor, came out in 2006.

CERVICAL CANCER

Until the 1940s, more American women died of cervical cancer than any other type of malignancy. However, the Pap test, named for its creator, George Papanicolaou, reduced the death rate from cervical cancer by 70%. Pap testing is recommended for women beginning at the age at which they first engage in sexual intercourse, and it should be repeated every 3 years after they have had at least two normal annual screenings. For women aged 65 and over who have had regular normal Pap smears, the U.S. Preventive Services Task Force 2003 update concluded that the harms of continued routine screening, such as false-positive tests and invasive procedures, may outweigh the benefits.

Many older women, however, have not had adequate screening; nearly half have never received a Pap test, and 75% have not received regular screening. Older women are least likely to have had Pap smears, in part because they no longer visit gynecologists, the specialists most likely to recommend the test (Jones, 1992).

Pap screening for older women is important. Recognizing this fact, Congress mandated, in 1990, that Medicare cover Pap smears triennially. In 1992, federal clinical laboratory regulations were established. In 1998, benefit coverage improved considerably when the full claim for Pap smears became reimbursable. In 2001, Medicare covered cervical cancer screening every 2 years for women not at high risk for uterine or vaginal cancers (though research suggests a 3-year interval may be appropriate; Sawaya et al., 2003), while continuing to cover annual tests for women at high risk.

In 2006, a cervical cancer vaccine named Gardasil was approved by the Food and Drug Administration. In tests, the vaccine was effective in blocking viruses that cause 70% of cervical cancer cases (Lehtinen & Paavonen, 2004). The vaccine works best when given to girls before they begin having sex and preferably between the ages of 11 and 26. The

vaccine is administered in three shots over 6 months and, after a catch-up campaign, will be recommended on a routine basis for all 11- and 12-year-old girls. A vaccine for boys is still in the testing stage.

The $360 cost for this vaccine is expensive and will be a barrier for Americans who lack health insurance or do not qualify for a federal or state immunization program. It will be an even bigger financial barrier in the developing world, where the incidence of cervical cancer is much higher than in the United States. Another concern is that conservative Christians will view the cervical cancer vaccine as a tacit license to engage in sexual activity among the young. This apprehension for most religious groups, though, is likely to be offset by its cancer-reduction capability.

COLORECTAL CANCER

There were 148,000 new cases of colorectal cancer and 57,000 deaths in 2002, making it the second leading cancer (after lung cancer) and cause of cancer-related death. Risk for colorectal cancer increases with age, with most new cancers affecting persons aged 75 and older. Although the U.S. Preventive Services Task Force does not recommend one screening method over another, in a 2002 update it *strongly* recommended some type of screening for colorectal cancer for persons aged 50 and over. This upgraded its previous position in 1996, when it simply recommended screening.

The Task Force recommended annual fecal occult blood testing, though it should be noted that fecal occult blood testing produces a high percentage of false-positives (5% to 10%). Digital rectal examinations are of limited value since few colorectal cancers (about 10%) can be detected by this procedure.

In the absence of adequate research, expert opinion recommends a sigmoidoscopy every 4 years for average-risk patients older than 50 (USPSTF, 2000a). A sigmoidoscopy, however, only examines about 40% of the colon (about 2 feet), and research supports the need for a colonoscopy (Lieberman et al., 2000; Podolosky, 2000), which examines the entire length of the colon (about 5 feet).

Medicare covers a fecal occult test annually, a flexible sigmoidoscopy every 4 years, and a colonoscopy every 10 years. There is no upper age limit to sigmoidoscopy or colonoscopy coverage, though this test may be discontinued at age 80 with minimal loss in life expectancy (Lin et al., 2006; Rich & Black, 2000). Beginning at age 70, life expectancy and comorbidity become factors in whether the risks of colorectal cancer screening (follow-up procedures, perforation of intestinal lining, etc.) outweigh the benefits (Ko & Sonnenberg, 2005).

Although Medicare coverage for colorectal cancer screening has expanded, compliance has not improved significantly. In 1999, only 14% of Americans over age 65 received a colon cancer screening test, even though the tests were fully covered by Medicare ("Medicare Patients," 2000). A 2-year campaign by a California health maintenance organization to encourage patients to get any of three screenings for colon cancer led to only a 26% compliance rate (Ganz et al., 2005). The tests remain uncomfortable and embarrassing, and both client noncompliance and physician reluctance to perform the procedure on asymptomatic patients has been reported (USPSTF, 1996).

There was a 20% increase in colorectal cancer screenings over a 9-month period, however, after Katie Couric, then television show host of *Today*—whose husband died of colorectal cancer—had the procedure done live on television in March 2000 (Cram et al., 2003). This increase in screenings—referred to as the Couric Effect—was a temporary one.

Some of the discomfort of colon cancer screening may be eliminated through a virtual colonoscopy, a scanner that takes hundreds of X rays at different angles from the outside and then uses sophisticated software to combine the data to produce a three-dimensional image of the colon. At the current level of technology, however, this type of scan misses growths identified by the traditional colonoscopy, and abnormal results still require a follow-up with the traditional colonoscopy ("Virtual Colonoscopy," 2005).

Another approach to colorectal screening involves the swallowing of a small camera to scan from the inside (Hara et al., 2004). Patients do not have to worry about returning the camera; the capsule in which the camera is placed will do what food does. Another test looks for abnormal DNA in stool samples (Ahlquist et al., 2000), and funded research is underway to develop a blood test to determine colon cancer risk. These strategies are in the experimental stage, and a high rate of compliance for colon cancer screening is likely to be dependent on the success of one of them.

PROSTATE CANCER

More than half of all men over age 60 are bothered by benign prostatic hyperplasia, a gradual enlargement of the prostate that occurs with age. A much more serious diagnosis, prostate cancer, is a disease that is second only to lung cancer in accounting for cancer deaths in men. Stamey and colleagues (2004) argue that the prostate-specific antigen screening test (PSA test) recommended by the American Cancer Society, the American College of Radiology, and the American Urology Association

only measures an increase in prostate size, that is, benign prostatic hyperplasia, rather than the presence of prostate cancer tumors. This finding was anticipated by the U.S. Preventive Services Task Force in a 2002 update which concluded that there is insufficient evidence to recommend for or against routine PSA screening for American men as it has little predictive value of mortality from prostate cancer.

Although autopsy studies indicate that prostate cancer is present in about 70% of men at age 80, only 3% of men die from it. A large proportion of prostate cancers are latent, unlikely to produce clinical symptoms or affect survival (USPSTF, 1996). Moreover, many men may live with slow-growing prostate cancers that never cause any problems, but removing them, or radiating them, can cause urinary and bowel incontinence and impotence without providing any benefit. Thus routine prostate screening is not yet deemed effective; that is, the screening tool does not yet lead to treatment that reduces the mortality rate (Sox, 1997).

A case control study of patients at 10 Veterans Affairs medical centers reported that a PSA screening is not an effective tool for predicting prostate cancer risk (Concato et al., 2006). Another study reported that 29% of prostate cancers in White men and 44% of prostate cancers in African American men that are detected by PSA may represent overdiagnosis, that is, defined as the detection of a prostate cancer that otherwise would not have been detected within the patient's lifetime (Etzioni et al., 2002).

An examination of PSA testing from 1996 to 2002 in Cambridge, United Kingdom, reported substantial overdiagnosis of men with prostate cancer who would otherwise have not been diagnosed within the patients' lifetimes (Pashayan et al., 2006). Yet another study similarly concluded that "most men with prostate cancer detected by PSA screening will live out their natural span without the disease ever causing them any ill effects" (Parker et al., 2006, p. p. 1367).

A Scandinavian study of 695 men (mean age 65) with early prostate cancer randomized participants to radical prostatectomy or to watchful waiting. A 6-year follow-up reported that death from prostate cancer occurred significantly less often in the surgery group than in the watchful-waiting group; however, all-cause mortality was not significantly different in the two groups (Holmberg et al., 2002).

There are other aspects of PSA testing that need further examination. Not only is it questionable whether high PSA scores are predictive of prostate cancer mortality, but people with low PSA scores—about 15% of patients who score below the standard 4.0 ng/mL threshold—may nonetheless have prostate cancer (Thompson et al., 2004).

Given that media publicity portrays PSA testing as unequivocally beneficial—and that 80% of patients in one sample believed that "doctors

are sure that PSA tests are useful" (Chan et al., 2003)—it is important to find ways to temper overenthusiasm for routine screening and treatment when no one has yet demonstrated that finding prostate tumors early saves lives or improves health. When Patrick Walsh, chairman of urology at Johns Hopkins, was asked if he would test a man in his 80s for prostate cancer, he replied "not unless he's brought in by both his parents."

The most promising line of research in the field now focuses on the rapidity with which the PSA level increases in the year before a cancer diagnosis. Twenty-eight percent of the men whose PSA levels increased by more than 2.0 ng/mL during the year before diagnosis of prostate cancer died within 7 years—about 10 times more predictive of prostate cancer death than the absolute PSA level (D'Amico et al., 2004).

Treatment options for benign and malignant prostate problems vary and include drug therapy, surgery, heat, freezing, herbs, and vaccines. The increasing use of saw palmetto, a plant-based remedy for benign prostate problems, is promising, providing mild to moderate improvement in one study (Wilt et al., 1998). A more recent study, however, reported that there was no significant difference between saw palmetto recipients and placebo recipients (Bent et al., 2006). Regarding prostate cancer, a vaccine called Provenge has produced interesting results during a clinical trial. This vaccine—so-called not because it prevents disease, but because it may accelerate the body's own immune system to fight cancer after it has developed—appeared to extend survival 4.5 months in a final-stage clinical trial (Pollack, 2005). No previous cancer vaccines tested in clinical trials, though, have reached the market in the United States, and the jury is still out on Provenge.

HEARING AND VISION

It is estimated that 33% of Americans aged 65–75 have some hearing loss, and the percentage climbs to 50% among persons aged 75 and over. Future cohorts of older adults are likely to have worse hearing problems thanks to the popularity of headphones for music and cell phone conversations at too high a volume or too long an exposure (Fligor & Cox, 2004).

Presbycusis is the age-related hearing loss that results in the inability to register higher frequency sounds. Consonants with higher frequency sounds blend together, and a hearing aid that merely amplifies will not be effective. Interventions for hearing loss, though, have improved over the last several years. Newer digital hearing aids have a precision that can selectively enhance frequencies that older analog models cannot do and are able to create a signal that is more finely tuned to the hearing loss of older adults.

Of an estimated 30 million Americans who could benefit from hearing aids, only 20% use them. This is not surprising, given that aids are not covered by insurance and that only about half of hearing aid users are satisfied with their aids. Nonetheless, it is important to deal with hearing loss because a 1999 National Council on the Aging study reported that those with hearing loss are more susceptible to depression, worry, anxiety, paranoia, lower social activity, and emotional insecurity than those who get help ("Time to Deal," 2002). In addition, memory and other cognitive functions are impaired with the extra processing required from hearing-impaired individuals attempting to comprehend words (McCoy et al., 2005).

To buy a hearing aid, clients should have had a physician's evaluation (preferably by an otolaryngologist or otologist in a soundproof room) within the previous 6 months. After this initial screening, consumers need an audiologist or licensed hearing-instrument specialist to evaluate hearing loss and recommend an appropriate device. Unfortunately, people who dispense hearing aids may receive a commission from a hearing aid maker, thereby affecting their objectivity in choosing the most appropriate aid for a client ("Age, Hearing Loss," 2000).

Digital hearing aids are expensive (around $1,900 for each ear) and not covered by Medicare. The old analog aids cost considerably less but are quickly being supplanted by the newer models. Because Medicare and most health insurers do not pay for hearing aids, it may be helpful to contact Hear Now (800-648-HEAR), which can provide hearing aids to persons whose income level qualifies them for assistance. The Better Hearing Institute (800-EAR-WELL) may also help persons locate financial aid in their local area.

Although less common than hearing impairment, blindness is one of the most feared disabilities (Gallup, 1988). Presbyopia, a universal age-related change in vision, begins in most persons in their 40s. Despite age-related changes, visual acuity in the absence of disease should be correctable to 20/20, even in very old persons (Beers & Berkow, 2000).

Macular degeneration, the loss of central vision, is the leading cause of blindness among older adults and can be self-detected by looking at a grid with a dot in the middle of it (the Amsler grid is available through http://www.macular.org, access "examinations"). Approximately 25% of persons over 65, and 33% of those over 80, have signs of macular degeneration.

Though damage from macular degeneration cannot be reversed, early detection may help slow the progression of the disease. The National Eye Institute's Age-Related Eye Disease Study reported that antioxidant vitamins with zinc may slow the progress of macular degeneration in certain subsets of people with the disease ("Preserving Your Sight," 2002).

A vitamin E supplement by itself, however, does not appear to slow the progress of macular degeneration (J. Taylor et al., 2002).

A cataract is a clouding of the lens that reduces visual acuity. In patients over age 75, 52% have visually significant cataracts (Lee & Beaver, 2003). Most cataracts can be successfully dealt with through changes in corrective lenses, and more advanced cataracts can be successfully removed through surgery. Surgery should be performed when desired activities cannot be conducted, rather than on the basis of which stage of maturation the cataract is in (Beers & Berkow, 2000). The surgery can be performed under local or topical anesthesia, has very low morbidity and almost no mortality, and 92% report improved visual function after surgery (Lee & Beaver, 2003).

About 3 million Americans have glaucoma, a condition that occurs when fluid in the eye does not drain, and the increased pressure can damage the optic nerve. Half of the 3 million Americans, however, do not know they have glaucoma because they do not have their eyes tested often enough, preferably every year or two. As of January 1, 2002, Medicare covered an annual dilated eye examination for persons at high risk of glaucoma. High risk is defined as those with diabetes, a family history of glaucoma, and African Americans. Glaucoma is 5 times more likely to occur in African Americans.

There are a wide variety of low-vision aids available, such as large-type books, talking clocks, high-intensity lamps, magnifiers, and computer adapters. These devices are not covered by insurance. A good resource for locating effective and affordable aids is the nonprofit Lighthouse International (800-829-0500; e-mail info@lighthouse.org; http://www.lighthouse.org). Another resource is Prevent Blindness America (800-331-2020; http://www.preventblindness.org), which can help persons find support groups in their area and provide other services.

ORAL HEALTH

The surgeon general in 2000 reported that Americans' mouths are in the best shape ever. Regarding older adults, there has been a steady decline in the level of edentulism (loss of all teeth) among successive cohorts of older adults. Nonetheless, about one-third of persons aged 70 and older are still afflicted (Marcus et al., 1996).

As the American population ages, visits to physicians increase, but visits to dentists decrease (Ettinger, 2001). Only 43% of older Americans reported a dental visit in 1996. The lack of reimbursement by a third-party payment system for dental care is no small factor in this neglect. As

older adults retire, they lose employer-based dental insurance and, at the same time, deal with a reduction in income.

The surgeon general reported that there are widespread oral health problems among low-income older persons (Allukian, 2000), including one-third with untreated dental caries. Older adults are 7 times more likely to have oral cancer, and older adults with periodontal disease are 53% more likely to have experienced weight loss than those with healthy gums and teeth (Weyant et al., 2004).

Professional oral health care may be particularly important in nursing homes. A study of older residents in two nursing homes reported that professional oral health care given by dental hygienists was associated with a reduction in the prevalence of fever and fatal pneumonia (Adachi et al., 2002). Other researchers suggest that aggressive oral care might reduce nursing home pneumonias by as much as 40% (Terpenning, 2005).

One public policy initiative that could have positive consequences for older adults is the promotion of water fluoridation in the 38% of communities that are not yet treating their public water supplies. A study of more than 3,000 women aged 65 and older reported that fluoridation not only enhanced the prevention of dental caries, but it also appeared to increase bone density in the hip and spine and slightly reduce the risk of fractures at these sites (Phipps et al., 2000).

Interestingly, dental X rays can show the beginnings of low skeletal bone mineral density (Taguchi et al., 2006). Women may be more likely to take a trip to the dentist's office than get checked for osteoporosis by their physician.

DIABETES

Type II diabetes (previously called adult-onset diabetes until it started showing up in teenagers) is the inability of the pancreas to produce sufficient insulin, the hormone that allows glucose to enter and fuel the body's cells. By the age of 75, about 25% of the U.S. population has diabetes (Meneilly, 2005). One study of 3,000 individuals aged 70–79 revealed that 24% of the older adults had diabetes, one-third of whom were undiagnosed (Franse et al., 2001). This prevalence is due to an increase in obesity and to an increase in the number of older minorities (Asians, Hispanics, and African Americans), who have higher incidence rates.

At its 1997 national meeting the American Diabetes Association (ADA), with the endorsement of the NIH, recommended that Americans over age 45 have their blood sugar screened every 3 years. A U.S. Preventive Services Task Force 2003 update concluded, however, that there is

insufficient evidence to recommend for or against routine screening for diabetes mellitus in asymptomatic adults. Less controversial was the decision by the ADA to lower the blood sugar screening threshold for diabetes from 140 to 126 mg of glucose per deciliter of blood. This new level can detect many more cases when diet and exercise can prevent or delay the disease.

In 2002, a new term was coined, *prediabetes*, that refers to an even lower fasting blood glucose level than 126 mg/dl. Prediabetes refers to the range between 100 and 125 mg/dl, with an estimated 41 million Americans falling within this range. Through diet and exercise, prediabetics can reduce by 60% the number who will eventually develop the more serious disease.

One study compared diet, exercise, and weight loss with the drug metformin (Glucophage) for preventing the onset of diabetes. The changes in lifestyle habits were nearly twice as effective as the medication, particularly in people aged 60 and over, who were little helped by the drug (Knowler et al., 2002). Another study also concluded that type II diabetes can be prevented by changes in lifestyle among high-risk older subjects (Tuomilehto et al., 2001). Once diabetes is diagnosed, high-intensity resistance training improves glycemic control in older persons (Dunstan et al., 2002).

Medicare prevention policy forged a compromise. It does not routinely cover diabetes screening, consistent with the recommendation by the U.S. Preventive Services Task Force 2003 update, but it does reimburse for an annual screening for those who are overweight; who have a family history of diabetes; or who have hypertension, dyslipidemia, or prediabetes. For those with prediabetes, screening can be every 6 months, and patients with diabetes can receive outpatient self-management training that includes nutrition and exercise education.

DEPRESSION

Lifetime prevalence of depressive disorders ranges from 5% to 17% (Williams et al., 2002a) and is projected to become the second leading cause of disability worldwide by the year 2020 (American Psychiatric Association, 1994). Despite its prevalence and economic significance (Murray & Lopez, 1996), studies have shown that usual care by primary care physicians fails to identify 30% to 50% of depressed patients (Simon & Von Korff, 1995).

The U.S. Preventive Services Task Force issued an updated guideline in May 2002, advising that physicians begin screening adults for depression in the clinical setting. This revises the Task Force's 1996 recommendation, which encouraged clinicians to remain alert for signs of depression but did not recommend for or against regular formal screening. The Task Force's update concludes that there is good evidence that

screening improves the accurate identification of depressed patients in primary care settings and that treatment of depressed adults identified in these settings decreases clinical morbidity.

There are a number of formal screening tools available, but asking two simple questions may be as useful as administering longer instruments: "Over the past 2 weeks have you: a) felt down, depressed, or hopeless? b) felt little interest or pleasure in doing things?" (Whooley et al., 1997). An affirmative response to these questions may indicate the need for more in depth diagnostic tools.

Screening adults for depression should take place only when adequate diagnosis, treatment, and follow-up are in place. Treatment may include antidepressants, cognitive behavioral therapy, or brief psychosocial counseling, alone or in combination (Pignone et al., 2002).

OTHER MEDICAL (AND DOG) SCREENINGS

For better and for worse, new medical screenings are developed on an ongoing basis. On a positive note, a quick, finger-stick blood test might detect ovarian cancer before it becomes deadly (Petricoin et al., 2002); a simple urine test can check for an enzyme that is associated with bladder cancer in early, curable stages (Sanchini et al., 2005); and C-reactive protein, a chemical in the blood that indicates inflammation, may predict heart attacks and strokes (Ridker et al., 2002).

On a negative note, unnecessary full-body CT scans became increasingly popular for a while and carried a hefty price tag. If this type of scan was widely carried out, the number of false alarms triggered by it would overwhelm the health care system ("Whole-Body Screening," 2002). In one study, 86% of 1,192 patients had at least one positive finding at a for-profit imaging center, suggesting potential medical follow-ups (Furtado et al., 2005). Full-body CT scans also produce a surprisingly large dose of radiation.

During a 3-year period, from 2001 to 2004, tens of thousands of people paid $1,000 or more out of pocket for a full-body scan that had been popularized by Oprah Winfrey and through a variety of television shows, newspapers, magazines, and Web sites. Fortunately, the fad was quickly reduced to a trickle of customers, and such scans are now rarely ordered by physicians or covered by insurance.

Implementation of a routine thyroid screening is often discussed but is still not recommended, despite the availability of a simple, inexpensive blood test (Surks et al., 2004; USDHHS, 1996). A large survey revealed that about 4% of the population had subclinical hypothyroidism (Hollowell et al., 2002), but experts disagree about whether this subclinical condition should be treated (Brett, 2002).

Finally, are screenings going to the dogs? In 1989, two London dermatologists described the case of a woman asking for a mole to be cut out of her leg because her dog would constantly sniff it. One day, the dog tried to bite it off. It turned out that she had a malignant melanoma that was caught early enough to save her life. Similar cases have been reported by a variety of other physicians in regards to dogs detecting skin cancer.

An experiment was set up to determine if dogs could correctly select urine from patients with bladder cancer. The dogs were briefly trained and were able to identify the cancer 41% of the time, compared with 14% expected by chance alone (Willis et al., 2004). In another experiment using breath samples, dogs were accurate with identifying lung cancers 99% of the time and breast cancers 88% of the time (McCulloch et al., 2006). Cancer tumors exude tiny amounts of alkanes and benzene derivatives not found in healthy tissue, and it is believed that a dog's sense of smell is generally 10,000–100,000 times better than a human being's.

Nonetheless, if your dog starts sniffing you repeatedly in a specific area, it is probably not a good idea to begin chemotherapy right away. I would suggest taking a bath first, and if that does not work, head for an open-minded physician and see if a biopsy is recommended.

IMMUNIZATIONS

For many years the estimated annual number of U.S. deaths attributed to influenza and pneumonia combined ranged from 20,000 to 40,000. In 2003, however, using improved statistical models, the Centers for Disease Control and Prevention's (CDC) new estimate was that 36,000 persons die from flu-related complications alone each year. This dramatically revised estimate is due in part to the aging of the U.S. population and the fact that more than 90% of the deaths from flu and pneumonia occur in people aged 65 and older.

Researchers report that widespread use of the influenza and pneumococcal vaccinations can prevent up to 60% of these deaths among older persons (Nordin et al., 2001). One study reviewed data from 286,000 persons over the age of 65 and found that an older person's chance of being hospitalized for heart disease or stroke is sharply reduced during the flu season that followed a vaccination (Nichol et al., 2003). Also, in elderly patients hospitalized with community-acquired pneumonia, prior pneumococcal vaccination reduced respiratory complications, decreased time spent in the hospital, and improved survival (Fisman et al., 2006).

The pneumococcal vaccine should be administered to persons aged 65 and older at least once during a lifetime, with possible revaccination for older persons with severe comorbidity after 5 years. Pneumonia is 3 times more prevalent among those aged 65 and over than among younger persons.

There was a substantial increase in pneumococcal vaccinations between 1989 and 1998. Only 10% of older adults in the community had received the pneumococcal vaccination in 1989, despite the fact that pneumonia at that time accounted for an average of 48 days of restricted activity per 100 people aged 65 and older (NCHS, 1990a). By 1997, due in large measure to the onset of Medicare reimbursement, 46% of Medicare beneficiaries had received the vaccine. And according to a General Accounting Office report, this rate jumped to 55% in 1999.

Nonetheless, almost half of older adults remained unvaccinated, and there was considerable racial disparity. In 1999, 57% of Whites received a pneumonia vaccination, compared with 36% of African Americans and 35% of Hispanics (Mieczkowski & Wilson, 2002).

The influenza vaccine should be administered annually to all persons aged 65 and older, though an advisory panel at the CDC recommended, in April 2000, that flu shots be administered beginning at age 50. Two years after this recommendation, only about one-third of individuals in the age group 50–64 were vaccinated. Health care providers working with high-risk patients should also receive the influenza vaccine. In 2004, however, only 36% of health care workers received a flu shot. Unvaccinated workers can be a major threat to the health of children (6–23 months), older adults, and the chronically ill.

Between 1972 and 1982, the death rate during six flu epidemics was 34–104 times higher among older adults than younger persons. Yet only 20% of older adults in the community received influenza vaccines in 1989. This percentage, however, increased to 68% by 1999, several years after Medicare began paying for influenza shots for the nation's older and disabled populations.

Among older African Americans, however, the influenza vaccination rate was 21% lower than among Whites (Schneider et al., 2001), with about 70% of Whites receiving flu shots and only 49% of African Americans being immunized ("Medicare Screenings," 2002).

To increase the compliance rate, the federal government, in 2002, approved standing orders for annual flu and pneumonia vaccinations in nursing homes, hospitals, and home health agencies that serve Medicare and Medicaid beneficiaries. Standing orders means that the shots can be administered by a nurse without the need for a physician to write a new order. In 2005, influenza and pneumococcal vaccinations became mandatory for nursing home residents (unless contraindicated or refused by the resident) but, unfortunately, not for nursing home care workers.

From time to time, immunizations in America do not go smoothly. In the 2000–2001 influenza season, for instance, flu vaccinations were characterized by delays and shortages. The distribution system was uneven, resulting in some providers receiving plenty of vaccine and others

receiving none. Moreover, the price of the flu and pneumonia vaccines had increased, but Medicare reimbursement had not. Consequently, some providers resisted participating in vaccination programs. These and subsequent challenges will arise periodically and will need to be resolved before vaccination rates can meet the Healthy People 2010 goal of 90% of older adults vaccinated. Until then, rates will continue to vary, with 65% of older Americans getting a flu shot in 2003 and 59% in 2004.

In 2006, the NIH became interested in strengthening flu shots for the elderly, either through higher vaccine doses or by adding immune-boosting compounds. These revved-up versions of flu vaccine for older adults were inspired by preliminary evidence that suggested that the standard flu vaccine each year was less effective in the people who need it most: less healthy seniors (L. Jackson et al., 2006; Jefferson et al., 2005). One study reported that an experimental high-dose influenza vaccine (up to 4 times the normal dose) stimulated better antibody response in older adults and was safe and well tolerated (Keitel et al., 2006).

Tetanus vaccine is an immunization recommended for all adults, including older adults. This disease is called lockjaw because the first symptom is often a contraction of muscles around the mouth. After a primary series of three doses of the tetanus–diphtheria toxoid, a booster shot should be administered at least once every 10 years. Medicare does not cover tetanus immunization as there are only about 50 tetanus cases reported each year in the United States. About 70% of cases leading to death, however, occur in persons over age 65.

A vaccine called Zostavax was approved by the Food and Drug Administration in 2006 to reduce the risk of shingles in people aged 60 and older. Zostavax is roughly equivalent to 14 doses of the pediatric chicken pox vaccine. The risk for shingles—a very painful itch that starts at the spine and travels across the midsection on one side of the body, and is followed up by a belt of blisters—increases with age. For those over age 85 the risk is close to 50%. The vaccine's use in those who already have had shingles has not been studied.

ASPIRIN PROPHYLAXIS

The U.S. Preventive Services Task Force reports that there is insufficient evidence to recommend for or against routine aspirin prophylaxis for the primary prevention of myocardial infarction in asymptomatic persons. Although aspirin reduces the risk of heart attack in men 40–84 years of age, there are significant adverse effects, and the balance of risk versus benefit is uncertain. Side effects are gastrointestinal upset and bleeding disorders, gout, and kidney stones.

Nonetheless, the use of aspirin at least every other day by healthy individuals older than age 35 has increased by 20% between 1999 and 2003 (Ajani et al., 2006). There also appears to be an interesting difference in the effect of regular aspirin use on men versus women. Men are more likely to reduce the risk of heart attack, while women are more likely to reduce the risk of stroke (Berger et al., 2006). For a subset of women who were aged 65 and older, though, aspirin appeared to lower the risk of heart attack as well.

Because of the risk of gastrointestinal bleeding, no one should start taking low-dose aspirin on a regular basis without first consulting a physician.

THE POLYPILL

Much controversy was created by a proposal from Wald and Law (2003) for a single daily pill to be recommended for all persons aged 55 and over that would contain a statin, three half-dose antihypertensives, aspirin, and folic acid. The authors suggested that such a pill, universally implemented for older adults, could reduce cardiovascular disease with minimal adverse side effects. Their formulation was based on the results of meta-analyses of randomized trials and cohort studies. The authors concluded that the polypill would be acceptably safe and "with widespread use would have a greater impact on the prevention of disease in the Western world than any other single intervention."

An opposing argument could be made that interventions impacting on lifestyle would be more powerful than a polypill and have no side effects. Interventions to increase physical activity and to improve dietary habits, along with public policies regarding food (e.g., banning vending machines in public schools) and sedentary behaviors (e.g., urban planning to encourage sidewalks and places to walk to) could provide a nonmedical alternative for the prevention of disease and the promotion of health (see chapter 14, Public Health).

A team of researchers from the Netherlands suggested that a polymeal would be better than a polypill (Franco et al., 2004). The long title of their article provides a good summary of it: "The Polymeal: A More Natural, Safer, and Probably Tastier (Than the Polypill) Strategy to Reduce Cardiovascular Disease By More Than 75%." The polymeal consists of wine, fish, dark chocolate, fruits, vegetables, garlic, and almonds.

Proponents of nonmedical approaches believe that government policies and research funding for the promotion of health through lifestyle changes have been inadequate to date. Opponents argue that nonmedical approaches have been tried and proved to be inadequate at best (Green, 2005). This same argument—medical versus lifestyle perspective—plays out in the policy arena of Medicare prevention.

MEDICARE PREVENTION

If you review the U.S. Preventive Services Task Force recommendations inserted into most of the specific screening summaries in this chapter, you will undoubtedly conclude that the Task Force recommendations and a summary of Medicare prevention coverage (see Table 3.1) are often out of sync. Much of the content of Medicare prevention coverage appears to have been influenced substantially by medical lobbyists advocating for specific segments of the medical industry (e.g., oncology, urology, orthopedics) than by policy derived from evidence-based medicine (Haber, 2001a, 2005b). While the movement into Medicare prevention—with substantially expanded coverage in 1998 and 2005—undoubtedly benefits older Americans, the bottom-line question remains: What is the most effective and cost-effective way to promote health and prevent disease through the Medicare program?

TABLE 3.1 Medicare Prevention

One-Time "Welcome to Medicare" Physical
Within 6 months of initial enrollment; no deductible or copayment.
Physician takes history of modifiable risk factors (coverage makes special mention of depression, functional ability, home safety, falls risk, hearing, vision); height and weight; blood pressure; EKG.
Cardiovascular screening
Every 5 years; no deductible or copayment.
Ratio between total cholesterol and HDL, triglycerides.
Cervical cancer
Covered every 2 years; no deductible, copayment applies.
Pap smear and pelvic exam.
Colorectal cancer
Covered annually for fecal occult test; no deductible or copayment.
Covered every 4 years for sigmoidoscopy or barium enema; deductible and copayment apply.
Covered every 10 years for colonoscopy; deductible and copayment apply.
Densitometry
Covered every 2 years; deductible and copayment apply.
Diabetes screening
Annually, those with prediabetes every 6 months; no deductible or copayment.
Not covered routinely, but includes most people aged 65+ (if overweight, family history, fasting glucose of 100–125 mg/dL [prediabetes], hypertension, dyslipidemia).
Mammogram
Covered annually; no deductible, copayment applies.
Prostate cancer
Covered annually; no deductible or copayment.
Digital rectal examination and PSA test.

(*continued*)

TABLE 3.1 *(continued)*

Smoking cessation
Two quit attempts annually, each consisting of up to four counseling sessions. Limited to those with tobacco-related diseases (heart disease, cancer, stroke) or drug regimens that are adversely affected by smoking (insulin, hypertension, seizure, blood clots, depression). Clinicians are encouraged to become credentialed in smoking cessation.

Immunization
No deductible or copayment.
Influenza vaccination covered annually; pneumococcal vaccination covered one time, revaccination after 5 years dependent on risk.

Other coverage
Diabetes outpatient self-management training (blood glucose monitors, test strips, lancets; nutrition and exercise education; self-management skills: 9 hours of group training, plus 1 hour of individual training).
Medical nutrition therapy for persons with diabetes or a renal disease: 3 hours individual training first year, 2 hours subsequent years.
Glaucoma screening annually for those with diabetes, family history, or African American descent.
Persons with cardiovascular disease may be eligible for comprehensive prevention programs by Drs. Dean Ornish or Herbert Benson: coverage 36 sessions within 18 weeks, possible extension to 72 sessions within 36 weeks.

Frequency and duration
These are *estimates* of what researchers recommend, relying most heavily on the U.S. Preventive Services Task Force recommendations, but not exclusively on them.
Blood pressure: begin early adulthood, annually, ending around age 80.
Cholesterol: begin early adulthood, every 2–3 years, ending around age 80.
Colorectal cancer: begin age 50, every 5–10 years for colonoscopy, ending around age 80.
Mammogram: begin age 40, every year or two; begin age 50 annually; begin age 65 every 2 years, ending around age 80.
Osteoporosis: begin early adulthood for women (no frequency recommended); every 2–3 years after age 65 for women, less frequently for men.
Pap test: begin with female sexual activity, two consecutive normal tests, followed by every 3 years; two normal consecutive annual screenings around age 65, then discontinue.
Prostate cancer: do not do routinely, except if there is a family history or African American heritage.

Definitions
Hypercholesterolemia: LDL above 160/130/100 (depending on risk factors); HDL below 40; ratio (total/HDL) 4.2 or above.
Diabetes: fasting glucose 126 mg/dL and above; prediabetes, 100–125 mg/dL.
High blood pressure: over 140/90; between 120/80 and 140/90 is prehypertensive.
Osteopenia: 1–2.5 standard deviations below young adult peak bone density.
Osteoporosis: 2.5 standard deviations or more below young adult peak bone density.

Mammogram screening is an example of an important benefit unduly influenced by medical lobbyists. This screening benefit was increased to *annually* for all Medicare-eligible women aged 40 and older. The U.S. Preventive Services Task Force noted, however, that the more frequent annual mammogram screenings for women after age 65 will be expensive and may not result in reduced mortality. The Task Force also raised the prospect of more false-positive results and additional biopsies.

Bone-mass screening procedures covered by Medicare were initially approved for only high-risk women aged 65 and older. High risk was vaguely defined as estrogen-deficient women at clinical risk for osteoporosis. Eventually, this was interpreted as all women who are Medicare-eligible. While the National Osteoporosis Foundation hailed the benefit, opponents argued that it is an expensive test (particularly the dual-energy X-ray densitometry) and, for most women, will lead to a recommendation that could have already been made prior to the screening: engage in weight-bearing exercise, good nutritional practices, and calcium and vitamin D supplementation. An opposing argument—and one that I have come to support—is that universal bone-mass screening after age 65 is a good idea. A low densitometry reading will motivate an older person to engage in risk-reduction behaviors.

Little criticism can be leveled at the Medicare benefits for colorectal cancer screenings for all Medicare-eligible individuals aged 50 and over, now that the colonoscopy has been included. One could argue, though, that the colonoscopy might be more effective every 5 years than 10 years and that the sigmoidoscopy, barium enema, and fecal occult test are not worth the expense. However, the most relevant issue—how to increase the exceptionally low compliance rate for colorectal cancer screening—is not being addressed by Medicare policy makers.

Another example of the effects of lobbying is the coverage for an annual prostate cancer screening for Medicare-eligible men over age 55. This coverage is made available despite the lack of evidence that early detection among older men improves survival. Prostate screening also carries a strong risk of screening results leading to expensive and invasive interventions, while the original condition may have posed no harm during the individual's life expectancy.

The expansion of Medicare prevention benefits for 3 million Medicare beneficiaries with diabetes is not controversial and begins moving policy into the risk reduction counseling area. Diabetics receive outpatient self-management training services, and the program was expanded to include up to 10 hours annually to help control blood sugar, though only 1 of the 10 hours was targeted toward nutrition education.

An estimated 4.5 million Medicare recipients with diabetes (and 110,000 persons with kidney disease) are eligible to receive additional

individualized medical nutrition therapy to help them eat better to control their disease or to lose weight. Medicare recipients are now able to meet with a registered dietitian to discuss food intake and exercise, review lab tests, and set goals for making dietary changes. Health promotion advocates were hoping this benefit for diabetes patients would pave the way for routine nutrition counseling for other Medicare recipients.

Additional examples of medical lobbying influence include (a) coverage of an initial EKG—the U.S. Preventive Services Task Force 2004 update concluded that EKG evidence is inconclusive in how it would change the course of treating patients and that false-positives leading to unnecessary invasive procedures and overtreatment could outweigh any benefit of the test; and (b) no upper age limits are included for biannual coverage for Pap smears, 5-year coverage for cholesterol and triglycerides, and decade coverage for colonoscopy. In short, Medicare prevention benefits emphasize medical screenings and tend to err on the side of excess frequency. It is not unfair to question whether prevention from a Medicare perspective is too biomedicalized and pays insufficient attention to counseling for risk reduction.

Analysts have argued that prevention resources are limited, and we should reexamine policy that is so heavily focused on medical screenings (Mason, 2001; Napoli, 2001). Perhaps it would be more effective and cost-effective to focus on counseling in the areas of sedentary behavior, inadequate nutrition, smoking and tobacco use, and alcohol abuse (Haber, 2001a, 2005b). This topic will be addressed in chapter 4, Health Behavior, and chapter 14, Public Health.

To end on an encouraging note, Medicare prevention is moving in positive directions, with coverage for (a) nutrition therapy for persons with diabetes and kidney disease; (b) an initial physical examination that includes prevention counseling; (c) smoking cessation—for those who have an illness caused by or complicated by tobacco use (see chapter 9, Selected Health Education Topics); and (d) comprehensive health promotion programs developed by Dean Ornish and Herbert Benson, for beneficiaries with heart problems (see chapter 8, Complementary and Alternative Medicine).

The next step is to publicize these prevention programs. After 2 years, for instance, only 2% of seniors eligible for the "Welcome to Medicare" physical exam took advantage of this opportunity.

A Final Word

Medical screenings and immunizations are undeniably important tools for disease prevention, but the data collected by the U.S. Preventive Services Task Force (1996) resulted in a surprising conclusion: "Among the most

effective interventions available to clinicians for reducing the incidence and severity of the leading causes of disease and disability in the United States are those that address the personal health practices of patients" (p. xxii).

Stated another way, "conventional clinical activities (e.g., diagnostic testing) may be of less value to clients than activities once considered outside the traditional role of the clinician" (USPSTF, 1996, p. xxii), namely, counseling and patient education.

To be fair to clinicians, a study reported that the average patient in a family practice waiting room needs 25 preventive services (Yarnall et al., 2003). Using a base of 2,500 patients, the researchers conservatively estimate that 7.4 hours a day would be needed to provide the recommended preventive care in a typical practice. The authors recommend a team approach toward prevention, involving health educators and other practitioners in the clinic and collaboration with health-promoting practitioners in the community.

Even if these collaborative recommendations are pursued, disease prevention and health promotion interventions require prioritizing among the many available medical screenings, immunizations, and risk reduction counseling areas.

QUESTIONS FOR DISCUSSION

1. Which is more scientifically rigorous, the *Guide to Clinical Preventive Services* or the *Clinician's Handbook of Preventive Services*? Why?
2. If a screening test has good sensitivity, specificity, and reliability, will it be effective? Explain your answer.
3. Why were so many women for so long misled by the HRT research that influenced physician recommendations?
4. What would you say to a client who is asking you for advice on whether to get a mammogram or to start hormone replacement therapy? Why did you answer that way?
5. What do you think is the single most important fact or idea contained in the blood pressure section, and why?
6. There has been a trend toward lowering the threshold of medical screenings like blood pressure, blood glucose, and cholesterol. This can allow people to take action before the problem gets too serious. It can also lead to more people being on medications and the greater medicalization of health care. What do *you* think? Explain your answer.
7. Densitometry can motivate older women to engage in weight-bearing exercise and consume more calcium and vitamin D.

Or we can save the expense of this screening and apply it to advising and assisting all older women to increase (or maintain) exercise and improve (or maintain) diet. What do *you* think? Explain your answer.

8. What do you believe is the best way, at this time, to increase compliance with colorectal cancer screening recommendations? Why?
9. The author notes disadvantages associated with the more complicated cholesterol guidelines, but perhaps they foster better collaboration between the patient and the physician. What do *you* think? Explain your answer.
10. Even if you felt that older men *in general* should not be routinely screened for prostate cancer, what would *you* do if you were a 65-year-old male? Why?
11. What are the new federal guidelines for being prehypertensive? If your blood pressure readings were 124 systolic over 82 diastolic, would you be motivated to take any action? Why?
12. What was the most interesting fact or idea you learned in each of the sections on hearing, vision, and oral health? Why?
13. What do you believe accounts for the racial disparity in immunization rates, and what can be done about it?
14. Based on cost to the nation, the benefits for any one individual, and the possibility of false-positives and its consequences, how often do you think women between the ages of 40 and 50 should have mammogram screenings? Why?
15. What is the author's opinion of the Medicare prevention coverage? Do you agree? Explain your answer.
16. Examine one other topic in this chapter that you found interesting and has not been explored when answering the previous questions. Why did you find this interesting?

CHAPTER FOUR

Health Behavior

In their article "The Case for More Active Policy Attention to Health Promotion," McGinnis and colleagues (2002) examine the impact of five spheres of influence on early deaths in the United States. Using the best available data, their estimates are as follows:

environmental exposures (5%)
shortfalls in medical care (10%)
social circumstances (education, poverty; 15%)
genetic dispositions (30%)
behavioral patterns (40%).

McGinnis and colleagues observe that behavioral patterns are not only the most important contributor to early death, but also to quality of life. They noted that "what we choose to eat and how we design activity into (or out of) our lives have a great bearing on our health prospects" (McGinnis et al., 2002, p. 82).

And yet more than 95% of the $2 trillion we spend on health care in America goes to medical care, less than 5% to prevention, and only a miniscule amount of that is allocated to improve health behavior patterns. This budgetary allocation may seem out of balance to the health-conscious reader, but it is undeniably good for certain businesses and practitioners, such as medical institutions, medical professionals, tobacco growers, alcohol producers, food manufacturers, and advertising companies.

The health education profession, in contrast, is a modest industry, with practitioners who toil away in relative obscurity. There are few millionaires and few lobbyists who seek concessions from congressional leaders. As a consequence, the health care industry in America is primarily a medical care industry dominated by medical practitioners. In this chapter, however, I will focus on the role of health educators in the health

care industry—and most important, their potential role in changing health behaviors. The topics that will be examined are health behavior assessments and interventions and health behavior theories.

HEALTH BEHAVIOR ASSESSMENTS AND INTERVENTIONS

Health Risk Appraisals

In comparison to specific medical screenings, which tend to be the focus of research studies and clinical interventions, health risk appraisals and other health behavior assessments are typically comprehensive in scope and are implemented in nonmedical settings in the community. Health promotion advocates in the community believe that clients get a broad, holistic perspective through a comprehensive health behavior assessment and a sense of the priority areas that they may want to work on.

This big picture, though, may also discourage persons who discover an array of lifestyle risk factors that need attention. A good health assessment may be broad in scope, but it also has to guide the client who is able and willing to begin with one achievable health behavior change.

The most common example of a comprehensive health assessment is the health risk appraisal (HRA) instrument that began in work settings and is now implemented in a variety of community settings. HRAs became accepted in the workplace in the 1970s and continue to inspire widespread utilization. During the 1970s and 1980s, the HRAs were used primarily by employers to give feedback to their employees on their major health risks. Some companies demonstrated cost savings through the utilization of HRAs (Uriri & Thatcher-Winger, 1995). It was estimated that about 30% of workplaces utilized HRAs in the 1990s, and the number of instruments that they had to choose from had grown to several dozen.

By the late 1980s, health risk appraisals were adapted to the characteristics of older adults in the community (Uriri & Thatcher-Winger, 1995). A program like Senior Healthtrac, based in San Francisco, reached out to 300,000 individuals nationwide who were aged 55 and older, through Blue Cross and Blue Shield plans and Medicare supplemental coverage programs. Senior Healthtrac distributed a Senior Vitality Questionnaire and followed up with a Personal Vitality Report that included an individual's vitality age, which may be younger or older than an individual's chronological age. The Vitality Report noted an individual's risk for cancer, heart disease, emphysema, cirrhosis, and arthritis compared to that of other persons of the same age and sex and suggested lifestyle changes to reduce specific risk factors.

The applicability of HRAs to older adults, though, is still unresolved (RAND Corporation, 2003). Risk calculations based on younger and middle-aged adults may be inaccurate for older adults, and HRAs tend to focus on premature mortality rather than on lifestyle risk and the progression of illness and disability. The process of evaluating the suitability of HRA instruments for older populations is ongoing.

I reviewed summaries of 20 HRAs, including ones from such well-known organizations as the National Wellness Institute and Johnson and Johnson Health Management. They were being used in work and other community sites, and all claimed to have versions of their instrument that were appropriate for, or adaptable to, specific age groups, ranging from high school to older adults.

Among the instruments that I reviewed, I noted the following:

1. They were computerized and available for commercial use. Most offered individual and aggregate reporting and immediate individual feedback as well as data security.
2. They included, at minimum, medical questions like blood pressure and cholesterol level and health habits like smoking, exercise, and nutrition.
3. There was no consensus on length. Some instruments were deliberately short, about 15 questions; others included upward of 150 questions.
4. They were quantifiable, comparing actual age with an earned age. The apparent assumption is that learning whether your days are running out faster or slower than expected is motivating to clients.
5. They used outdated or debatable scientific evidence. This is not surprising since research results are changing more rapidly than patented HRA instruments.
6. They had a health education component to motivate individuals to change undesirable health behaviors in order to reduce specific risk factors. In most instances this health education component relied on tailored written resource materials, although some provided follow-up by a health educator. In some cases the specific risk factors identified by the HRA were linked to appropriate health programs in the community.

RAND research institute reviewed 267 studies of health risk appraisals, eventually paring them down to 27 controlled studies, 13 of which were randomized controlled trials. They concluded that about 44% of HRA interventions reported positive health outcomes. Among these studies, the more limited the feedback and support to participants, the more limited the beneficial results. Feedback and support ranged from

general written materials, to personalized written materials, incentives, counseling, and opportunities to participate in health programs. Few interventions involved vulnerable or minority samples, and most HRA methodologies designed for older adults were not tested for effectiveness on that population (RAND Corporation, 2003).

Several large corporations that have been leaders in the HRA field have formed an Institute on the Costs and Health Effects of Obesity (http://www.wbgh.com; access Healthy Weight, Healthy Lifestyles). With a focus on weight loss, the corporations are producing written materials on how to create a supportive environment for health behavior change. Among their suggestions are posting nutritional information in cafeterias; motivating workers to choose the stairs by piping music into stairwells and painting attractive designs in them; making sure vending machines offer more nutritious options; and sponsoring weight loss discussion groups.

A Reflective Health Assessment

In contrast to specific responses to a series of narrowly focused risk reduction questions posed by health risk appraisals, Dr. Andrew Weil at the University of Arizona's Integrative Medicine Clinic offers his patients a unique health assessment tool that encourages patient reflection and initiative ("Broadening Your View," 2000). Dr. Weil begins with the questions, What does good health mean to *you*? How do *you* attain it? Additional questions in this vein include, Does your life have meaning to you? Are you happy?

Dr. Weil also asks clients unique questions about specific content areas: What is your relationship with food? What is your relationship with exercise? Do you have satisfying personal relationships? How do you deal with your stress?

When you complete these questions, it is time for you to reflect on your answers. You may never have examined your health in this way. You will explore your attitudes toward your health, identify your health goals, recognize the obstacles to achieving your goals, and discover the personal resources you can assemble to accomplish them.

At the end of these reflections you may have a better understanding of what is contributing to your health problems. You may be more aware of what kind of support you would like from your family, friends, and health care providers. And you may feel more empowered by defining terms for yourself, assessing your own priorities, and designing self-tailored strategies to achieve your health goals.

Stages of Change

Another type of health assessment, one that is typically *not* comprehensive in scope, is the stages of change instrument, also referred to as the transtheoretical model. This popular assessment tool was developed by Prochaska and colleagues (Prochaska & DiClemente, 1992; Prochaska et al., 1988) to help health professionals assess an individual's readiness to change a specific health habit. The specific stages of change are as follows:

1. precontemplation—no intention to change behavior in the foreseeable future
2. contemplation—awareness that a problem exists but no commitment to action
3. preparation—intention to take action in the next month and, typically, unsuccessful action was taken in the past year
4. action—modification of behavior, experiences, or environment for a period from 1 day to 6 months in order to overcome a problem
5. maintenance—an indeterminate period, perhaps a lifetime, in which to actively prevent relapse.

The authors report that relapsing and recycling through the stages of change is the rule rather than the exception, and this process could be viewed as a spiral rather than a linear model. If individuals become more aware of the relapsing phenomenon, they might feel less guilt, embarrassment, and discouragement after an unsuccessful attempt. If health professionals become more aware of the relapsing process, they might be more patient with their clients' attempts at change.

Persons who are in the precontemplation stage are, by definition, not ready for action-oriented programs (Prochaska & DiClemente, 1992). A study of 20,000 people found that only 20% of the population is ready to make a specific behavior change ("Health Promotion Inter-change," 1997). So what happens to those who are *not* ready? According to Prochaska and colleagues (1993), they can be helped through the stages by giving them stage-matched messages and support. Precontemplaters, for instance, are denied immediate support (justified on the basis of limited personnel resources) and are offered literature in the hope that some day they may be more ready to make a behavior change. Contemplators, however, receive information about the pros and cons involved with changing a behavior and support to increase confidence and to explore ways to overcome barriers.

Despite the enormous popularity of the stages of change framework, not everyone is a true believer. One analyst reports that the vast majority of studies testing this model are cross-sectional and not longitudinal. As a consequence, there have been serious flaws in the assignment of an arbitrary time period to a particular stage, overlap in the definition of the different stages, and overpromotion of meager and inconsistent results (Sutton, 2001).

My first reservation with the stages of change framework occurred when I was interviewing several older people in an African American church. They reported to me that they were not interested in exercise and also not interested in joining my soon-to-be-launched church-based exercise program (Looney & Haber, 2001). Had I allowed this initial report of disinterest to result in my labeling them precontemplaters, I would have offered them literature and moved on to seek other people who may have been ready to join my exercise program.

Instead, a few days later, I gave a 20-min demonstration of the exercise program, along with several of my health science students, to a group of older adults who met weekly at that same church. Accompanied by church music, easy banter, humor, and scripture that I read ("to take care of God's temple [the body]" and "above all else, guard your heart for it provides health to a man's whole body"), many people signed up for, and then successfully completed, the 10-week program—including the several alleged precontemplaters!

Another behavioral scientist questioned the ethics of too quickly ignoring the reputed precontemplaters, or postponing interventions with them, when they constitute the sections of the population who have the greatest need. She suggested that this model may lead to discrimination against those who are poor, those who are less educated, and those who are frail (Whitehead, 1997).

An interesting variation on the stages of change framework is to assess different aspects of a particular behavior change. A team of researchers examined the topic of weight loss, and instead of asking people whether they were ready to make changes leading to weight loss, the researchers asked which changes they were most interested in making. Six aspects of weight loss were targeted: dietary fat, portion control, vegetable intake, fruit intake, increasing physical activity, and planned exercise. The researchers found that respondents may have been precontemplaters in some aspects of weight loss, but they were ready to make a change in others (Logue et al., 2000).

Another strategy is to present older persons with different types of potential behavior change goals to choose from. If given sufficiently diverse options, older adults may be more motivated to choose one behavior change that is of high priority to them (Haber, 1996). Here is a

partial list of diverse prevention categories that I have presented to older adults, accompanied by a brief and personalized health assessment in each of the categories (Haber, 2001b):

Complete one of several medical screenings or immunizations.
Increase physical activity level; begin a brisk walking program; join an aerobics, yoga, or Tai Chi class; start a strength-building program; or begin a flexibility routine.
Decrease dietary fat; implement portion control; increase vegetable or fruit intake; or increase fluid consumption.
Initiate a stress management routine.
Establish a sleep hygiene routine.
Implement a fall prevention or home safety plan.
Join a smoking cessation program.
Enroll in a memory improvement course.
Join one of the peer support groups in the area.
Implement an alcohol-moderation plan.

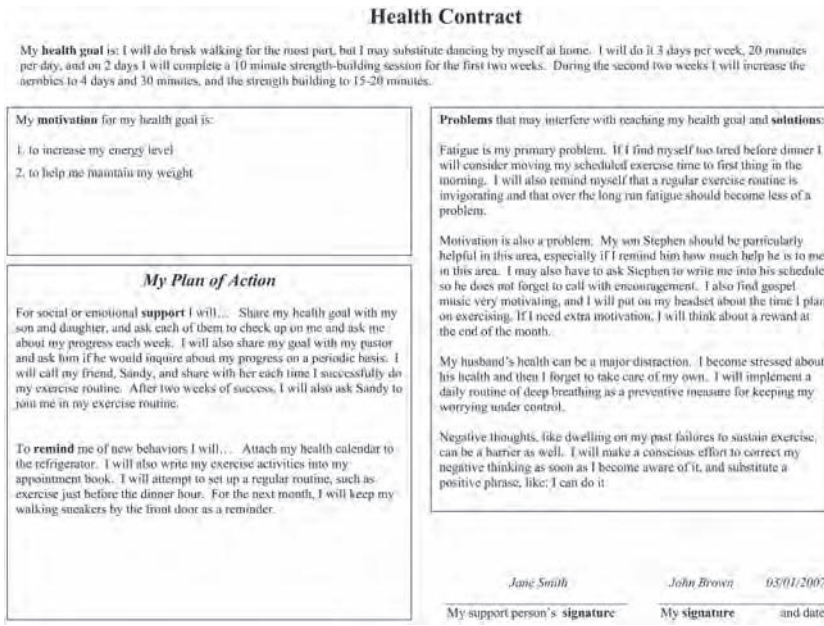
Among 48 older adults who were presented an array of health promotion options, 44 were able to select a health goal. Using the technique of a health contract, 75% achieved substantial success with their goal (Haber & Looney, 2000).

Health Contracts

A health assessment and intervention tool that I use with older adults is a health contract (Figure 4.1)/health calendar (Figure 4.2) technique, which is based on a self-management application of social cognitive theory (Bandura, 1977) that will be examined in more detail shortly.

Self-management refers to clients who, with the help of a health educator, can choose an appropriate behavior change goal and create and implement a plan to accomplish that goal. The statement of the goal and the plan of action can be written into a health contract format. A health contract is alleged to have several advantages over verbal communication alone, especially when the communication tends to be limited in direction, that is, mostly from health professional to client. The alleged advantages of a health contract, which still need additional empirical testing, are that it

1. is a formal commitment that enhances motivation
2. clarifies goals and behaviors and makes them explicit
3. requires the active participation of the client



Health Contract

My **health goal** is: I will do brisk walking for the most part, but I may substitute dancing by myself at home. I will do it 3 days per week, 20 minutes per day, and on 2 days I will complete a 10 minute strength-building session for the first two weeks. During the second two weeks I will increase the aerobics to 4 days and 30 minutes, and the strength building to 15-20 minutes.

My **motivation** for my health goal is:

1. to increase my energy level
2. to help me maintain my weight

My Plan of Action

For social or emotional **support** I will… Share my health goal with my son and daughter, and ask each of them to check up on me and ask me about my progress each week. I will also share my goal with my pastor and ask him if he would inquire about my progress on a periodic basis. I will call my friend, Sandy, and share with her each time I successfully do my exercise routine. After two weeks of success, I will also ask Sandy to join me in my exercise routine.

To **remind** me of new behaviors I will… Attach my health calendar to the refrigerator. I will also write my exercise activities into my appointment book. I will attempt to set up a regular routine, such as exercise just before the dinner hour. For the next month, I will keep my walking sneakers by the front door as a reminder.

Problems that may interfere with reaching my health goal and **solutions**:

Fatigue is my primary problem. If I find myself too tired before dinner I will consider moving my scheduled exercise time to first thing in the morning. I will also remind myself that a regular exercise routine is invigorating and that over the long run fatigue should become less of a problem.

Motivation is also a problem. My son Stephen should be particularly helpful in this area, especially if I remind him how much help he is to me in this area. I may also have to ask Stephen to write me into his schedule so he does not forget to call with encouragement. I also find gospel music very motivating, and I will put on my headset about the time I plan on exercising. If I need extra motivation, I will think about a reward at the end of the month.

My husband's health can be a major distraction. I become stressed about his health and then I forget to take care of my own. I will implement a daily routine of deep breathing as a preventive measure for keeping my worrying under control.

Negative thoughts, like dwelling on my past failures to sustain exercise, can be a barrier as well. I will make a conscious effort to correct my negative thinking as soon as I become aware of it, and substitute a positive phrase, like: I can do it.

Jane Smith — My support person's **signature**

John Brown — My **signature**

03/01/2007 — and date

FIGURE 4.1 Health contract.

4. enhances the therapeutic relationship between provider and client
5. provides a structured means for involving significant others (family, friends, etc.) in a supportive role
6. provides a structured means of problem solving around barriers that previously interfered with the achievement of a goal
7. provides incentives to reinforce behaviors.

The health contract includes a set of instructions that help older adults state a health goal (see Table 4.1); identify benefits that provide motivation; establish a plan of action that helps the older adult remember to do new behaviors and to elicit social support for them; and identify potential problems to achieving the health goal and encourage solutions to overcome these barriers. The contract is signed by the older adult and a support person. Progress is typically assessed after 1 week, and the success of the contract is reviewed at the end of 1 month.

The health contract directions refer to exercise handouts. If you are interested in obtaining copies of some of these handouts, please write your request to me at David Haber, Ball State University, Fisher Institute for Wellness and Gerontology, Muncie, IN 47306.

Health contracts have been applied with varying degrees of success to a wide variety of behaviors, such as drug use, smoking, alcohol abuse,

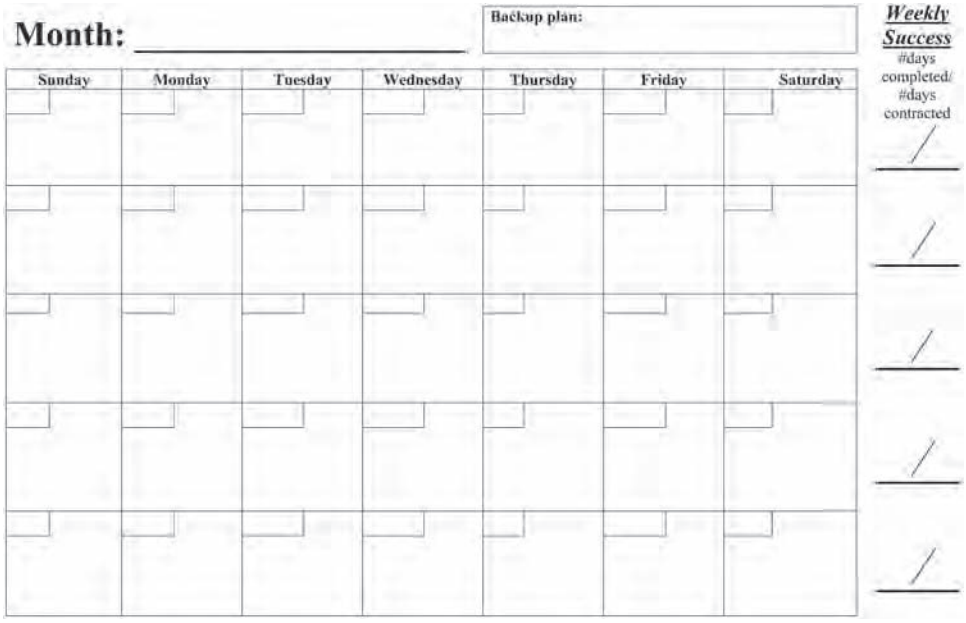


FIGURE 4.2 Health calendar.

nutrition, and exercise (Berry et al., 1989; Clark et al., 1999; Cupples & Stewslow, 2001; Haber, in press; Haber & Looney, 2000; Haber & Rhodes, 2004; Jette et al., 1999; Johnson et al., 1992; Leslie & Schuster, 1991; Lorig et al., 1996, 2000; Moore et al., 2000; Neale et al., 1990; Schlenk & Boehm, 1998; Swinburn et al., 1998). A cardiac rehabilitation program in Canada reported that participants who signed health contracts adhered to their 6-month program more faithfully (65%) than did members of a control group (42%) or people who were asked to sign an agreement but did not (20%; Oldridge & Jones, 1983).

Another study of health contracts came to a predictable conclusion: Specific goals and ongoing feedback led to higher client performance than did vague goals and inconsistent feedback (Latham & Locke, 1991). Other studies have been less predictable. Clients who selected their own health goals, for instance, were not more successful than those who had health goals set by their health providers (Alexy, 1985).

Health contracts can be uniquely designed. Here is a weight loss contract developed by Dr. Joseph Chemplavil, a cardiac endocrinologist in Hampton, Virginia: "I, (patient's name), hereby promise to myself and to Dr. Chemplavil, that I will make every effort to lose my (agreed-upon) weight, and I will pay $1 to Dr. Chemplavil's Dollar for Pound Fund, for every pound of weight that I gain, on each visit to the office, by cash.

TABLE 4.1 Health Contract Directions for Exercise

Exercise motivation. Review list of motivations, and help client choose among "function" and "disease prevention" motives. Record up to three on the health contract.
Encourage the client to write down one motivation and keep it in his or her wallet or post it in a conspicuous place. The client may want to state the motivation out loud on a daily basis. (This may be included under problem/solutions, for bolstering motivation.)

Exercise modality. Review list of exercise modalities, and help client choose one before working on the health goal (community exercise programs, aerobic movement options in the home, walking alternatives, increasing physical activity during course of the day, strength-building routine, flexibility and balance, etc.).

Exercise baseline. If client is sedentary, set a minimum goal; if client is not sedentary, assess his or her baseline. Review last week for exercise/physical activity frequency, duration, and intensity. If last week was not typical, substitute a typical week.
Frequency and duration should be assessed by number of days per week and total minutes each day. Moderate intensity level should be assessed by asking the client to be aware about increases in his or her body warmth and breathing rate during his or her exercise and physical activity.
Aim for a goal of slightly above baseline for the first week, gradually increase over the remaining weeks, and reach modest goal set for the last week of the month.

Health goal. Write a specific statement about what the client will do by the end of the first month and include how often (# days/week); how much (duration/day); and how intense (light/medium).
The goal should be modest and measurable, not more than 5 days a week, half-hour a day, one unit over baseline for the first week, with week-by-week gradations until the health goal is reached during the last week of the first month. Client may choose to exceed these parameters, but not as part of the stated health goal.
Reassess the health goal at the end of the first week. Determine then whether the health educator will contact client during the remaining part of the first month. Set a day and time to meet at the end of the first month to assess progress and possible change for the next month; record the meeting on health calendar.

Plan of action. *Social support*: Review list of social support possibilities. The client should select socially supportive people from the list of categories, select the ways that he or she wants support to be given, and determine the frequency of support he or she wants.
Reminders: Attach health contract to the refrigerator. Have friend or family member call to remind the client. Associate new behaviors with an established habit, like engaging in brisk walking just before dinner. Keep exercise reading materials visible around the house. Keep workout shoes by the door. Exercise at the same time each day. Hang a picture on the wall that shows the client or others exercising.

(*continued*)

TABLE 4.1 *(continued)*

Problems/solutions. Consider previous problems that arose when similar goals were set in the past, or anticipate new problems that might arise in the coming month.
Positive: A solution for the negative thinker is to deliberately verbalize positive thoughts about achieving the health goal on a daily basis. The positive thought can also be written on paper and read, e.g., "I am confident of success, though not perfection."
Reinforcement: Seek praise: Swallow modesty, and tell people about successes and solicit additional praise from them. Seek internal motivation: Pay attention to the signs of feeling better. Seek external motivation: Buy theater tickets, or another nonedible treat, if success is achieved at the end of a week or a month.
Environmental Support: Alter immediate surroundings. Place walking sneakers by the front door, distribute exercise reading material around the house, place exercise band on the coffee table, have pictures on the wall of healthy people exercising.
Stress Management: Stress can sidetrack a person from his or her goal. To manage stress, consider some of the following options: deep breathing, muscle relaxation, meditation, prayer, music, playing with a pet, taking a walk, or doing whatever the client usually does to relieve stress. Schedule these things on a regular basis.
Problem Solve: Brainstorm about problems that arose from past attempts at behavior change. Brainstorm about problems that might arise in the future. Find solutions. Be especially attentive to issues of pain and fatigue. Record under Problems/Solutions.

Signatures. The client signs the contract, along with someone who will be offering support to him or her and is willing to sign the contract as well. If no one comes to mind, the health educator should sign it.

Health calendar. Follow directions for recording activities on the health calendar.

I also understand that I will receive $1 from the same fund for each pound of weight that I lose." Dr. Chemplavil paid out $1,044 to 118 patients, received $166 from 30 patients, and two patients broke even (Kazel, 2004).

Research on health contracts has been limited and often marred by a lack of random assignment to treatment and control groups, small sample sizes, and a lack of replication (Janz et al., 1984). When a study is replicated, the results may be inconsistent, as was the case with studies that compared health contracts that used external versus internal incentives (Strecher et al., 1995).

In addition, there are several uncertainties about the effectiveness of health contracts in terms of ability to identify which components work better than others (e.g., health education, social support, the professional-client relationship, memory enhancement, motivation building,

contingency rewards, etc.); whether contracts work better with one type of person than another; and determining the content and amount of training that is required for health educators or clinicians to administer health contracts effectively.

Even without a definitive body of research, health contracts are widely used. They are simple to administer, time-efficient, and even cost-effective when medical personnel assign the completion of health contracts to a health educator or trained office worker. The health contract can also be effectively taught to students in the classroom who are interested in health education, risk factor counseling, or program development (Haber, in press).

PRECEDE

The PRECEDE framework (Green & Kreuter, 1999) offers a conceptual guideline that can also be used for assessing the readiness of adults to change or maintain a health behavior. PRECEDE is an acronym (perhaps the worst one, in terms of being contrived, in the history of health education) for *p*redisposing, *r*einforcing, and *e*nabling *c*onstructs in *e*ducational/ecological *d*iagnosis and *e*valuation.

Predisposing factors are the knowledge, attitudes, and beliefs a person holds about a health behavior. For instance, if an older woman believes exercise will aggravate her arthritis or cause her unnecessary fatigue, exhortation to exercise will be difficult. Because older adults, especially minority older adults or those over age 80, frequently have lower formal educational levels than adults in general and may be prone to act on less information or on misinformation, it is necessary that health professionals ascertain the barriers to changing health behaviors.

Oftentimes it is not necessary to change a belief, just to add a new one. If older persons believe, for example, that God will take care of their health, the health professional can agree with this assertion and then simply add Sophocles's declaration that "heaven never helps the man who will not act" (Lorig, 1992).

Predisposing factors can be determined by finding out what the clients know about the health area of concern, whether they believe they have a problem, whether they have cultural habits that need to be taken into consideration, and whether they believe behavior changes will help. Older adults, for instance, may believe (or espouse) that because of their age, it is too late to change or to do themselves any good. It may be helpful to respond with specific data on how rapidly health improvements can take place after the age of 65. A significant number of older adults may believe they get all the exercise they need when, according to indicators of exercise frequency, intensity, and duration, they do not.

Enabling factors are those resources necessary for engaging in health-related activities, specifically, access and skill level. Before making recommendations to clients, health professionals need to determine whether there are appropriate programs with experienced leaders who are trained to work with older adults, whether these programs are accessible to those with limited transportation and financial means, whether clients have the necessary skills for modifying their behavior, whether recommended materials needed by older adults are affordable and available, and whether older adults perceive their environment to be safe enough to implement a program.

Practitioners need to be resourceful; it may be necessary to help older adults find accessible programs or gain necessary skills. It is also important that health professionals facilitate ways in which older persons can help themselves, rather than solve problems for clients and thereby foster dependency.

Reinforcing factors refer to the peers, significant others, and health professionals who can support the continuation of new health behaviors. Older adults may be widowed, uninvolved in former occupational groups, and relatively isolated from other persons who are interested in maintaining health. Practitioners ought to consider whether their clients have sufficient family, peer, and professional support to reinforce health behavior changes.

It is best that clients have more than one source of support rather than overburden a single person. A team approach can be useful. Supportive spouses of clients, for instance, can attend a health program with an older adult. Receptionists in the offices of health professionals can play supportive, follow-up roles for clients attempting to change health behaviors. Many health professionals believe they are too busy to be involved in health education, but there are time-efficient strategies that can allow them to play a role.

Green and Kreuter (1999) added an additional step called PROCEED to their PRECEDE model. PROCEED stands for *p*olicy, *r*egulatory, and *o*rganizational *c*onstructs in *e*ducational and *e*nvironmental *d*evelopment. This follow-up step shifts the focus from assessment (the PRECEDE portion of the model) to implementation and evaluation.

10 TIPS FOR CHANGING HEALTH BEHAVIORS

After years of working with health science students to help older adults change health behaviors, it would be outstanding if I could offer the reader a simple formula for increasing the probability of success. Unfortunately, I fall victim to the kitchen sink syndrome that I think also afflicts the

PRECEDE model just described. There are many factors that can influence the success or failure of an individual's attempt to change a health behavior, and research has not helped us much to understand which factors are more important for which types of people.

Therefore over the years I have developed my own framework for helping older adults make a desired health behavior change. *Model* is too sophisticated a word to describe this framework, so I refer to it as the 10 Tips approach. With each older client willing to attempt a behavior change, a review of the 10 Tips is likely to produce strategies that will help the person be successful. From personal experience and pilot research projects I believe this approach will be helpful. And if you examine the health contract/calendar technique that was previously summarized, along with the directions for completing it, you will notice that the 10 Tips are incorporated into this technique.

In order to make these ideas more practical, I will focus on the specific goal of increasing exercise or physical activity. This also happens to be the health goal most likely to be chosen by older adults when given a choice among many options (Elder et al., 1995; Haber & Looney, 2000).

If you work with older adults to change a health behavior and want to commit these 10 Tips to memory, it may be helpful to note that the first 4 start with the letter M, the next five form the acronym PRESS, and the 10th one is a P.S., as in a postscript for a letter you are writing:

1. motivation
2. modest
3. measurable
4. memory
5. positive thoughts
6. reinforcement
7. environmental support
8. stress management
9. social support
10. problem solve.

1. *Motivation.* It is obvious that a person must be motivated to change a health behavior. I have found, however, that the first motivation identified by an older adult is not necessarily the one that lights up the person's eyes with authenticity. If someone is contemplating a reason for overcoming his or her sedentary ways, the person may first come up with a politically correct motivation that elicits the approval of others, including the health educator he or she may be working with, rather than one that is genuinely felt.

For instance, avoiding heart disease may truly be the most motivating reason for someone to take on the challenge of a new exercise routine. Or it may not be. With a little probing on the part of the health educator it may come to light that the person is more passionate about seeking better sleeping habits, or achieving regularity in bowel habits, or increasing energy in order to play longer with the grandchildren. It is best to spend a sufficient amount of time discussing what motivates the client and examining the client's facial expressions for clues to its importance.

To help in this regard, I present the client with a list of possible motivations to choose from. This list includes disease categories that the client may want to avoid or alleviate, such as arthritis, stroke, obesity, hypertension, heart disease, peripheral vascular disease, diabetes, osteoporosis, colon cancer, and depression; and areas of potential function improvement, such as constipation, forgetfulness, low energy, sleeplessness, stress management, imbalance, muscle weakness, stiffness, and fall prevention. Once you feel confident that the primary motivation has been identified, write it down (on the health contract, if that is the technique of choice), and encourage clients to remind themselves about their motivation on a regular basis.

Also, discover the mode of exercise that motivates best. Is it brisk walking, joining an exercise class, increasing physical activity over the course of the day, or something else they are likely to persist with? Motivation is enhanced by enjoying the intervention, or at least by avoiding the more burdensome options. Other sources of motivation, like finding social support, are included among the remaining tips.

2. *Modest*. No one is ever disappointed if he or she exceeds the established goal. And everyone who does not accomplish a desired goal is disappointed. Nonetheless, it is a rare event when an older adult initially declares a goal that is modest enough to elicit the confidence of the health educator that it can be achieved or exceeded. It is common, for instance, for someone to state a goal of exercising every day. It is important, however, to make that daily goal more modest. If a client sets the goal at 4 times a week and meets or exceeds that goal, motivation will be sustained. But if the goal is set as an everyday event, the client then may view exercising on only 4 days that week as a failure, and the motivation to continue may be compromised. As a general rule, I limit stated health goals in exercise to a maximum of 5 days a week.

If the person establishes 60 min of walking a day as the goal, reduce it by half, and give extra credit (perhaps in the form of more praise) for exceeding that goal. Moreover, encourage the sedentary client to build up to the 30-min goal by establishing a target of 10-min sessions for the first week, 20-min sessions for the second week, and 30-min sessions for the third and fourth weeks. Also, allow the client to accumulate 30 min a day, rather than limiting them to only one option of 30 consecutive min.

The opposite problem can also reduce motivation: setting a goal that is too easy and then losing interest in it. This is an unusual occurrence in my experience, especially if the person has identified the appropriate motivation. Once you understand what motivates clients, help them modify their goal during the first month so that it is neither grandiose nor timid.

Finally, a modest goal is short term. I have had success with the 1-month time period, hence the monthly contract/calendar. One month does not extend too far into the future, and with the use of the 1-month calendar, the end is in sight. It is also a long enough period of time to allow for an adjustment of the goal, or the behaviors to achieve the goal, in the first week or two in order to increase the likelihood of achieving success. Even if the 1-month goal turns out to be less motivating than was initially thought, the client may still have a good chance of successfully completing it and carrying over that confidence to another, more motivating health goal the following month.

3. *Measurable.* Measurability has several components to it. How much will the older adult be doing, that is, how many minutes of exercise and on how many days of the week? How intensely will the person be doing it; that is, will he or she establish a brisk walking pace that is twice the pace of the person's normal walking? Will the older adult monitor his or her breathing, making sure that he or she achieves sufficient intensity to produce deep breathing, but not too much intensity so that talking while walking becomes difficult? Will he or she monitor intensity level, building up in the beginning and slowing down near the end?

If the client is doing strength building, how many exercises will the client be doing, how many repetitions in each set, how many sets, how much poundage or what level of elastic band thickness, and how many days each week?

Measurability also implies record keeping, another reason why the contract/calendar is appealing. People are used to recording on their calendars the activities that they need reminding of. I encourage clients to measure and compare the number of days they actually complete the contracted behavior each week with the number of days they had contracted. Monitoring weekly success can lead to greater confidence or to the need to revise the health goal.

4. Memory. Habits take up a large part of the day. We give little thought to many of the activities that constitute our daily routine, and at the same time we rarely forget them. How do we convert a new behavior, one that is a bit challenging to adopt, and make it a new habit? The answer is by enhancing our memory in as many ways as possible.

What cues can be established to help remind us? Do we need to place our walking shoes by the front door? Should we place the health contract on the refrigerator door? Can we ask a family member or a friend to

remind us, or perhaps monitor how well we are remembering to do the new behavior? Can we associate the new behavior with an established one, like walking before dinner every night (perhaps supplementing this associative behavior with a well-placed cue—a note near the dinner table, "Did you walk yet?").

5. *Positive thoughts.* Substitute positive and hopeful thoughts for negative, self-defeating ones. For each negative thought like "I've never been able to maintain exercise routines before," substitute a positive argument: "It may be difficult, but this time, I will persist and accomplish my goal." It may be helpful to record affirmations and place them in conspicuous locations. Other avenues of positive support are to find books or magazines that inspire the client, encourage him or her to associate with persons who model what the client is attempting to accomplish, and to seek friends or acquaintances who are willing to be supportive of the client's goal.

For those who like irony and want to try negative reinforcement to promote positive thinking, keep a rubber band unobtrusively around your wrist, and when a negative thought about the health goal occurs, snap the band and replace the negative thought with a positive one.

6. *Reinforcement.* Most psychologists rely on positive reinforcement rather than negative reinforcement. If successful at the end of the first week, for instance, encourage clients to treat themselves to a movie or purchase a book. If successful at the end of the month, encourage them to buy theater tickets. Reinforcements tend to be more effective when they are in close proximity to the achievement being rewarded.

External reinforcement does not necessarily involve spending money. Praise can be an important reinforcement. Encourage the client to speak highly of himself or herself when the client is doing well with his or her goal, and ask the client to be a bit immodest in his or her solicitation of praise from others. External incentives are helpful to some people and not to others. If the motivation to achieve a goal is strong, the successful behaviors themselves may be sufficiently rewarding. External incentives may, in fact, distract from identifying internal rewards.

Though most psychologists prefer positive reinforcement to negative reinforcement, I heard of a diabolically clever form of punishment that I will pass along. Identify an issue about which a person feels strongly (e.g., euthanasia), and then have the client make out several small checks to an organization that promotes a belief *contrary* to the client's own. When punishments are to be administered, the checks are mailed to the offending organization by someone other than the client.

7. *Environmental support.* Another term for environmental support is *stimulus control*. The best example of it applies to weight management. If you want to contribute to weight maintenance or loss, make sure that the client does not keep junk food in his or her house.

Exercisers, however, also have options in this regard. Placing sneakers by the front door is an example of environmental support. Hanging pictures on the walls of older adults exercising is another example. Distribute reading materials around the house that can be easily accessed and boost motivational levels. Place the stair-stepper in front of the television set to encourage its use. Keep the elastic exercise band on the coffee table as a visible reminder to use it. These are examples of creating a supportive environment, or controlling stimulus, to elicit a more favorable response.

8. *Stress management.* It is the rare person who does not feel stress these days. Not only do we live in a fast-paced society, we are also likely to contend with an automobile driver who is experiencing road rage, cope with a physical disability that frustrates us, struggle with an interpersonal loss, or encounter countless other hassles and annoyances, big and small. Stress is a common barrier to achieving a health goal. If possible, therefore, build into the plan of action a few stress management techniques that can be practiced on a preventive basis, preferably daily.

My favorite stress management technique is deep breathing. I combine that with an everyday occurrence, and stressor, for me: driving—typically done too fast and too aggressively (it is hereditary as I was born into a family of fast-driving New Yorkers). Every time I am driving a car, therefore, I prompt myself to take periodic deep breaths. This not only helps me control my stress but has a wonderful side effect—I am much more likely to drive sanely.

9. *Social support.* This tip is next to last but is definitely not next to least in importance. I suggest some thought be given to social support for every client. For most older adults, social support is desirable; for some it may be essential. It may be a good idea to build social support into the statement of the health goal itself.

Ideally, a person has multiple sources of social support. In addition to a health educator providing support, a spouse or friend can help out in some agreed-upon way. If possible, one can elicit support from a physician or another relevant clinician who may provide ongoing advice and perhaps even emotional support. A pastor might be encouraged to provide periodic encouragement and support by letting him or her know that you are attempting to improve your health. Suggest to your client that the client announces his or her health goal to others in general, such as acquaintances and neighbors, in order to increase the chance that additional people will offer support and approval.

Clients who unexpectedly find the social support of a spouse or friend inconvenient (they do not always want to walk when I want to walk), unreliable (they do not always show up), or overly critical will need to seek other sources of social support. Clients who have physicians who do not muster enthusiasm for their health goals may at least consider the

prospect of finding other, more health-oriented health care professionals. Clients needing more social support than is currently available to them may need to explore the option of joining a class in the community.

Community classes that have a leader of the same age and perhaps gender may provide a role model for the older client. Fellow classmates who are also peers in age, gender, disability, or other relevant variables may also provide extra social and emotional support for behavior change and maintenance.

And yes, there are clients who do not want social support. It is not essential to employ any of the 10 Tips, but a consideration of each is likely to be helpful.

10. *Problem solve*. Finally, chances are good that you have tried to achieve this exercise goal or a similar one before. It typically takes multiple efforts to achieve a goal. Explore what might have gone wrong in the past, or what might go wrong in the immediate future. Spend a little time identifying likely barriers and ways to overcome them. It may turn out that problems are likely to be solved by addressing some of the previous nine tips. Or the client may have to develop his or her own additional tip.

An example of a problem to be solved is the older adult who likes to walk briskly outside, but not in the rain—and who lives in Seattle. This person, of course, needs a back-up plan if he or she does not like to get wet. The plan may include walking in a shopping mall, turning on music and substituting dancing by himself or herself in the living room, or dragging out the vacuum cleaner and doing an energetic sweeping of the entire house.

Another problem—quite common among older adults attempting to increase their exercise levels (Haber & Rhodes, 2004)—involves working around aches, pains, and fatigue. The solution may be to modify an exercise, change the exercise modality, or alter the time the exercise is to be performed. The challenge is to identify problems from the past, imagine possible problems in the future, brainstorm solutions, and increase the chance of success.

HEALTH BEHAVIOR THEORIES

Theories can help us understand what influences health behaviors and, on the basis of these ideas, help us plan effective interventions. Theories may focus on different levels (e.g., psychological, social, institutional, or community) and are subject to change based on new evidence. They may also be applied singly or in combination in order to address behavior change challenges.

A few well-known behavior change theories, along with models and concepts, will be presented to the reader after three brief definitions. A *theory* of behavior change attempts to explain the processes underlying learning. A *model* draws on a number of theories to help people understand a problem. A *concept* is the primary element of a theory or model.

Behavioral and Cognitive Management

Operant conditioning, B. F. Skinner's (1953) model of behavior control, is based on the premise that behavior is determined by its consequences, that is, the kinds of rewards and punishments that follow behavior. Behaviors followed by rewards will increase in frequency, whereas behaviors followed by punishments will decline.

Operant conditioning has spawned a number of principles. Immediate rewards and punishments are much more effective than delayed ones. Intermittent reinforcement is more resistant to extinction than constant reinforcement. And careful observation of conditions that promote or discourage behavior can help shape future behavior by altering those conditions.

Cognitive restructuring, unlike operant conditioning, which focuses on external behaviors, deals with internal changes in thoughts and feelings. Cognitive conditioning advocates assert that behavior and feelings are influenced not by their consequences, but by antecedent thoughts.

The first step toward cognitive restructuring is therefore the identification of undesirable and unrealistic thoughts. The next step is the substitution and regular repetition of positive thoughts in order to shape future affect and behavior. Having positively restructured our thoughts, we engage in fewer cognitive distortions, experience less emotional distress, and perform fewer maladaptive behaviors (Burns, 1980).

Because behavior and cognitive conditioning are practiced universally, they do not appear to constitute a formal learning model. All of us use praise and punishment to influence the behavior of others as well as ourselves, and we often substitute positive thoughts for negative ones, leading us to question why these techniques are labeled *learning models*. Unlike informal methods for influencing others or ourselves, however, formal behavioral and cognitive management techniques are applied systematically. This systematic application of management techniques to behavior change includes the following:

1. C*lear definition of the problem.* A need to exercise is vague. To be able to climb the steps in one's home without having to stop to rest is clear.

2. *Implement a systematic and measurable response to the problem.* To exercise as often as possible is also vague. To exercise 3 times a week, 30 min at a time, and periodically assess a perceived exertion level of moderate intensity is both systematic and measurable.
3. *Implement scheduled evaluations.* To feel we are making progress is vague. To assess the effectiveness of a health plan on a monthly basis and alter the plan of action or the health goal as necessary is explicit.

Healthy Pleasures

In contrast to the behavior and cognitive management theories that are based on structure and self-discipline, there is the theory of healthy pleasures. Advocates of this theory propose that healthy behaviors will be sustained when these behaviors are based on joy, intuition, and self-trust. Advocates suggest that a growing reliance on one's own ability to listen to the body's internal cues for feeling good can replace behavior-change decisions based on scientific guidelines (Field & Steinhardt, 1992). For additional ideas, read *Healthy Pleasures* (Ornstein & Sobel, 1989).

My own bias is that healthy pleasures and management techniques are not an either/or proposition. Joyful and intuitive activities may be appreciated in their spontaneous form, or they can be converted into disciplined routines. These disciplined routines, in turn, can be interrupted by spontaneous activities from time to time, terminated temporarily, or terminated permanently. It is not a question of choosing between healthy pleasures and management strategies—both are important for sustaining motivation.

Self-monitoring can be viewed as a strategy that borrows from both healthy pleasures and management strategies. It consists of the process of systematically recording one's own pattern of behavior for a specific period of time (management technique), but without an effort to discipline oneself or to control one's pattern of behavior (healthy pleasure technique).

One example of self-monitoring is to keep a written record, or diary, of everything you eat and drink (see Table 4.2). During a 3-day period (including a weekend day, if your weekend eating pattern differs from that of weekdays), record what you eat, how much you eat, the quality of what you eat (which corresponds to the rings of the bull's-eye described in chapter 6, Nutrition), where you eat, with whom you eat, what you are doing while you eat, and how you feel when you are eating. Make no effort to control this pattern of behavior, and make no effort to *not* control it. Just be aware of what you are doing and how you are feeling, and record it.

TABLE 4.2 Food Behavior Diary

Food/drink	Amount	Quality	Where	Who	Activity	Mood
Oatmeal Skim milk	Ok Ok	1 1	Living room	Son	Watching T.V.	Energetic
Grilled cheese Water	Too much Not enough	4 1	Kitchen table	Son	Reading newspaper	Anxious
Chips	Too much	4	Living room	Alone	On the phone	Tired
Pepper steak Brown rice Skim milk	Too much Ok Not Enough	3 1 1	Restaurant	Family	Dinnertime/ talk	Excited, happy

Note. The diary is for recording and monitoring the foods and drink that you consume each day so that you can determine what, how, and why you consume what you do. What food or drink did you consume? How much did you eat (not enough, okay amount, too much)? What quality of food did you eat (refers to the four rings of the nutrition bull's-eye in chapter 6: 1 high quality [*foods in the bull's-eye*] to 4 low quality [*foods in the outer ring*]). Where did you eat (home, office, restaurant, school, car, etc.)? With whom did you eat (family member, friend, business colleague, alone, etc.)? What were you doing (activity)? What was your emotional status (happy, sad, anxious, angry, etc.)?

When you carefully monitor your eating behaviors, you not only increase your awareness of what triggers unhealthy eating patterns, but you also often begin to modify them as part of the self-awareness process. You might realize through self-monitoring, for instance, that you eat automatically, and in greater quantity, in front of the television set and when you socialize in certain settings—even when you are not hungry. You may choose to eliminate the former because it provides no extra pleasure, but maintain the latter—allowing yourself to indulge at parties that serve food because they happen infrequently and are most enjoyable.

Social Cognitive Theory

Several researchers have endorsed a broad learning perspective, referred to as *social cognitive theory* (Bandura, 1977, 1997; Rodin, 1986; Rotter, 1954), that addresses both the psychosocial dynamics underlying health behavior and the methods of promoting behavior change. This perspective actually encompasses a wide range of learning theories that include operant and cognitive conditioning, modeling, guided mastery of tasks on a step-by-step basis, verbal persuasion, social support, self-efficacy, and personal control.

Role modeling is an important component of social cognitive theory. Modeling is most effective when the role model shares many characteristics with the participant (e.g., age, physical impairment, sex, ethnicity, and socioeconomic status). Professional leaders of health education classes who are not role models in this sense should consider sharing teaching with, and deferring problem solving to, class members who are.

McAuley and Courneya (1993) suggest that role modeling with older program participants "may be particularly salient. In such cases it is common to look to other people, especially those that bear similar physical characteristics to ourselves, for motivation and information regarding our own prospects of success" (p. 73).

Persuasion is another social cognitive strategy, one that is probably more popular than effective (Lorig, 1992). Persuasion is most effective when health providers and educators ensure that it is accompanied by realistic goals and includes opportunities for guided mastery of tasks on a step-by-step basis. It is also important that messages are positive and direct ("you can do it," not "try and do it") and delivered by a respected source.

Social cognitive theory is also likely to be more effective when its ideas are applied through several behavior and cognitive management strategies, rather than through the application of a single technique (USPSTF, 1996).

Self-Efficacy

Self-efficacy may be the most widely utilized and tested concept in social cognitive theory. It is a belief in one's capabilities to implement a course of action. Self-efficacy is synonymous with having confidence about behavior change or maintenance within a specific behavioral domain (Bandura, 1997). It is fostered by guided mastery, modeling, and persuasion.

Guided mastery involves learning and practicing appropriate behaviors through the assignment of small, graded (i.e., increasingly challenging) tasks that are accomplished in a specific period of time. *Modeling* refers to teaching and leadership responsibilities by persons who are as much as possible like the clients being taught in terms of age, race, gender, and physical limitations. *Persuasion* focuses on identifying the risk, the intervention to reduce the risk, and convincing the client that he or she can successfully engage in the intervention with a positive outcome.

Self-efficacy is often predictive of health behaviors, especially in regard to sustaining behavior change (McAuley, 1993). One researcher concluded that "self-efficacy affects the amount of effort devoted to a task, and the length of persistence when difficulties are encountered" (O'Leary, 1985, p. 438).

Self-efficacy can be manipulated experimentally with success. In one study, psychological tests were administered to a group of volunteers in a smoking cessation program. Half the subjects were then randomly assigned to a treatment group and told that in their tests they had demonstrated great potential to quit smoking. The other half were told the truth, that they had been *randomly* assigned to a control group. Fourteen months after treatment, smoking frequency had been reduced by 67% within the efficacy-enhanced group and by 35% within the control group (Blittner et al., 1978).

After reviewing the literature, McAuley and Courneya (1993) concluded,

> If practitioners and clinicians fail to organize, present, and develop their programs in such a way as to cultivate efficacy beliefs, participants are likely to perceive the activity negatively, become disenchanted, discouraged, and discontinue. On the other hand, adequately organizing [programs] in a manner such that a strong sense of personal efficacy is promoted will result in the individual displaying more positive affect, evaluating their self-worth more positively, embracing more challenging activities, putting forth more effort, and persisting longer. In short, they will be in a position to successfully self-regulate their behavior. (p. 72)

An increasing number of researchers believe that the relationship between self-efficacy and behaviors is interactive, not unidirectional (Goldsteen et al., 1991; Lorig et al., 1989; McAuley, 1994). Just as enhancing self-efficacy beliefs may increase the likelihood of sustaining a new health behavior, ongoing adherence to a new health behavior may continue to increase self-efficacy.

Several cautionary notes emerge from research findings. Bandura (1997) reports that behavior change and maintenance are also a function of outcome expectations. Enhancing your belief about your ability to behave in a particular way (self-efficacy) needs to be supplemented by the belief that your performance will lead to a desired outcome (outcome expectancy).

Extreme optimism regarding one's self-efficacy may relate *inversely* to successful performance (Rakowski et al., 1991). Also, self-efficacy is limited to an individual's belief in a specific, not a general, ability. People may, for example, perceive themselves to possess the self-efficacy to implement a walking program but not to follow through on a diet. Self-efficacy in one area of behavior does not generalize to another.

In addition, the perceived ability to change a health habit or adopt a new health behavior does not guarantee that a person has the necessary skill level, role model, peer or professional support, or access that

might be required. Self-efficacy may be a necessary but not a sufficient condition for clients attempting to improve a health behavior.

Self-efficacy is an important part of the Arthritis Self-Help (ASH) course (Lorig et al., 1989) developed at Stanford University in 1978 by Kate Lorig, a nurse and health educator, and physicians Halsted Homan and James Fries. More than 100,000 persons with arthritis have completed the ASH course, usually in groups of 15 individuals or less and typically led by nonprofessionals who have arthritis. During the 12-hour program, students are taught about arthritis and about how to design an exercise program, manage pain through relaxation techniques, improve nutrition, fight depression and fatigue, and communicate more effectively with physicians.

Participants who complete the program report, in general, about a 15% to 20% reduction in pain, are more active, and visit a physician less frequently. Among those who are depressed when starting the program, fewer depressive symptoms are reported by the end of the program.

The researchers were surprised to find that while changes in behavior, such as exercise and stress management, occurred as a consequence of the program, the factor most closely linked to outcomes (improvements in pain control, depression management, and activity level) was an increase in self-efficacy. In one group of successful patients, self-efficacy was still 17% higher 4 years after they completed the course (Lorig et al., 1989).

Health Locus of Control

Health locus of control (Wallston & Wallston, 1982) refers to the idea that an individual's health can be controlled through that person's ability to control his or her own behavior (i.e., internal locus) or through powerful others or luck (i.e., external locus).

One's health locus of control orientation, similar to perceived self-efficacy, is of limited utility when individuals do not place much value on their health (Lau, 1988; Wallston & Wallston, 1982). Also, medical practices and outcomes, unlike health practices, may not be within one's sphere of influence (Sechrist, 1983). Therefore it is important that health professionals who encourage their clients to take personal responsibility for their health practices discourage them from overestimating their personal control over medical events.

It may be necessary to help clients differentiate between the realistic goals—increasing energy, reducing stress, enhancing feelings of well-being, and increasing knowledge and decision-making ability—and the less realistic goal of staving off a deteriorating medical condition. Research in the future, however, may suggest that even mortality may be influenced by behavioral interventions.

Spiegel and colleagues' (1989) 10-year follow-up study of metastasized breast cancer patients, for instance, reported that patients who participated in supportive therapy groups lived twice as long as those who did not. (A review of subsequent and conflicting studies in this area will be provided in chapter 11, Mental Health). Also, nursing home residents who were able to exert control over their environment lived twice as long as those who were given assistance without responsibilities (Rodin & Langer, 1977).

As people move from adulthood to old age, their belief in self-efficacy may increase in specific areas (Sarafino, 1990), perhaps because experience has taught them what they can and cannot do. Their belief in health locus of control, on the other hand, may become more external with age (Lachman, 1986). Older patients are more likely than younger ones, for instance, to prefer that health professionals make health-related decisions for them (Haug, 1979; Woodward & Wallston, 1987).

This increased externality among older adults, however, may be due to *cohort factors* such as (a) the cultural orientation of specific older cohorts who believe in an authoritarian health professional role or (b) the lower education levels of the oldest cohorts, which lead to their reluctance to engage with health professionals in a dialogue they might not understand.

Increasing externality with age, though, may also be due to *maturational factors*. For example, the increased physical vulnerability that occurs with age may, over time, discourage an individual's sense of personal control. And yet an external health locus of control may correlate with a positive attitude toward the future. A belief in powerful others, like physicians, who can influence the course of an illness may lead older patients to become more hopeful about the future (Marks et al., 1986).

Older adults with an internal health locus of control may also become more sanguine about the future. They may not believe they can control the outcome of their disease states, but they may feel hopeful that they can influence other aspects of their future, such as the ability to control their perception of stress or the ability to acquire the information they need to cope as well as possible with health problems (Wallston & Wallston, 1982).

Information seeking does not necessarily lead to better adjustment. Information about an illness can raise, as well as lower, anxiety. When combined with the adoption of a relaxation technique, however, information seeking may lead to a more desirable outcome (Taylor et al., 1984).

One interesting study matched subjects by their health locus of control profiles. Internals in self-directed programs and externals in peer support groups were more satisfied and lost more weight than nonmatched

subjects (Wallston et al., 1976). Unfortunately, another possible, perhaps more powerful, explanation was not examined—that combining *both* internal and external sources of support may lead to better perceptions and results.

The success of Alcoholics Anonymous (AA) may be attributable to its reliance on both internal and external sources of control. On the one hand, AA members must take responsibility for their problem; on the other hand, they are required to acknowledge their inability to control alcoholism without the help of a higher power and the other members of AA (Strecher et al., 1986).

Related to the study of locus of control is the topic of personal control. Two classic studies in personal control reveal that seemingly simple or minor opportunities to control events can affect both physical and mental health. In one study, the residents of two floors of a nursing home were given responsibility for such activities as taking care of a plant, deciding on when to see a movie, and rearranging furniture. The residents of the other two floors were also the beneficiaries of a plant, weekly movie, and furniture, but were given no control over these activities; the staff took care of the plants, decided when the movie would be shown, and rearranged the furniture.

Despite the fact that the residents were similar in physical health, mental health, and prior socioeconomic status, the residents with personal control were physically and mentally healthier, and 18 months later, only 15% of those with enhanced control had died, versus 30% of those without (Langer & Rodin, 1976; Rodin & Langer, 1977).

Schulz's (1976) experiment with residents of a retirement home revealed that student visits to residents led to more active, happier lives among the residents. However, unlike the nursing home experiments of Langer and Rodin (1976), in which personal control opportunities for some residents were implemented on a continuing basis, the removal of the students from the retirement home by the researchers precipitated a significant decline in health among residents.

The rationale underlying perceived control is that control over decisions and actions will more likely produce desirable outcomes. Studies show that perceived control is associated with reduced stress, increased motivation, improved health, and enhanced performance (McAuley, 1994; Peterson & Stunkard, 1989). Perceived control, however, can have negative effects under specified conditions: when perceived control or confidence exists without sufficient information or skill to support a positive outcome; when excessive demands are made on a person's time, effort, and resources; and when individuals erroneously accept responsibility and blame for health problems, regardless of origin (Rodin, 1986).

Health Belief Model

One model of health behavior change focuses on perceived threats, benefits, and barriers. The health belief model, developed during the 1950s to explain why people did not participate in free tuberculosis screenings and other prevention programs (Becker, 1974; Rosenstock, 1990), states that individuals choose to take or not to take preventive action depending upon these perceptions.

Perceived threats refer to the individual's perception of his or her *susceptibility* to a particular condition and the degree of *severity* of the condition that the individual fears. Persons who perceive no threat lack a reason to act.

Perceived susceptibility to, and severity of, a condition together produce fear. For instance, when heart patients see a scan showing plaque accumulation in their own arteries, their adherence to a lipid-lowering drug regimen increases significantly. Moreover, the more severe the plaque accumulation, the more likely the patient is to stay on the medicine (Kalia et al., 2006).

Fear is an effective motivator, yet the optimal level of fear for motivating client behavior is unknown (Sutton & Hallett, 1988). Too little fear may not motivate, but too much can lead to denial and inaction. An important consideration in fear-inducing interventions is that fearful individuals, regardless of their motivation, may lack the necessary skills or confidence to change their health behaviors.

Perceived benefits refer to the belief that specific actions on the part of an individual will reduce the threat of negative outcomes or increase the chance of positive outcomes. Perceived benefits must outweigh perceived barriers before a person will initiate an action. *Perceived barriers* may include financial considerations, inconvenience, lack of transportation, lack of knowledge, or potential pain or discomfort.

Evaluations of the health belief model conducted exclusively with older persons have been limited. One such study, though, assessed health beliefs related to osteoporosis—specifically, the likelihood that the older adults in the study would adopt exercise behaviors and increase their calcium intake (Kim et al., 1991). The authors concluded that it is important to focus on overcoming perceived barriers, such as the difficulty of changing old habits and the incorporation of new habits into a daily routine.

Each of these belief measures—susceptibility, severity, benefits, and barriers—has a significant but limited relationship to subsequent preventive behaviors, such as participation in flu vaccination, breast self-examination, tuberculosis skin tests, and smoking cessation activities (Kirscht, 1988).

The predictability of the model is limited because of the uncertainty surrounding how rationally a person will act in a given circumstance. In

addition, beliefs are not in themselves sufficient conditions for action: "Researchers must seek out that constellation of conditions, including beliefs, which accounts for major variations in behavior" (Rosenstock, 1990). Some of these additional factors are physiological dependency, economic limitations, environmental influences, skill development, and self-efficacy.

Other Theories

The theory of reasoned action focuses on attitudes that precede potential behaviors (Fishbein & Ajzen, 1975). One interesting aspect of this theory is its focus on taking into account what relevant others think a person should do. An older person may finally relent and join a smoking cessation program because of his or her perceived belief of what the person's physician or his or her spouse wants the person to do. The theory of planned behaviors, an extension of the theory of reasoned action, has an additional focus on the perceived ease or difficulty of performing a behavior (Ajzen, 1988). The older smoker may intend to quit but does not believe there is access to a program that will provide the skills to quit.

There are theories that focus more on community than on individuals. One example is empowerment theory, a process of collective education and social action that promotes the participation of people, organizations, and communities in gaining control over their lives (Wallerstein & Bernstein, 1988). This theory involves collective attempts to address problems by surmounting cultural, social, and historical barriers. A central tenet of social ecology theory is that individual behaviors emerge from socialization; to change individual behaviors, we must change the social institutions that shape them.

Community-Oriented Primary Care (COPC) is another community-level theory that encourages clinicians to view their patient populations, not just individual patients, and to involve other community organizations and community leaders to help with population-based behavior change (Nutting, 1987). Examples of applying COPC in the community are provided in chapter 12, Community Health.

An interesting article by Syme (2003) reports that, in general, well-funded, large-scale programs to change the larger community in which people live—in order to get individuals to improve their health behaviors—have not turned out to be successful.

A Final Note

The reader may be asking at this point (granted, the likelihood is quite small), Why do you place health behavior theories at the end of this

chapter? Should you not start with them as they help shape the health assessments and interventions to follow? I can only answer this by offering a personal, and perhaps politically incorrect, view: I do not think that the behavior change theories are sufficiently powerful to stimulate the shaping of a health intervention. Instead, I believe that several concepts embedded in different theories may be useful once a health intervention has already entered the development phase.

Theories, moreover, are too rich for my research blood. A theory attempts to relate a set of concepts systematically to explain and predict events and activities. Concepts, however, are the primary elements of theory, and each theory has a concept or two that is particularly well developed and helpful to me in guiding a community intervention and evaluation.

Therefore I begin my community health education projects based on questions raised from my professional experience: How does the practicum vary among gerontology programs (Haber, 2003)? How is a health promotion directory being utilized by older adults (Haber & Looney, 2003)? How effective is a health contract/calendar for behavior change (Haber, in press; Haber & Looney, 2000; Haber & Rhodes, 2004)? Are African American churches good sites for exercise programs (Looney & Haber, 2001)? How effective are health science students as exercise leaders (Haber et al., 1997, 2000)? How effective is a health promotion intervention with older adults (Haber, 1986; Haber & Lacy, 1993)? At some point after project development has begun I examine key concepts from different theories and refine my interventions and evaluations accordingly.

QUESTIONS FOR DISCUSSION

1. Do *you* think a health risk appraisal by itself has value for a client, or does it require substantial health education follow-up in a particular risk area? Explain your answer.
2. Do *you* think encouraging a precontemplater to change a health behavior is an inefficient use of limited personnel resources? Explain your answer.
3. Write a health contract for yourself for a 2-week period of time. What techniques are you going to employ to increase your likelihood of completing it successfully? At the end of the 2 weeks, discuss your success, or lack of such, with others.
4. Think about an older relative or friend of yours: Would conducting a health contract/calendar be successful with him or her? Why do you think that?

5. Which of the 10 Tips is the most important tool for *you* to use in changing a health behavior? Why? Which one is the least relevant for you? Why?
6. If you were forced to describe yourself with one term, are you more of a healthy-pleasure type of person or a behavior-management type of person? What percentage of personal trainers would you guess fall into the healthy-pleasure category? Why do you believe that?
7. Complete a food behavior diary for 3 days. What did you learn about your eating and drinking habits? Did the monitoring process lead to changes in your eating pattern?
8. If you were writing a grant proposal to help older adults exercise more in the community, which two health behavior concepts described in this chapter would you find *most* helpful for guiding your intervention? Explain your answer.
9. Examine one other topic in this chapter that you found interesting and has not been explored when answering the previous questions. Why did you find this interesting?

CHAPTER FIVE

Exercise

1996 *SURGEON GENERAL'S REPORT ON PHYSICAL ACTIVITY AND HEALTH*

In her exercise video "Shopping for Fitness," Joan Rivers espouses walking the malls for aerobic conditioning, hefting shopping bags for weight training, and trying on jeans that are one size too small to motivate oneself for weight reduction. According to Rivers, "Everybody's got a tape out, 'Buns of Steel,' 'Breasts of Iron' and 'Bunions of Teflon.' They just don't get it, that it should be fun." Although many of her comments on the video are satirical, much of the *Surgeon General's Report on Physical Activity and Health* supports what she espouses.

The July 11, 1996, *Report* represented a 2-year collaborative effort between the Centers for Disease Control and Prevention and the President's Council on Physical Fitness and Sports. It was the most comprehensive review of the research up to that time on the effects of physical activity on people's health. According to the surgeon general's report, regular exercise and physical activity improves health in a variety of ways, including a reduction in heart disease, diabetes, high blood pressure, colon cancer, depression, anxiety, excess weight, falling, bone thinning, muscle wasting, and joint pain.

However, 60% of adults did not achieve the recommended amount of physical activity, and 25% of adults were not physically active at all. Inactivity increased with age; by age 75, about one in three men and one in two women engaged in no physical activity. Inactivity was also more common among women and people with lower income and less education.

Previous reports of the surgeon general on national health risks, such as the health hazards of tobacco published in 1964, have had a

major influence on public awareness and the policies of government and business. More than a decade later, it is still unclear how influential this report on physical activity will be, but as Acting Surgeon General Audrey F. Manley, MD, stated, "This report is nothing less than a national call to action. Physical inactivity is a serious nationwide public health problem, but active and healthful lifestyles are well within the grasp of everyone."

The report agrees with Ms. Rivers in that most sedentary Americans are not going to rigorously pursue buns of steel, and among those who do, all will fall short of the goal. Instead, it is important to make the first step for most Americans achievable, and to do so requires a large degree of modesty in setting goals and at least a small degree of enjoyment, hence the emphasis on being more active, such as shopping while walking briskly, than adherence to a rigid exercise regimen.

The basic premise of the surgeon general's report is that Americans should get at least 30 min of physical activity most days of the week. This statement provides a major perspective shift from previous recommendations by government and exercise leaders. In summary, this new message recommends that Americans become more concerned about total calories expended through exercise than about intensity level or length of activity session. Regarding intensity level, the report stresses the importance of raising respiratory and heart rates—physiological changes that are apparent to the participant—but not to be too concerned about raising intensity level to a target heart rate, particularly if you are sedentary or have a less than active lifestyle.

Regarding the length of activity sessions, it is no longer deemed essential to obtain 30 consecutive min of exercise. For Americans, the large majority of whom are not too active, accumulating shorter activity spurts throughout the day is effective. Got a spare few minutes? Then briskly walk the shopping malls with Joan or climb a few stairs. A review of the research literature concludes that accumulating several 5- or 10-min bouts of physical activity over the course of the day provides beneficial health and fitness effects (DeBusk et al., 1990; Jakicic et al., 1995; Lee et al., 2000; Murphy et al., 2002; Pate et al., 1995).

One study reported that the accumulation of physical activity segments (4 10-min walks) appears to be more effective than a single continuous session (40 min) in the management of hypertension (Park et al., 2006). Another study reported that if you time these bouts of activity right, you can also use them to gain the added benefit of replacing junk food snack breaks (Jakicic et al., 1995).

Regarding exercise itself, it is difficult for adults to go from inactivity to an exercise routine. Thinking about how to accumulate short bouts of activity is a useful way to get started on better health and fitness. For example, wax your car or wash your floor more briskly than you

normally do (even if it means doing it in segments throughout the day), or put more energy into leaf raking or lawn mowing, gardening with enthusiasm, or dancing by yourself to music on the radio.

Finally, the surgeon general's report urges Americans to be active most days of the week. Aim for the habit of everyday exercise, but do not allow the occasional lapse to discourage you. Making exercise a near-daily routine is more likely to become an enduring habit than the previously recommended 3 times per week.

In September 2002, I was disappointed to learn that 21 experts at the Food and Nutrition Board of the Institute of Medicine had produced a 1,000-page report (see *Dietary Reference Intake* report, September 5, 2002, at http://www.iom.edu) that recommended that Americans exercise at least 1 hour a day. The exercise recommendation was based on biochemical measurements, rather than on practical considerations. The board inexplicably seems to be recommending that even though few Americans were getting the half hour a day of exercise most days of the week that was recommended by the surgeon general's report—a recommendation that was based on considerable research to support the substantial health benefits of this routine—why not ignore practicality and raise the bar of expectation even more, to 1 hour every day?

Despite the Institute of Medicine's report, the evidence is clear. Exercise does not need to be that onerous. It should also be noted that the Institute of Medicine's report was not focused on exercise, but on the new nutritional guidelines called Dietary Reference Intakes, which will be examined in the next chapter on nutrition (along with, I believe, a few impractical nutrition recommendations that were made by the institute).

THE MOST POPULAR ACTIVITY OF ALL: WALKING

Older adults need not become triathletes or engage in other high-intensity activities to reap the benefits of exercise. For most older adults a brisk walking program will provide sufficient intensity for a good aerobics program. An 8-year study of more than 13,000 people indicated that walking briskly for 30–60 min every day was almost as beneficial in reducing the death rate as jogging up to 40 miles a week (Blair et al., 1989). The authors of a study of 1,645 older adults reported that simply walking 4 hours per week decreased the risk of future hospitalization for cardiovascular disease (LaCroix et al., 1996).

The Nurses' Health Study is a long-term research project that began in 1976, involving 122,000 nurses. A prospective study of 72,000 of these nurses over an 8-year period revealed that brisk walking 3 hours a week offered as much health benefit as engaging in vigorous exercise.

Brisk walking is defined as about 3 miles per hour (twice the normal pace), and 3 hours a week comes to about 30 min per day, most days of the week. Among the brisk walkers, the incidence of coronary events (nonfatal myocardiac infarction or death from coronary disease) was reduced between 30% and 40% (Manson et al., 1999). A subset of this sample containing 5,100 diabetic walkers produced a similar reduction in heart disease risk (Hu et al., 2001).

The National Center for Health Statistics reports that walking has much greater appeal for older adults than high-intensity exercise. A national survey indicated that a smaller percentage of persons aged 65 plus (27%), in comparison to the general adult population (41%), engaged in vigorous activities, whereas people of all age groups (41%) were equally likely to walk for exercise (National Health Interview Survey, 1985).

Brisk walking is the most popular aerobic activity for older adults. As the acting surgeon general emphasized in her report, most Americans can benefit from activities like brisk walking and not concern themselves about target heart rates. Many older adults are concerned about unfavorable weather, though, and may abandon their walking routines as a consequence. Prolonged hot or cold spells may sabotage a good walking program. Rather than discontinue this activity because of the weather, adults may choose to walk indoors at their local shopping malls. Many shopping malls—about 2,500 nationwide—open their doors early, usually between 5:30 and 10:00 a.m., for members of walking clubs.

Regarding outdoor walking, the degree to which dog ownership could promote walking activity in older persons is an interesting research topic to pursue. One study of 394 dog owners between the ages of 71 and 82 revealed that 36% of them walked their dog at least 3 times per week (Thorpe et al., 2006). Can this percentage of older dog owners who walk their dogs regularly be increased? If older non-dog owners purchased a dog, would it increase their walking?

There is a relationship between one's neighborhood and one's health. Residents who are dependent on a car to get to most places and have few sidewalks for safe walking are likely to be more obese and have chronic medical conditions that impact on health-related quality of life (Booth et al., 2005; Sturm & Cohen, 2004). For every extra 30 min commuters drive each day they have a 3% greater chance of being obese; and for people who live within walking distance of shops they are 7% less likely to be obese (Frank et al., 2004). Older persons who believe their neighborhoods are favorable for walking are up to 100% more physically active (King et al., 2003; Li et al., 2005a). People at high risk for inactivity may increase their physical activity when they have access to walking trails (Brownson et al., 2000).

A sedentary person is estimated to walk about 3,500 steps a day and the average American about 5,130 steps. Many advocates believe Americans should aim for 10,000 steps a day, or about 5 miles. Workplace physical activity, particularly among blue-collar occupations, helps many people reach the 10,000-step target, leaving older adults (and overweight workers) most likely to be at risk (McCormack et al., 2006).

Pedometers are small devices that count steps and are typically attached at the waist. They first appeared in Japan in 1965 under the name Manpo-meter—*manpo* in Japanese means "10,000 steps." Their introduction into America took another few decades, but they have been rapidly increasing in popularity—even McDonald's distributed them for awhile as part of an adult Happy Meal called Go Active (salad, bottled water, and a pedometer for $4.99). Studies, though, have been equivocal about the benefits of using a pedometer to motivate individuals.

One study, for instance, reported that pedometers added no additional benefit to a coaching intervention (Engel & Lindner, 2006), while another publication noted that it increased the frequency of short walking trips (Stovitz et al., 2005). One study reported that cheap pedometers are likely to overestimate the actual number of steps taken. Compared to a more sophisticated step count gadget, inexpensive pedometers had a 75% chance of being more than 10% off in their measurements and a 37% chance of deviating more than 50% (De Cocker et al., 2006).

Groups of people—families, friends, church members, and so on—who want help adding 2,000 steps a day to their daily routine can access information and guidelines offered by the national organization America on the Move at http://www.americaonthemove.org.

Another option for older adults is to join a noncompetitive walking or hiking club or participate in a nearby walking or hiking event. Two opportunities in this regard are the American Volkssport Association at 800-830-9255 or at http://www.ava.org; and the local Sierra Club at http://www.sierraclub.org. If you want to add a mind-body dimension to walking, try ChiWalking, which combines walking with the principles of Tai Chi (http://www.chiwalking.com).

Traveling to another city can also be an excuse not to exercise, or it can be an opportunity to gather information from the local newspaper or chamber of commerce about a walking tour for an enjoyable way to get exercise and a unique way to learn about offbeat aspects of a city's history. Most, if not all, big cities have walking tours, and some sound particularly intriguing (Oak Park, Illinois, offers self-guided walking tours of Frank Lloyd Wright homes (708-848-1976), and the Big Onion offers walking tours of New York City's ethnic communities and restaurants (212-439-1090; http://www.bigonion.com).

Walking is so popular that it has spawned many magazines, newsletters, and books. It may appear that there is not much to walking—we have been doing it, after all, since we were toddlers—but proper technique improves benefits and reduces injuries. Good walking technique involves proper posture (head erect, chin in, shoulders relaxed, and back straight); a bent-arm swing; and a full, natural stride. Good walking shoes should have flexible soles, good arch supports, and roomy toe boxes. Shoe inserts, called orthotics, may be helpful for cushioning impact or to prevent the feet from turning in or out.

EXERCISE FOR DISEASE PREVENTION AND FUNCTIONAL IMPROVEMENT

As previously noted, the 1996 surgeon general's report documented the many benefits of regular exercise. In 1992, the American Heart Association (AHA) added physical inactivity as a risk factor to its list, joining hypertension, smoking, and high blood cholesterol. It was the first new risk factor the AHA had added in almost 20 years.

The AHA recommended routine screening of all patients for inactivity. If the physician has time constraints, the AHA recommends that exercise counseling be coordinated through a nurse, allied health professional, or other type of health educator (Fletcher et al., 1992). As a number of gerontologists have noted, if exercise could be encapsulated in a pill, it would be the single most powerful medication a physician could prescribe.

In 2004, I was a member of an expert panel reviewing evidence-based outcomes of exercise in older adults. This CDC-funded project was led by Thomas Prohaska of the University of Illinois at Chicago, and he and his research team reviewed 2,334 studies published in peer-reviewed journals between 1980 and 2000. In short, this review concluded that exercise was beneficial in all the areas that were reviewed: heart disease, arthritis, chronic obstructive pulmonary disease (COPD), endurance, strength, mobility/balance, mortality, disability, and mental health.

While this comprehensive evaluation was too detailed to adequately summarize here, I report below—unsystematically—on recent studies that show evidence that exercise demonstrates considerable promise for older adults in the areas of disease prevention and improved physical and cognitive function.

Cardiovascular Disease

Inactivity is the most powerful predictor of mortality from cardiovascular disease among healthy persons, surpassing smoking, hypertension,

and heart disease (Myers et al., 2002). Studies report, though, that interventions as accessible as brisk walking are associated with a reduced risk of coronary heart disease for elderly men (Hakim et al., 1999) and elderly women (Manson et al., 1999). Although walking is sufficient by itself to lower the risk of cardiovascular disease, brisker walking lowers the risk (Manson et al., 2002), and more vigorous exercise lowers the risk further (Tanasescu et al., 2002).

Exercise is also a major prognostic factor in patients with existing cardiovascular disease. Patients who are physically active after a first heart attack had a 60% lower risk of fatal heart attack or a second nonfatal heart attack than those who did not stay active (Steffen-Batey et al., 2000). For a number of years, exercise was contraindicated for patients with chronic heart failure (CHF). Subsequently, exercise was recommended for CHF patients, provided the heart problem was stable (Gielen et al., 2001). Exercise also appears to provide protection against in-hospital mortality in elderly patients with acute myocardial infarction (Abete et al., 2001).

Though aerobic conditioning has been considered the exercise of choice for improved cardiorespiratory function, other forms of exercise have proved beneficial as well. Tai Chi (Lan et al., 1999) and resistance exercise (Tanasescu et al., 2002; Vincent et al., 2002a), for example, provide cardiorespiratory benefits. Resistance exercise, in fact, appears to reduce blood pressure level (Kelley & Kelley, 2000) and cholesterol level (Kraus et al., 2002; Prabhakaran et al., 1999), outcomes primarily obtained previously through aerobic exercise interventions.

A study of peripheral vascular disease (PVD) reported what may seem incongruous to some—that an effective treatment for clogged or narrowed arteries of the legs is aerobic walking (Stewart et al., 2002). Walking increases muscle metabolism and may improve circulation to the legs, allowing more oxygen to get to tissues otherwise starved by blockages. The two caveats to walking interventions for PVD are to avoid extreme pain and to avoid exercise if pain continues when legs are at rest ("Peripheral Vascular Disease," 2000).

In the Framingham Heart study, people over age 50 who participated in moderate physical activity starting at age 50 lived 1.1 years longer free of heart disease and 1.3 years longer overall; people who participated in high levels of physical activity lived 3.2 years longer free of heart disease and 3.5 years longer overall (Franco et al., 2005). These gains were similar for both men and women.

Cancer

Epidemiological findings have established an association between the risk of cancer and physical activity and exercise. Higher levels of adult physical

activity, for example, appear to afford modest protection against breast cancer or enhance survival after breast cancer (Holmes et al., 2005), perhaps by reducing body fat, where carcinogens accumulate (Dirx et al., 2001; Rockhill et al., 1999), or by lowering the level of estrogen in the blood (McTiernan et al., 2002). Also, women with substantial leisure-time physical activity had a 27% lower incidence of ovarian cancer (Cottreau et al., 2000). Men who exercised reduced their risk of prostate cancer by 24% and upper digestive and stomach cancer by 62% (Wannamethee et al., 2001).

High activity level is also associated with a substantial reduction in risk, up to 50%, of colon cancer (Martinez et al., 1999; Slattery et al., 1999; White et al., 1996; Zhang et al., 2006). Although the mechanisms by which exercise appears to protect against colon cancer are not known, it is speculated that exercise speeds food through the bowel and shortens the time carcinogens in fecal matter spend in contact with cells that line the colon.

There is no agreement on a single theory that accounts for the positive influence of exercise and physical activity on the risk of cancer. Instead, several have been explored, and they tend to differ with the varying types of cancer. The theories range broadly and include the immune, nervous, and endocrine systems.

Diabetes

Exercise appears to impact on type II diabetes in terms of both prevention of the disease and the risk of mortality among those who already have the disease. The onset of diabetes can be delayed or prevented when high-risk people make lifestyle changes that include increased exercise. Finnish researchers investigated 522 people over a 4-year period, and the incidence of diabetes was 11% among those who received exercise and other counsel and 23% among controls—a significant difference (Tuomilehto et al., 2001).

A study of 70,000 female nurses who did not have diabetes at baseline documented 1,419 incident cases of type II diabetes over an 8-year period. There was a substantially reduced risk in obtaining type II diabetes, however, among those who exercised regularly, even among those who engaged in moderate-intensity physical activity, such as brisk walking (Hu et al., 1999).

Being active also increased the chances that a person with diabetes would stay alive. Researchers studied 1,263 men with diabetes over an average of 12 years and reported that the physically inactive had a 70% greater chance of dying than did men who reported being physically active. The overall risk of death shrank as the level of fitness rose (Wei et al., 2000). Another study of 2,803 men with type II diabetes

reported that physical activity was associated with reduced risk of cardiovascular death and total mortality (Tanasescu et al., 2003).

High-intensity resistance training also improved glycemic control in older patients with type II diabetes (Dunstan et al., 2002). The study authors were surprised at the magnitude of the effects as they equaled those typically seen with drugs for diabetes. They noted that muscles are major clearance sites for circulating blood glucose.

Depression

Exercise may be just as effective as antidepressant medication in treating some cases of depression (Lawlor & Hopker, 2001), though medication may initiate a more rapid therapeutic response than exercise (Blumenthal et al., 1999). After 16 weeks of treatment, though, exercise was equally effective in reducing depression among patients with major depressive disorder (Blumenthal et al., 1999). Another study reported that, conversely, individuals who stop exercising lose the long-term mood-enhancing effects (Kritz-Silverstein et al., 2001).

A study by Singh and colleagues (2001) reported that supervised weight lifting exercises significantly benefited depressed older adults in comparison to control persons who attended health lectures. (I suppose one could argue that if the older weight lifters had been subjected to attending lectures as well, both groups would have remained depressed.) What was interesting about this study was that the antidepressant benefits were sustained even after exercise supervision was terminated and the participants were on their own. After 26 months, one-third of the elderly exercisers were still regularly weight lifting.

At the other end of the time continuum, a single exercise session can boost the mood of mildly to moderately depressed persons (Bartholomew et al., 2005). Just 30 min of brisk walking can immediately boost mood, giving a benefit similar in magnitude (to near-normal mood levels), and time (up to an hour) that some persons seek through cigarettes, caffeine, or binge eating.

Cognition

Longitudinal studies of physical activity among older women over several years reported that those with higher physical activity levels were less likely to experience cognitive decline. This association was not explained by differences in baseline function or health status (Weuve et al., 2004; Yaffe et al., 2001). Another study of 349 healthy adults aged 55 and older reported that older adults with higher levels of fitness—as measured by a standard treadmill exercise test—experienced a slower rate of cognitive decline over a 6-year period (Barnes et al., 2003).

Leisure-time physical activity at midlife is associated with a decreased risk of dementia later in life (Rovio et al., 2005). In nondemented older adults a modest amount of exercise—as little as 15 min 3 times weekly—is associated with a 32% reduced risk for developing dementia over the next 6 years (Larson et al., 2006).

One study examined the relationship between aerobic fitness and in vivo brain tissue density. High-resolution magnetic resonance imaging scans from 55 older adults revealed that declines in brain tissue densities as a function of age were substantially reduced as a function of fitness, even when other relevant variables were statistically controlled (Colcombe et al., 2003).

Exercise may not only stem a decline in cognitive functioning, it may improve it as well. Researchers found that older men and women who engaged in aerobic exercise improved the higher mental processes of memory and executive functioning—such as planning and organizational abilities—that are based in the frontal and prefrontal regions of the brain (Khatri et al., 2001; Kramer et al., 1999).

Bone Density

Both weight-bearing aerobic exercise and resistance training increase bone density in older women (Jakes et al., 2001; Rhodes et al., 2000). Of most relevance to older adults, though, is a study that reported that even low-impact aerobic exercise, such as brisk walking, can increase bone mass. A review of 24 studies that examined aerobic exercise and bone mineral density in women reported a 2% bone mass gain among exercisers versus nonexercisers and that walking was the most common form of exercise used in these studies (Kelley, 2001). The Nurses' Health Study of 61,200 postmenopausal women concluded that moderate levels of activity, including walking, are associated with substantially lower risk of hip fractures (Feskanich et al., 2002b).

A study of healthy older persons who engaged in 6 months of resistance training showed 2% greater bone density in the hip area and signs that bone metabolism had shifted toward generating more bone than was being lost (Vincent & Braith, 2002). Another study reported that resistive back-strengthening exercises reduced the incidence of vertebral fractures among postmenopausal women (Sinaki et al., 2002).

Fall Prevention

Home-based exercise programs result in significant fall reduction and related benefits. One individually tailored exercise program in the home improved physical function, reduced falls, and decreased injuries in a

sample of women aged 80 years and older. Over a 1-year period, persons in the exercise program reduced falls by 46%, compared with a usual care control group that received an equal number of social visits (Campbell et al., 1997). Another home-based exercise program with older adults aged 70–84 reported significant fall reduction in comparison to groups that received home hazard management and treatment of poor vision (Day et al., 2002).

A meta-analysis of seven Frailty and Injuries: Cooperative Studies of Intervention Techniques trials revealed that a variety of exercise interventions—examined by way of randomized, controlled clinical trials—led to a reduction in falls among elderly patients (Province et al., 1995). Subjects in the seven trials were older adults (minimum ages ranged from 60 to 75 years) and were mostly ambulatory and cognitively intact. The exercise interventions were successful, even though they varied in duration, frequency, intensity, and content. The content of the interventions included endurance training, resistance training, flexibility training, and Tai Chi.

Starting an exercise program cannot only lower an elderly woman's risk of falling, but the benefit can be lasting. Ninety-eight women aged 75–85 with low bone mass participated in one of three types of group-based exercise programs—strength training, agility exercise, or stretching exercise—and reduced their risk of falls between 37% and 43% (Liu-Ambrose et al., 2005). Apparently, these interventions acted as a catalyst for ongoing physical activity because the reduction in fall risk was maintained for at least 18 months.

Osteoarthritis

People with osteoarthritis of the knee often experience progressive deterioration in the cartilage of the knee joint until they reach the point of being disabled. Both aerobic and resistance exercise with patients who have osteoarthritis of the knee reduced the incidence of disability in activities of daily living by about 50% (Penninx et al., 2001). Another sample of older adults with knee osteoarthritis experienced significant improvement in physical function and reduced pain as a consequence of a strength-training program (Baker et al., 2001).

Another simple home-based exercise program significantly reduced knee pain from osteoarthritis (K. Thomas et al., 2002), and an exercise program combined with medication for knee osteoarthritis was more effective than medication alone for improving physical function and reducing activity-related pain in a sample of older persons (Petrella & Bartha, 2000).

Even a modest amount of exercise—less than 30 min per day of moderate activity—appears to prevent disability from arthritis, and those

with arthritis show improvements in mobility problems with modest exercise (Feinglass et al., 2005).

Sleep

Older adults with sleep complaints improved self-rated sleep quality by completing a moderate-intensity exercise program. Exercising subjects reported significant improvement in subjective sleep quality, reduced sleep latency (average time in minutes needed to fall asleep), and increased sleep duration (average number of hours of actual sleep per night; King et al., 1997). Even a sample of healthy older adult caregivers who were without initially reported sleep complaints but who engaged in stressful caregiving with family members reported improvements in subjective sleep quality after they completed a moderate-intensity exercise program (King et al., 2002).

Other Conditions

Exercise has proved beneficial for a wide range of other medical and functional conditions. A sampling of these studies includes a reduction in stress among older women caregivers (King et al., 2002); a reduction in functional decline among nursing home residents (Lazowski et al., 1999; Morris et al., 1999); enhanced physical improvement for elderly women following hip surgery (Henderson et al., 1992); a reduction in the symptoms of chronic fatigue syndrome (Powell et al., 2001); increased function in chronic obstructive pulmonary disease patients (Hernandez et al., 2000); improvement in psychological well-being (McAuley & Rudolph, 1995); a reduction in obesity (Andersen et al., 1999); a reduction in stroke risk (Hu et al., 2005) and improvement in motor function among stroke survivors (Duncan et al., 1998); relief from the symptoms of carpal tunnel syndrome (Garfinkel et al., 1998); relief from lower back pain and dysfunction (Sherman et al., 2005); relief from musculoskeletal pain (Bruce et al., 2005); and acceleration of wound healing among older adults (Emery et al., 2005).

Caution

It takes an act of supreme skepticism to deny the overwhelming evidence supporting the benefits of exercise. Nonetheless, I have met such skeptics who disparage the rigor upon which most exercise research studies are based. Though I most happily do not side with these cynics, the evidence on the benefits of exercise does need to be viewed with a degree of caution. Some studies, for instance, are epidemiological in nature and reveal correlation rather than causality. In other words, exercise may be more the product of being in good health than a contributor to it. Many of

these observational studies attempt to compensate for this limitation by employing analytical controls on a variety of baseline variables.

Other methodological limitations are also common among exercise studies. Many of these studies utilize unrepresentative samples, oftentimes relying on volunteers; lack randomization between treatment and control groups; do not restrict awareness of who is in the treatment versus control groups (unblinded studies); employ inadequate measurement tools, especially a reliance on self-reports; and report high drop-out rates or do not include dropouts in the data analysis (intention-to-treat analysis). Exercise interventions may therefore not be as miraculous as some of these studies seem to indicate.

Nonetheless, the breadth and depth of research on exercise interventions with older adults—including more than 200 randomized clinical trials published between 1980 and 2000—can only lead one to conclude that exercise is an astonishing health intervention, and no amount of methodological nitpicking will seriously diminish its overall wondrous effects.

THE FOUR COMPONENTS OF MY EXERCISE CLASS

The four components of my community exercise class are *aerobics*, *strength building*, *flexibility and balance*, and *health education*. In a typical 60-min class I begin with 25 min of aerobic exercise, warming up for the first 5 min and cooling down the last 5 min. I begin with aerobics in order to warm up the muscles not only for higher intensity aerobic levels, but for the subsequent periods of strength building (15 min) and flexibility and balance (10 min). These three components—aerobics, strength building, and flexibility and balance—typically last 50 min; the final 10 min of class is devoted to health education.

With the aid of students in health science classes (see Figure 5.1) I have implemented this exercise class over 25 years. It has undergone continual refinement over this time.

This exercise program was selected for the directory *Best Practices in Health Promotion and Aging*, compiled by the Health Promotion Institute of the National Council on the Aging (NCOA). To obtain the manual with its brief summaries of selected best practices around the country, contact the NCOA at http://www.ncoa.org, or call 202-479-1200.

The Aerobics Component

Aerobics has been defined as a series of strenuous exercises that help convert fats, sugars, and starches into aches, pains, and cramps. A more conventional definition is that *aerobic* means "with oxygen." An aerobic

activity moves large volumes of oxygen, employs large muscle groups like the arms and legs, and is sustained at a certain level of intensity over a period of time. Aerobic exercise is rhythmic, repetitive, and continuous and includes such popular activities as brisk walking (about twice as fast as one normally walks), swimming, and bicycling.

Aerobic activity can be contrasted to *anaerobic* ("without oxygen") activity, which depends on short bursts of energy (like a 50-m sprint or barbell press), quickly depletes energy resources, and has limited cardiovascular benefit. This type of activity is, however, essential for strength-building purposes.

Aerobic capacity, or maximum oxygen uptake (VO_2 max), is the maximum amount of oxygen that an individual can utilize during strenuous exertion. Aerobic capacity is considered to be the best measure of cardiorespiratory fitness, and although it tends to decrease with age, it can be increased through a regularly practiced aerobic regimen.

Most aerobic exercise programs are designed to stimulate the heart and lungs for a sufficient period of time to produce an increased and sustained heart rate. Traditional programs encourage participants to sustain exercise for a minimum of 20–25 min and to gradually raise the normal heartbeat, about 60–80 beats per min, to the so-called target zone of the individual, the upper and lower limits of which are based on age (see Table 5.1).

FIGURE 5.1 The end-of-the-semester photograph of one of the author's exercise classes, taught by occupational therapy students.

TABLE 5.1 Target Heart Rate by Decades

Age	Target heart rate (60% to 75% of maximum)	Maximum heart rate (220—age)
50	102–128	170
60	96–120	160
70	90–113	150
80	84–105	140

Note. Heart rates are in beats per minute.

The target zone typically refers to between 60% and 75% of the estimated maximum heart rate, which is calculated by subtracting a person's age from 220 and multiplying the remainder first by 60% and then by 75%. The target for the beginning exerciser should be near the 60% level (or less if the person leads a sedentary lifestyle) and gradually increase to the higher level over succeeding months. Individuals can assess the intensity of their aerobic exercise programs by counting their pulse beats for a 10-s period and multiplying by 6. Many aerobics instructors ask their students to conduct this assessment at periodic intervals.

The advantage to calculating target heart rates for some older adults (decidedly a minority) is that the older adults believe this is the most scientific approach and prefer this method. The disadvantages are that (a) a significant percentage of older adults have difficulty obtaining a pulse count; (b) medications like beta-blockers can limit maximum heart rate intensity; and (c) there is controversy in the literature as to whether the commonly used equation to estimate maximal heart rate (220 – age) is valid for older adults (Tanaka et al., 2001). Bailey (1994) reported that the formula for the target heart rate is inappropriate for 30% to 40% of adults. These persons have hearts that beat faster or slower than the age-predicted maximum.

My own experience with exercise programs with older adults has led me to appreciate Fries's (1989) comment:

> We generally find this whole heart rate business a bit of a bother and somewhat artificial. There really are not good medical data to justify particular target heart rates. You may wish to check your pulse rate a few times to get a feel for what is happening, but it doesn't have to be something you watch extremely carefully. (p. 69)

Typically, I implement periodic checking of target heart rates during the first or second class and then encourage those who are receptive to it to periodically check their heart rates on their own.

The technique that I use throughout my exercise class is my version of the Borg (1982) technique, a subjective assessment of how hard one is working. Most older adults prefer the Borg technique. It has the advantage of being easy to gauge, and it serves another purpose: It encourages older adults to become more aware of their bodies and how they feel (see Table 5.2). One study of more than 7,000 men (mean age, 66 years) reported that the individual's perceived level of exertion is a better predictor of risk of coronary heart disease than whether he or she met current activity recommendations (Lee et al., 2003).

Ideally, the inactive older adult should seek an intensity level of very light, about 1 on the modified Borg scale, or about 50% of maximum heart rate. The active older person should be about 8 on the scale, or approximately 70% of maximum heart rate. Generally speaking, we tell participants that the exercise level should be of sufficient duration and intensity for them to break into a sweat (indicating a rising internal body temperature), but not so intense that they are unable to conduct a brief conversation (if desired) while exercising.

Regardless of whether target heart rates or perceived intensity levels are utilized, exercise is discontinued immediately if shortness of breath, chest pain, dizziness or light-headedness, confusion, or pain occurs.

My exercise classes are led by health science students after they complete a brief period of training. Regarding the aerobics component of the class, we offer the students and the older adults two options, which tend to be equally preferred:

TABLE 5.2 Modified Borg Scale of Perceived Exertion

Level	Perceived exertion	Physical signs
1	Very light	None
2		
3	Fairly light	Breathing rate increased
4		
5	Somewhat hard	Warmth, slight sweat
6		breathing rate increased
7		
8	Hard	Sweat
9		
10	Very hard	Heavy sweat, difficult to talk

1. A series of arm and leg movements that gradually increase, and then decrease, intensity level. I usually come up with funny names for the movements (my favorite is the Haber Hula—I will leave that one up to your imagination) and make sure that all parts of the body are moved. If students run out of movement ideas, I encourage them to draw ideas from one of several memory-jarring techniques, for example, (a) playing one of a number of imaginary musical instruments (drums, trombone, violin, etc.) and pretending to generate the music that is playing in the background, (b) mimicking an activity of daily living (drying one's back with a towel, vacuuming the rug, weeding the garden, etc.), and (c) mimicking a movement in a sport (boxing, baseball, etc.).
2. An imaginary trip is acted out, perhaps a cruise to Spain or attendance at a local baseball game. The cruise might include climbing up the boat (taking big steps in place with knees raised high), putting away clothes in one's cabin, dancing that evening with an imaginary heartthrob, getting off the boat (more big steps), visiting a bullfight, becoming the matador, and so forth. The baseball game may entail fans walking to the stadium (walking around the room, sometimes in a haphazard fashion to promote social interaction), doing the wave, being unexpectedly called upon by the manager to pinch hit (swinging an imaginary bat in both directions), or to do some relief pitching (using the right and left arms).

The class is not targeted to older adults at a particular fitness level, and participants may range from wheelchair-bound or walker-dependent to the very fit. One student typically leads the frail or less fit participants, often from a seated position; another student leads the more fit participants; and the remaining students are free to roam and to individualize movements for older persons with special needs or to promote safety among participants.

If the older adult has a specific health problem, like Parkinson's disease, stroke, an orthopedic condition, or mild confusion, the roaming students pay particular attention to helping him or her keep movements simple, avoid quick action, and provide caution with twisting movements. Before the first class, students will meet one-to-one with older adults to find out if additional cautions need to be observed and, if relevant, to discuss the importance of timing medications for maximal effect during classes.

Deconditioned older adults in the class are encouraged to perform at 1 or 2 on the modified Borg scale, or at 50% of the maximum heart rate for their age. Fit older adults may perform at 8 on the Borg scale, or at 70% of the maximum heart rate. The majority of older adults are at the

5 or 6 level, which is equivalent to the moderate effort required for brisk walking. People tend to be reliable self-raters using the Borg scale.

The emphasis in the class, however, is on having fun and only secondarily on moving up the scale to higher intensity levels. Several earlier studies have supported the surgeon general's findings that even activities of low- to moderate-intensity level not only improve the aerobic capacity of older adults, but are less likely than more vigorous activities to result in injury and are more likely to be maintained as a routine over time (Buchner & Wagner, 1992).

And though low- to moderate-intensity activity does not provide the fitness benefits of higher intensity exercise (Duncan, 1996), it can be sustained over a longer exercise period because it depletes only fat, the body's richest store of energy. Higher intensity exercise depletes carbohydrates and cannot be sustained for as long a duration (Keim, 1995).

Older adults in classes like ours that meet only 2 or 3 times a week need to be encouraged to comply with the surgeon general's advice and engage in aerobic exercise on most of the other days of the week as well. On days when there is no class, therefore, older adults are encouraged to engage in longer sessions of walking, swimming, cycling, dancing, gardening, yard work, or other activities that can be performed at low- or moderate-intensity level for a half hour or longer.

Finally, aerobic movement in our classes is always accompanied by music. One small study reported that music can promote better adherence to a regular exercise routine by adding to the enjoyment of the activity [Bauldof et al., 2002]. About two-thirds of the musical selections in our exercise class, such as big band music, are targeted toward the preferences of older adults. The students choose the remaining music, however, with an eye toward eclecticism (rock, rap, theater music, international music, etc.). Musical variety not only promotes greater interest in the class, but also generates humorous discussions about the quality of the musical selections by other people.

We start and end the class with slow-tempo music and pick up the pace in between. When the musical cadence is faster, the slower moving older adults are encouraged to time their physical movements to every other beat of the music. Occasionally, students will choose soft background music for the strength-building and flexibility and balance components of the class.

The Muscular Strength or Endurance Component

Experts did not always believe that strengthening exercises were as important for older adults as other components of exercise (Fries, 1989, p. 66), and many geriatric exercise manuals ignored strengthening exercises

altogether. Now experts and community health leaders realize the importance of strength building for maintaining an independent lifestyle with age. Preserving leg strength allows an older adult to get up from a chair in a restaurant or help regain balance before falling. Preserving arm strength allows an older adult to carry groceries, pick up household items, twist off jar lids, and make minor repairs.

Experts are therefore beginning to develop resistance training guideline recommendations for older adults (Porter, 2000). And though strength-building exercise programs are still the exception rather than the norm, the popularity of including a strength-building component into an aerobics exercise class has been growing quickly over the past several years. Overall, however, the CDC (2004) estimates that only 11% of adults aged 65 and older regularly perform any sort of strength training.

Muscular strength or endurance is the ability of the muscle to exert force (strength) or to repeat action over time without fatigue (endurance). As people age, lean muscle tissue tends to decrease, and the percentage of body fat increases. Thus muscle strength and endurance tend to decline with age, and bones tend to weaken. Strength training, however, will increase muscle mass, functioning ability, and bone density. When the skeletal frame is strengthened, the likelihood of bone fractures resulting from osteoporosis is reduced (Gorman & Posner, 1988; Jakes et al., 2001; Rhodes et al., 2000; Vincent & Braith, 2002).

In the spring of 1990, attitudes toward strength building for older adults began to change. A strength exercise program captured the media headlines—which previously, in the health arena, had been dominated by popular aerobic activities or unusual aerobic accomplishments (such as the exploits of Johnny Kelley, who completed the Boston Marathon race 58 times and ran his last one as an octogenarian).

This highly publicized strength exercise program involved 10 (including 1 dropout) frail, very old nursing home residents who, after completing an 8-week training program, almost tripled their leg strength, expanded their thigh muscles by more than 10%, and were able to walk 50% faster (Fiatarone et al., 1990). The participants ranged in age from 87 to 96 years! One 93-year-old participant reported,

> I feel as though I were 50 again. Now, I get up in the middle of the night and I can get around without using my walker or turning on the light. The program gave me strength I didn't have before. Every day I feel better, more optimistic. Pills won't do for you what exercise does! (Evans et al., 1991)

Another resident who at first could not rise from a chair without using his arms was able to do so after the training, and two others no longer needed canes for walking (Fiatarone et al., 1990).

Most community exercise classes do not have the luxury of providing weights or exercise machines to older participants. That is the case with my exercise class as well. I have found the most affordable and safest option for strength building to be elastic bands (such as the Thera-Bands or Dyna-Bands sold by Fitness Wholesale; go to http://www.fwonline.com, or call toll-free 888-396-7337) and gravity-resisting exercises like modified push-ups, raising arms to shoulder level and making circles, half-squats, toe raises, and others.

Elastic bands are a good alternative to free weights, which are more likely to lead to injury, and to resistance machines, which are less accessible. In addition to being safe and portable, they are inexpensive. By buying elastic bands in large rolls and cutting off 4-foot strips, I can provide bands to older students for about $1.80 apiece.

I typically include four or five different upper-extremity exercises to strengthen the biceps, triceps (see Figure 5.2), deltoids, trapezius, pectoralis, and latissimus. I then follow up with three or four lower-extremity exercises to strengthen the quadriceps, hamstrings, and gastrocnemius. The elastic band manufacturers provide the buyer with a range of illustrated exercises to follow. The booklets also include tips such as warming up, practicing smooth and slow movements in both eccentric and concentric directions, breathing while exercising, and emphasizing technically correct movements over squeezing out additional repetitions.

Elastic bands come in increasing resistance levels. Typically, I start most older adults using Dyna-Bands at the pink level and increase repetitions and sets before I consider moving up to the green level. Although the bands can be utilized at increasing levels of intensity, they are less precise than free weights or weight machines for measuring improvement.

I choose the resistance level that allows the participants to perform about 12 repetitions of an exercise. A larger number of repetitions places greater emphasis on endurance, and a smaller number of repetitions emphasizes strength. When it comes to repetitions, older persons should err on the side of endurance over strength.

In my class the number of different strength-building exercises and number of sets per exercise (usually two sets) are chosen to fit within a 15-min exercise period. I do not try to fit all the strength-building exercises into one 15-min component of the class but instead offer a few basic exercises each time, plus a few new exercises.

The elastic band fits easily into a pocket and is convenient to take to class, or anywhere else for that matter. A potential disadvantage to the band is that it can be hard to grip with arthritic fingers. This limitation can be overcome by buying handles or by tying the band into a circle and exerting power through wrists or forearms. Another disadvantage to the band

FIGURE 5.2 Horizontal triceps press performed in one of the author's exercise classes.

is that, eventually, it will break (which can startle, to say the least, when it occurs midexercise), and it needs to be replaced in a timely fashion.

The preferred schedule of activity for improving or sustaining strength or endurance for older adults is 2 or 3 days a week, with at least 1 day of rest between workouts. One study reported that muscle strength gains achieved during a 12-week progressive resistance training program can be maintained by resistance training only once per week thereafter (Trappe et al., 2002). Another study reported that even light resistance can help older adults get stronger, while at the same time reducing the possibility for injury (Vincent et al., 2002b).

A good alternative exercise for increasing strength in older adults with painful arthritic joints is isometrics, the contraction of a muscle without movement at the joint. The typical way to engage in isometrics is to pull or push against a stationary object, usually against a wall or against another body part. Each contraction should be held for about 5 s and repeated 3 times. Many exercise physiologists are reluctant to recommend isometric exercise for heart patients because of the increased likelihood of performing the Valsalva maneuver (i.e., holding one's breath). It is possible, however, to avoid this maneuver when doing isometrics.

Because there is no movement, you can do isometrics any place, any time, and at no cost. The muscle that you select tightens but does not change length, thus there is no movement of the joint or the bone to

which the muscle is attached. Isometrics, therefore, has the advantage of allowing you to build muscle at a fixed angle, avoiding those joint positions that may be affected by arthritic pain. On the other hand, unless you systematically alter the angle (at least 20°) you do not develop strength over the range of motion.

There are several problems to avoid with all strength-building techniques, but they can be especially problematic with isometrics. To avoid the unhealthy Valsalva maneuver, for instance, count slowly out loud to trigger continuous breathing. To improve range of motion, it is not only important to vary the isometric angle, but to develop opposing muscle groups (e.g., quadriceps vs. hamstrings). Finally, the Borg scale for estimating appropriate aerobic intensity level can also be used with isometric exercise.

My favorite isometric exercise for older adults is one that I developed to avoid the common problem of knee pain. In a seated position the adult places the palms of both hands on one leg, about 3 inches above the knee, pushing down with the hands and up with the knee. The angle of the knee is altered by raising it slightly off the ground and then raising it slightly higher two more times (see Figure 5.3). Repeat with the other leg. This exercise targets the important quadriceps muscle, the largest muscle in the body. It is a good alternative to leg squats, which can exacerbate knee pain.

In addition to building strength and endurance, my resistance-training component includes safety tips on how to lift objects and how to move one's body to avoid muscle strain, backaches, hernias, and the like. Injuries from weight lifting are not uncommon, and they increased by 300% from 1978 to 1998 for middle-aged women and men ("More People Lifting Weights," 2000). In weight rooms around the country you can observe frequent examples of incorrect techniques that lead to injury. Men typically are hoisting too-heavy weights, arching their backs, holding their breath, swinging the weights or otherwise using momentum, and dropping the weights (either free weights or machine weights) when done.

Instead, manageable weights and proper technique should be used. Lift slowly and smoothly, and return the weights under full control; maintain the natural curve of your back, exhale on exertion, and inhale as you relax. If you break form, the weights are too heavy. Weight lifters who use correct form actually reduce injuries by strengthening joints and ligaments (Marcus, 1997). Machine weights are safer than free weights because they help foster proper technique and prevent the weight from falling on you (Hesson, 1995).

Sixty percent of weight lifters are males, but women are joining them at a very quick pace. Women strength builders more than doubled between 1987 and 1996, from 7 million to 17 million, to join the 26 million men (Marcus, 1997). Women have learned that they need not fear building bulging muscles because they have less testosterone and

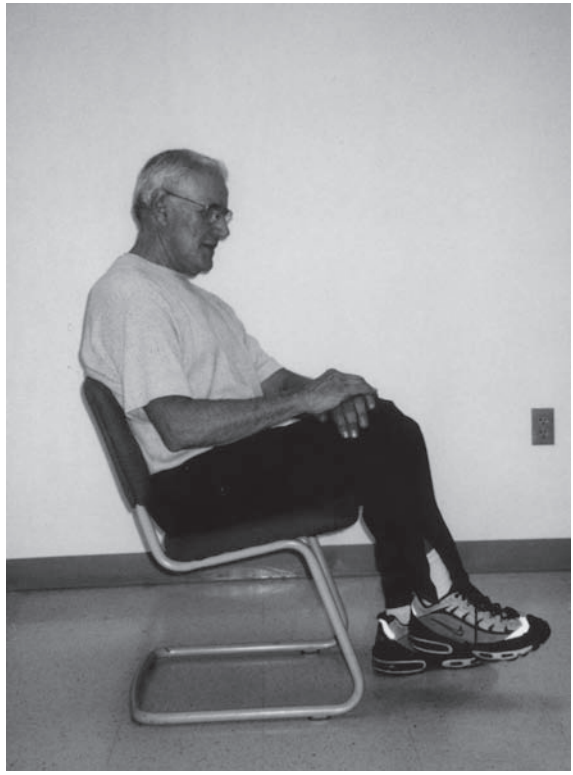


FIGURE 5.3 Isometric exercise for quadriceps that avoids knee pain.

fewer cells that make up muscle fiber. In addition to working toward a better appearance, women weight lifters enjoy the benefits of improving strength and balance and preventing osteoporosis.

Two research leaders who extol the benefits of resistance exercise (free weights, machines, isometrics, and rubber tubing), exercise physiologist William Evans and physician Maria Fiatarone, believe that strength building may be even more important for older adults than aerobic exercise. Although many physicians recommend walking because they think it is the safest activity, people who are weak have poor balance and are more subject to fall. Prescribing resistance exercise can give older adults the strength and confidence they need prior to beginning a systematic program of aerobic activity.

A joint effort by Tufts University and the Centers for Disease Control and Prevention has produced an online interactive program entitled "Growing Stronger: Strength Training for Older Adults." This online exercise program,

and a booklet on strength training, are available free at http://www.go.tufts.edu/growingstronger. Another resource on strength training is the Web site of Dr. Miriam Nelson (http://www.strongwomen.com), director of the John Hancock Center for Physical Activity and Nutrition.

The Flexibility and Balance Component

Different types of exercise activities for older adults result in different types of benefits. A study by King and associates (1997) reported that although programs emphasizing aerobics and strength building provide an array of benefits for older adults, flexibility exercises may be particularly well suited for improving the range of motion and reducing arthritic and other types of pain among older adults. It should be noted, though, that stretching as a method for preventing injury has not been supported by research (Thacker et al., 2004).

Ballistic stretching, using quick and bouncy movements, works against the protective reflex contraction and can result in muscle tears, soreness, and injury. Static stretching is the type of stretching I use in my exercise class and involves the slow and smooth advancement through a muscle's full range of movement until resistance or the beginning of discomfort is felt. The maximum position is then held 10–30 s, which allows for the reduction of the protective reflex contraction and additional range of movement.

Stretching should always be preceded by a brief aerobic warm-up in order to increase heart rate, blood flow, and the temperature of the muscles, ligaments, and tendons. Conversely, stretching while muscles are cold may sprain or tear them. In my class, therefore, aerobics always precedes stretching.

A good way to develop different flexibility routines for older adults is to complete the Arthritis Foundation's 2-day People with Arthritis Can Exercise (PACE) training program to teach stretching to older adults. In addition, you receive the PACE manual, which includes a brief description of the purpose of each of the 72 movements, an illustration that demonstrates how to do each stretching movement, an explanation of the functional benefits of each movement, and the identification of special precautions—particularly for persons with arthritis or osteoporosis. There is also a separate section on teaching tips. To find out more information about the training program or the manual (the manual can be obtained separately), contact the local chapter of the Arthritis Foundation, or call the national office in Atlanta at 404-872-7100.

In each of my 10-week or 12-week classes I attempt to bring in a yoga or Tai Chi instructor (preferably both) as an alternative activity in one or more of the stretching components of the class. The graceful movements and inner awareness of these techniques affect one's mind

as well as body and are popular with people of all ages, especially older adults. In several Chinese cities that I visited over the summer of 1978, I observed several outdoor groups of Tai Chi practitioners during my early morning jogging and noticed that a substantial number of the participants were older adults (Haber, 1979).

To demonstrate the popularity of yoga among older adults in the United States, I like to share the story of Sadie Delaney with the older students in my class. Sadie Delaney reported in her book that she began her yoga practice in her 60s and continued it for 40 years, the last several of which she followed a yoga program on television (Delaney et al., 1993). Sadie died in 1999 at the age of 109. She noted in her book that when her sister Bessie turned 80, she decided that Sadie looked better than she did, and Bessie then began doing yoga, too. Bessie, however, probably started too late to reap the same longevity benefits as did Sadie. Sadly, her life ended prematurely in 1995, at the tender age of 104.

The most popular yoga activity is hatha yoga, a sequence of stretching, bending, and twisting movements that causes each joint to move slowly through its maximum range of motion, then is held for several seconds and repeated (see Figure 5.4). These practices improve body awareness, reduce stress, improve balance and coordination, and increase the maximum range of motion by expanding joint mobility (Christensen & Rankin, 1979).

Hatha yoga and other types of stretching, twisting, and bending exercise programs possess two characteristics that make them highly desirable for older adults: They are well suited to all adults, even the very frail elderly (Haber, 1979, 1988a) and are exceptionally easy to incorporate into a daily routine. The movements of a stretching program, for instance, can be performed while one is watching television or talking on the telephone. Also, for people who engage in regular aerobic or strength-building activity, a brief flexibility routine can be added on at the end.

Performing yoga exercises in a group setting has become very popular with older adults. It is estimated that 18 million Americans are practicing yoga, a number that tripled during the 1990s ("Baby Boomers Turning to Yoga," 2000). For more than a decade I worked with older adults through the *Easy Does It Yoga for Older People* program (Christensen & Rankin, 1979), a widely used yoga program for older persons. I implemented yoga and related programs at senior centers (Haber & George, 1981–1982), congregate living facilities (Haber, 1986), nursing homes (Haber, 1988a), churches (Haber & Lacy, 1993), and other sites. Without exception the programs were enthusiastically received, and individual benefits were demonstrable.

For those interested in practicing yoga for therapeutic purposes the International Association of Yoga Therapists will locate therapeutic yoga instructors in local areas; call 928-541-0004 (http://www.iayt.org).

FIGURE 5.4 Shoulder roll from the *Easy Does It Yoga for Older People* program.

Though not quite as popular as yoga in the United States, Tai Chi has increased in popularity as well over the past 15 years. Tai Chi consists of slow, graceful movements that are derived from a martial arts form in Oriental cultures. It is gentle in nature and well suited to young and old. Persons of all ages in China can be observed practicing Tai Chi in groups in urban parks and in front of congregate housing (Haber, 1979). In addition to improving flexibility, Tai Chi is conducted with a lowered center of gravity (knees and hips held in flexion) and can contribute to lower-extremity strength building, body awareness, and balance control.

In terms of balance control, two rigorously controlled studies—part of a 3-year exercise research project sponsored by the National Institutes on Aging and the National Institute for Nursing Research—support the

contention that Tai Chi has favorable effects upon the prevention of falls (Wolf et al., 1996; Wolfson et al., 1996). One Tai Chi group endured 48% longer than a comparison group before a first fall (Wolf et al., 1996). By practicing the Tai Chi movements, older participants learn to stabilize their balance and regain it before they begin to fall.

Balance issues emerge slowly and subtly over the life cycle, beginning in the mid-40s and becoming more obvious by the mid-60s. Losing one's balance is a major contributor to falling, and each year, about one-third of persons aged 65 and older experience a fall, as do about half of persons over age 80. Even the *fear* of losing one's balance can curtail activity, and this strategy can be particularly counterproductive. Less activity leads to more weakness, and more weakness leads to more falls.

Regarding balance exercises, I include one or more of the following exercises at the tail end of some of my classes. All the exercisers stand next to a wall, chair, or something else that can be grabbed onto when needed:

1. *Toe raise*. Rise to tiptoes 10 times, reaching for support only if necessary. Repeat with eyes closed.
2. *One-legged stand*. Stand on one leg, flexing the other knee slightly. Balance on one foot for 10 s. Repeat with eyes closed.
3. *Tandem walk*. Walk across the floor, heel-to-toe, remaining next to a wall for support, if necessary.
4. *Sitting upside-down*. No way! I took this photograph of two Chinese acrobats while I was in China on a gerontology study tour (see Figure 5.5).

It is important to remind older adults that loss of balance can be due to a number of conditions in addition to the physical losses that accumulate through a sedentary lifestyle. These conditions include problems with the inner ear, medications, poor posture resulting from arthritis or osteoporosis, poor vision, and muscle weakness. To rule out these problems, nothing takes the place of an evaluation by a health professional. New ideas to improve balance—such as vibrating insoles (Priplata et al., 2006) and cobblestone mat walking (Li et al., 2005b)—are demonstrating promise on a regular basis.

The Health Education Component

One of the student instructors or one of the participating older adults will facilitate the health education topic (with volunteers obtained at the end of the previous class). The health education topic for the class can be one of an endless number of subjects: describing an experience with a complementary medicine technique, providing a brief description of

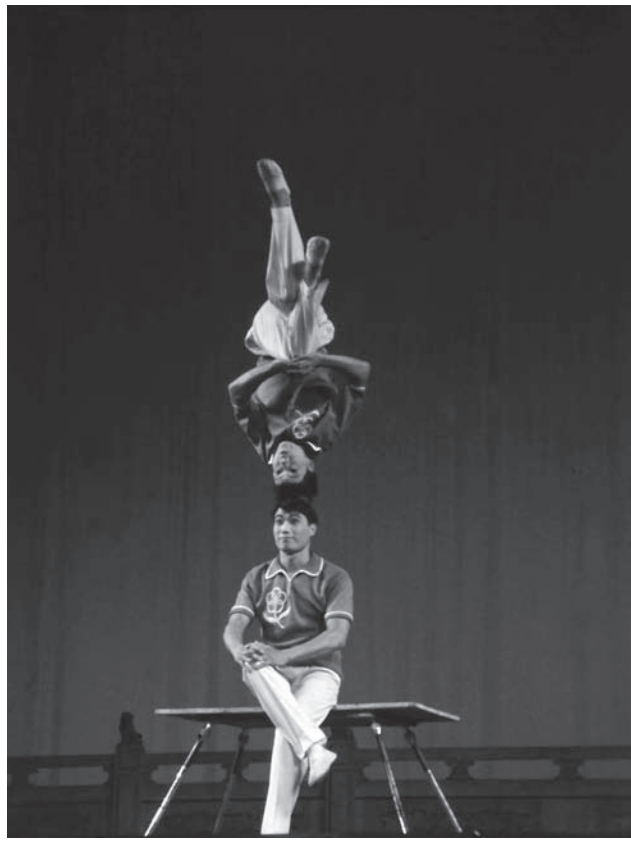


FIGURE 5.5 A photograph of two fellows with pretty good balance that the author took in China.

another health-promoting class in the community, sharing a healthy recipe, discussing fall prevention ideas, sharing a list of sleep hygiene techniques, discussing tips for improving memory, and so forth. The topic may also be presented as a demonstration, rather than pedagogically, such as leading a stress management exercise like deep breathing or progressive muscle relaxation.

OTHER EXERCISES

Power yoga (an Americanized version of *astanga* yoga) is a blend of flexibility and strength building that has become popular mostly in New York and California. It was introduced into America by the aptly named Beryl *Bender* Birch (1995). Power yoga differs from traditional stretching

programs that encourage relaxation into a pose while stretching in that proponents advocate for isometrically tensing specific muscles while relaxing the opposing muscles.

Vinyasakrama is another yoga variant that blends flexibility with aerobics instead of strength building. Rather than holding postures for a long time, students do a series of yoga movements without pause, synchronized with deep yoga breathing.

According to Andrew Weil, there is also disco yoga, tribal yoga (to the beat of African drums), aqua yoga, and iron yoga (with light hand weights). As blasphemous as it may seem, there are also yoga competitions where participants are judged on the precision, appearance, and gracefulness of their movements. Finally, there are hybrids like Yogilates, a blend of yoga and Pilates. Pilates (pronounced pi-LA-tees) is a technique that uses specially made exercise equipment with pulleys and springs to stretch and to strengthen your midsection. Trained instructors guide you through breathing exercises and a routine to help you move in a balanced way. To find a Pilates instructor in your city, call 800-474-5283.

The Alexander technique also attempts to promote balance and to retrain your body to carry itself properly, with particular attention to head, neck, and spine alignment. The technique combines good posture with simple movements to reduce muscle tension. To see if there is a program near you, call 800-473-0620. The Feldenkrais method is another alternative to train your body to move with efficiency and ease. A trained practitioner gently manipulates your muscles and joints to find the most comfortable ways to use your body. For more information, call 800-775-2118.

Two programs that emphasize muscle toning and stretching follow:

1. *The Sit and Be Fit program.* Developed by a registered nurse, Mary Ann Wilson, the program has been shown on public television for many years. If a program is not televised in your area, you can purchase a videotape for a general audience of older adults or for persons with specific health problems—arthritis, stroke, osteoporosis, Parkinson's, multiple sclerosis, or COPD. Contact Ms. Wilson at 509-448-9438 or by mail at Sit and Be Fit, P.O. Box 8033, Spokane, WA 99203-0033.
2. *Body Recall.* Dorothy Chrisman began her classes for persons aged 50 and older more than 30 years ago. For more information about the program, the location of classes around the country, teacher certification, or the Body Recall manual, contact Ms. Chrisman at Body Recall, Box 412, Berea, KY 40403.

For those readers who have found no variation of exercise to their liking, there is always the work of Dr. Sanders Williams, dean of the

Duke University School of Medicine. Dr. Williams is working on chemical pathways that muscle cells use to build strength and endurance. This could lead to the development of a drug that will let people get the health benefits of regular exercise by just taking a pill! If you run out of patience waiting for this pill, try obtaining one of the products that received these patent numbers:

#6,024,678: Vacuum cleaner leg exerciser. This invention consists of shoes with bellows so that when you walk around your house, you create suction that pulls dirt into a cleaning wand and then into a tank strapped on your back.

#6,042,508: Remote-control dumbbell. This remote is built into a contoured weight that you lift up and down to switch television stations. It also counts your pulse.

#5,984,841: Shower step master. This device makes you pedal in order to shower, with elastic bands that provide resistance. A side benefit is that you will not even know when you are sweating.

7,037,243: Cordless jump rope. A jump rope minus the rope; all that is left is two handles (with moving weights inside that simulate the feel of a rope moving) and a pretend rope. The truly lazy can pretend to jump over the pretend rope.

Special thanks to WellnessLetter.com for alerting me about the first three of these patented gems. Regarding the cordless jump rope, if you have your own silly idea to patent and want help, contact http://www.patentsilly.com.

Different Strokes for Different Folks

As the following chart of five exercise activities indicates, there is considerable variation in the types of benefits that can accrue, suggesting the importance of engaging in a balanced approach to exercise (Table 5.3).

TABLE 5.3 Different Exercises and Benefits

Exercise	Endurance	Strength	Flexibility
Swimming	High	Low	Medium
Brisk walking/jogging	High	Low	Low
Yoga	Low	Low	High
Tai Chi	Medium	Medium	Medium
Weight lifting	Medium	High	Low

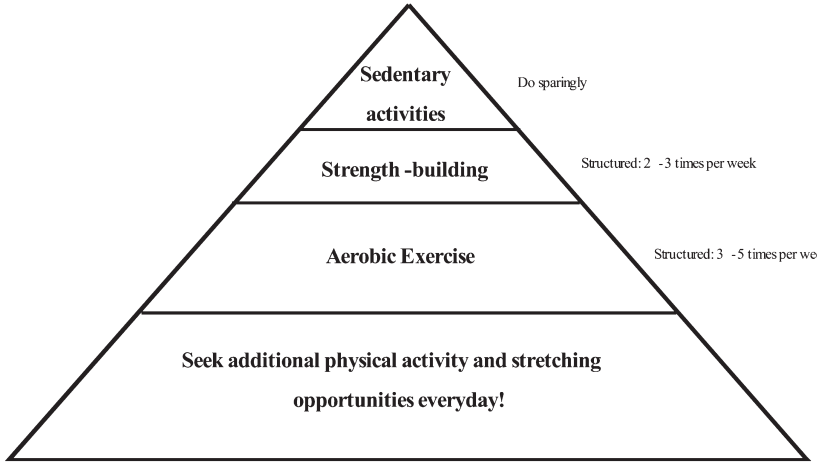


FIGURE 5.6 Activity pyramid.

It should be noted that each of the exercises below can be performed in such a way as to improve its ranking in each of the three categories (e.g., power yoga increases strength, high repetition weight lifting improves endurance, etc.).

THE ACTIVITY PYRAMID

Most people have heard of the U.S. Department of Agriculture's food guide pyramid (see chapter 6, Nutrition). Now several organizations have developed an *activity* version of it. Not having seen one that I like without modification, I offer my contribution in Figure 5.6.

Sedentary behaviors—like eating the junk food at the top of the food pyramid—should be done sparingly. It is acceptable to watch television and play computer games, and even to eat junk food while doing it, but doing it to excess is dangerous to your health. On the other hand, slothfulness every now and then is an excellent antidote for wellness self-righteousness.

Two to three "servings" of structured strength-building exercises per week are recommended. Medium or vigorous aerobic intensity, such as jogging and some recreational activities, is recommended 3 or 4 times a week for those who have left the ranks of the sedentary far behind. Light to moderate exercise, such as brisk walking, stretching, and finding additional activity bouts in the course of a day, can be done *every* day.

Incorporating additional activity bouts into your everyday routine can be done in a variety of ways. Park your car farther away from the store, use stairs instead of escalators, walk the dog, work in your garden, and, the most devious of all, do not use the remote control when watching television—and change channels frequently.

People who are sedentary need to focus their attention on the base of the pyramid. The everyday activity at the base of the pyramid is different from the exercises above it. Activity can be defined as any body movement produced by skeletal muscles which results in energy expenditure. It is in the lower sector of the pyramid that we can emphasize the healthy pleasures of spontaneity and enjoyment. Activities can be enjoyable when, for instance, they are turned into social occasions with family and friends. Or you can take advantage of spontaneity in the lower sector of the pyramid by stepping up the intensity level of, say, vacuuming. You not only get your housecleaning done, but you also obtain a free bout of exercise in your home using your vacuum cleaner (or your duster, mop, or other household exercise tool).

Exercise, on the other hand, is planned, structured, and emphasizes repetitive body movement. It is in these upper sectors of the pyramid where maintaining a routine, rather than spontaneity, is desirable. Routine exercise can be enjoyable too, though for me, the highlight is when I am done with it and can savor the way my body feels for several hours afterward.

ARTHRITIS: A BARRIER TO EXERCISE AND ACTIVITY

This story entitled "The Joys of Aging" has been circulating anonymously for years. It goes like this:

> I have become quite a frivolous old gal. I'm seeing five gentlemen every day. As soon as I awake, Will Power helps me get out of bed. When he leaves, I go see John. Then Charley Horse comes along, and when he is here, he takes a lot of my attention. When he leaves, Arthur Ritis shows up and stays the rest of the day. He doesn't like to stay in one place very long, so he takes me from joint to joint. After such a busy day, I'm really tired and ready to go to bed with Ben Gay. What a day!

One of the major barriers to performing resistance training, yoga, calisthenics, aerobics, and other types of exercise is arthritic stiffness and pain. In November 2002, the Centers for Disease Control and Prevention announced that 70 million Americans have arthritis or chronic joint pain, up from the previous estimate of 43 million. This public health problem is age related, with 19% afflicted among persons between the ages of 18 and 44; 42% between 45 and 64; and 59% aged 65 and older.

Osteoarthritis (degenerative joint disease), the most common type found among older people, ranges in intensity from occasional stiffness and joint pain to disability. This disease is affected by genetics, obesity, injuries, and overuse of joint movement. Rheumatoid arthritis is less common but can be more disabling. Although the cause is unknown, scientists believe it may result from a breakdown in the immune system.

Many people with arthritis think that any type of exercise will be uncomfortable, that is, cause joint or muscle pain or swelling of the extremities or be downright harmful and lead to decreased functional abilities. These indicators of exercise intolerance, however, will typically not take place if exercise is performed properly. In fact, it is more likely that the joints will stiffen, the muscles will weaken, and the ability to function will decline if regular flexibility and exercises are *not* performed.

To counteract arthritic stiffness, it may be necessary to briefly engage in flexibility exercises 3 or 4 times a day. It is also helpful to engage in strength-building exercise to strengthen the muscles that surround and support the joints and to force lubricating fluid into the cartilage that helps keep it nourished and healthy.

Rall and colleagues (1996) found that even people with severe rheumatoid arthritis could safely increase their strength almost 60% in a 12-week progressive resistance training program. A randomized trial comparing aerobic exercise and resistance exercise on older adults with knee osteoarthritis concluded that both types of programs are effective (Ettinger et al., 1997).

The advice of a physical therapist, occupational therapist, or nurse can be especially helpful when developing an individualized exercise program that balances exercise and rest. One way to minimize aches and pains is to relax joints and muscles prior to exercise by applying heat (or soaking in a warm bath) or ice packs and gently massaging muscles. Weight control can also help keep unnecessary stress from joints.

Another technique for conquering the challenge of aches and pains in order to exercise is to choose a time of day when one is subject to the least amount of discomfort, stiffness, and fatigue. People who are on medication may find that their optimal time coincides with the period during which their medicine is having its maximum effect. Many persons with arthritis depend on anti-inflammatory drugs to alleviate aches and pains and to allow them to exercise.

Many others hold out hope for a miracle medication that will not only alleviate their arthritic pain, but also reverse the disease process. One prospect in this regard, discovered by the public a decade ago, coincided with the publication of *The Arthritis Cure* (Theodosakis, 1997). The book touted two supplements, glucosamine and chondroitin sulfate, to stimulate the growth of cartilage and keep it from wearing down.

Although many arthritis sufferers are already convinced of the benefit of these supplements, a multicenter, randomized controlled trial was equivocal on these two supplements.

Over 1,500 patients with symptomatic knee osteoarthritis were randomly assigned to glucosamine and chondroitin (individually and in combination) or to placebo, with no significant differences in the reduction of knee pain between groups (Clegg et al., 2006). A subgroup of patients with moderate to severe knee pain did receive benefit from the combination of supplements, but subgroup analysis is unreliable and can only be considered exploratory.

Another option for avoiding arthritic discomfort is finding a more appropriate exercise routine, such as water exercise. An older adult, for instance, who believes she is aggravating an arthritic knee during her walking program may find an aquatic program more desirable than a land-based exercise program. Water provides buoyancy and can relieve some of the stress and strain of other exercise where gravity and weight are greater influences. Body weight in water is less than 10% of its weight on the ground. Also, if the water is sufficiently warm, it will allow greater range of motion since muscles stretch better when they are warm.

A free brochure from the Arthritis Foundation explains how to set safe exercise limits and includes tips for easing into exercises, such as taking a warm shower before engaging in exercise in order to loosen up. To obtain the brochure, contact the foundation at 800-283-7800 or via its Web site (http://www@arthritis.org).

Other Barriers and Cautions

There are several barriers to exercise besides arthritis and the belief that exercise is painful, unenjoyable, and perhaps even harmful. Some older adults, for instance, engage in a level of exercise that is inadequate or that lacks the proper intensity to meet their needs yet are under the mistaken belief that they are sufficiently active. Others have a problem with overexuberance, tackling an exercise program too strenuously and too quickly and suffering the consequences of injury (Kannus et al., 1989).

It is necessary to begin and end an exercise routine with an adequate warm-up and cool-down period consisting of gentle aerobics. It is important that the warm-up period begin with aerobics (walking, or a slow version of the exercise to be engaged in) and not stretching as the latter can create damage to the muscles and joints if the body temperature is not warmed up first. The cool-down period prevents blood from pooling in lower muscles, which reduces blood flow to the heart and brain and can cause faintness or worse. Cooling down may also prevent muscle stiffness and soreness by restretching muscles that are shortened during

exercise. One meta-analysis of randomized research trials, however, reported no significant effect of stretching on either muscle soreness or injury (Herbert & Gabriel, 2002).

Another inhibitor of activity is the fear of falling. More than one-third of community-dwelling elderly fall each year (Speechley & Tinetti, 1991). The potential for falling has been used as a justification for physical restraints in the nursing home (Evans & Strumpf, 1989). Fear of falling imposed by a caregiving spouse may be a significant barrier to exercising. Some risk, however, may have to be tolerated, but the risk may be reduced by exercising in a seated or lying position or by a change in medication.

Medication usage can contribute to falling. Medications may require that exercise participants modify their exercise routines by decreasing the duration and intensity of an exercise, increasing fluid intake, or foregoing exercise for a period of time (Kligman & Pepin, 1992). One should be alert for dizziness, faintness, and fatigue that may result from a wide variety of medications, especially ones that belong in these categories: antiarthritic, psychotropic, antihypertensive, antiarrhythmic, antiparkinsonism, antihistamine, decongestant, and barbiturates.

To treat injury to a muscle or ligament in the form of a strain, sprain, or tear, and to keep it from becoming worse, the most commonly recommended guideline is the acronym RICE, which stands for rest, ice, compression, and elevation. Rest the injured area immediately to cut down on blood circulation to that part of the body. Apply ice immediately, which shrinks blood vessels and reduces swelling. Compress the injured area with an elastic bandage or cloth to also help reduce swelling. Elevate the damaged part to a level higher than the heart.

Other barriers to exercise may include lack of transportation to an exercise facility, limited financial resources for joining a program, medical concerns, lack of access to consultation with a health professional, lethargy, inability to identify a pleasurable exercise that can sustain one's interest over time, and lack of time. Creative problem solving can overcome most barriers.

Some health professionals erroneously believe that older adults have considerably more discretionary time than younger adults (Haber, 1993b). A perceived lack of time, however, is as likely to be a problem among older adults as among younger adults (Dishman et al., 1985). In fact, a common response among older adults is that they lack the time for exercise because they provide care for a family member who is frail. Other older adults may also have a busy schedule that consists of sedentary hobbies, family events, and volunteer obligations.

In general, exercise is a safe activity: "Indeed, a remarkable aspect of research on exercise in the elderly has been the virtual absence of

reports of serious cardiovascular or musculoskeletal complications in any published trials. Thus, exercise should be viewed as safe for most older adults" (Elward & Larson, 1992, p. 45). This is not to suggest that exercise is hazard-free. Walkers and joggers oftentimes share a path with persons on bicycles, and rare collisions do occur. Overexertion in hot weather can lead to heat exhaustion (with symptoms of dizziness and a rapid or weak pulse) or potentially fatal heat strokes. High humidity is dangerous because the air is saturated with moisture, which prevents heat from leaving the body through perspiration.

Occasionally, older persons with unsuspected heart problems embark on exercise programs. To avoid this problem, individuals may consider an exercise stress test prior to beginning an exercise program. This test—consisting of treadmills, cycle ergometers, and steps—is designed to identify individuals without symptoms who may be at high risk of suffering a medical complication during exercise because of undetected heart disease. A review of several studies on stress tests, however, found that they are expensive, of unproven benefit to healthy older persons, and may serve as a deterrent to individuals who delay exercise until they get one (Firestone, 2000; Gill et al., 2000).

The U.S. Preventive Services Task Force does not recommend stress testing in low-risk adults who do not have symptoms of heart disease. Individuals with known or suspected heart disease, however, should consider the test. Abnormal responses to a stress test may consist of a failure of the blood pressure level to increase as work intensity increases; or a slow recovery of ventilation and heart rate; or an excessive shortness of breath, chest pain, or electrocardiogram changes, such as dysrhythmias. There are, however, an unusually high percentage of false positives (abnormal stress test results for people who can exercise) and false negatives (normal results for persons who should not exercise). False-positive tests can lead to additional psychological stress and invasive tests; false-negative tests can lead to delayed treatment.

SELECTED TOPICS

How to Respond to an Excuse

AARP's (now defunct) Staying Healthy After Fifty program (SHAF) listed the most common excuses for not exercising: fatigue, fear of heart attack or hypertension, trouble catching breath, need to relax, too old, bad back, and arthritis. Each excuse was examined during the SHAF program and exposed as a myth or a general misunderstanding that can keep an older adult inactive.

Some examples of responses to these excuses are, respectively, improved strength makes daily tasks easier and less tiring; an exercised heart is stronger, works easier, and can lower blood pressure; heart, lungs, and muscles become more efficient through exercise and make breathing easier; exercise can help relaxation; it is never too late to exercise—even nonagenarians benefit; bad backs are commonly caused by inadequate exercise, improper lifting, and poor posture; and exercise can alleviate the pain and stiffness of arthritis.

Benefits

A negative attitude also can be a barrier to exercise. When motivating someone to exercise, it is important to shift the emphasis from the negative—what will happen if you do not exercise—to the positive—how you will benefit if you do. The SHAF program listed benefits of exercise that are likely to motivate old and young alike: having fun; sleeping better; feeling more energetic; controlling body weight; feeling more relaxed; feeling stronger; increased joint flexibility; maintaining an independent lifestyle; improving heart, arteries, and lungs; new social contacts; improved morale and confidence; and enhanced agility and mobility.

If these benefits do not appeal, the humorist Erma Bombeck offered a particularly unique advantage to those who exercise: "The only reason I would take up jogging is so that I can hear heavy breathing again."

Health Club, Home, or Religious Setting

There were 41.3 million health club members in the United States in 2004, a 35% increase from 1999. About 25% of these health club members were over age 55, with baby boomers the fastest growing segment of the health club population. Bally Total Fitness centers and Gold's Gyms include older adults in their advertisements for new members. Curves, which targets middle-aged fitness novices, developed a 30-min circuit workout that led to the launching of 8,000 health clubs worldwide by 2005.

There are many advantages to membership in a health club. Most clubs offer at least one free session from a qualified trainer as part of the membership fee. Weight machines are excellent for beginners because they are easy to use, and they reduce injury by controlling your form and preventing a weight from falling on you. Most health clubs arrange machines in a logical order to promote a balanced approach to strength building. Free weights are offered as an alternative, and though more likely to produce injury, they involve stabilizing muscles that help you progress faster. Finally, aerobic and yoga classes are commonly offered at health facilities.

The downside is that a fee of more than $600 a year per individual is typical. Also, many older adults may feel shy or inadequate in a health club with a preponderance of young, fit participants. Finally, if motivation is marginal, sometimes all it takes is the prospect of a 15- to 20-min drive to the health facility to put you off.

Before joining a health club, it is wise to visit more than one, to go the same time of day that you intend to exercise, to determine if the classes are reasonable for your level of fitness, and to find out if a staff person is certified by a nationally recognized senior fitness organization to work with people who have age-related health issues. Additional questions for assessing whether the health club is age-friendly follow:

1. Is the music acceptable and set at a reasonable level?
2. Are the display panels on the equipment easy to read, change, and understand?
3. Do the treadmills start slowly, at 0.5 mph?
4. Are there recumbent bikes, and do they have comfortable seats?
5. Does the strength-building equipment have low starting resistance, less than 5 pounds?

Exercising in the home setting, on the other hand, is as convenient as it gets. You do not have to worry about how you look, and you do not have to adapt to other people's musical tastes. The investment is a one-time expense consisting of weights, weight machine, treadmill, stair stepper, or other preferred equipment. If money is a barrier, an excellent exercise routine can be devised from using the floor, wall, chair, and your own body weight, or using household items as weights or using a jump rope.

The downside is that you may be distracted by a ringing telephone, the television set, or a family member. You may also lack the peer support of an aerobics class or role models doing strength building. Home exercise equipment typically lacks the variety of a health club.

If you are going to buy a piece of exercise equipment for your home, consider the low-tech treadmill. One study (Zeni et al., 1996) reported that the walking or jogging machine outperforms a rowing machine, a cross-country skiing simulator, a stationary bicycle, and a stair stepper when it comes to burning calories. Regardless of the home exercise equipment you purchase, check a consumer magazine for recommendations, try out the equipment before you buy, and remember that flimsy, uncomfortable, or noisy equipment is likely to wind up as a clothes rack.

An interesting alternative to the health club or home setting is the faith-based fitness movement. Synagogues and churches are hosting a growing number of fitness programs. A fitness and nutrition program

called First Place has been tried in 12,000 churches. Faith-based fitness is more likely to focus on fellowship and community and less likely to be competitive or appearance-conscious. Sometimes an exercise session may end with a meditation or a prayer. Whether religious or not, however, two messages can easily apply to all exercisers regardless of setting: treat your body as your temple, and focus on both inner and outer health.

Two Web sites that relate to exercise and religious institutions are (a) http://www.beliefnet.com, which offers spiritually oriented information on fitness for many faiths, and (b) http://www.jcca.org, to find a Jewish community center that provides fitness programs and equipment.

Personal Trainer

Is it worth $60–$85 an hour for a personal trainer? If you can afford it, the answer is yes, both in terms of expertise and motivation. Want to make sure that your instructor is certified? Ask about their certification, and call to check on their credentials. Most qualified trainers have been certified by at least one of the following organizations:

American College of Sports Medicine, 317-637-9200 (http://www.acsm.org)
National Strength and Conditioning Association, 719-632-6722 (http://www.nsca-lift.org)
American Council on Exercise, 800-825-3636 (http://www.acefitness.org)
Aerobics and Fitness Association of America, 800-446-2322 (http://www.afaa.com)
International Association of Fitness Professionals, 800-999-IDEA (http://www.ideafit.com)
Cooper Institute for Aerobics Research, 972-341-3200 (http://www.cooperinst.org)
National Association for Fitness Certification, 800-324-8315 (http://www.body-basics.com)
Arthritis Foundation PACE Instructor Training, 800-364-8000 (http://www.arthritis.org).

Most exercise certifications are not specific for leading exercises with older adults. Make sure that the organization and instructors are experienced with working with older persons.

There are also a number of online fitness trainers that match your personal health statistics and goals with a predesigned training program. Some sites send the user a daily e-mail prescribing that day's exercises; others display an exercise regimen on a personal monthly calendar that

can be downloaded to a handheld computer. Online sites produced by a single trainer tend to be less sophisticated and may merely consist of a training plan with illustrated exercises that are mailed to you.

The Role of the Health Professional

The percentage of inactive older adults would likely decrease if physicians were more inclined to recommend the health benefits of exercise to clients (Elward & Larson, 1992). Eighty-five percent of adult respondents report that a physician's recommendation would help motivate them to engage in regular exercise (Harris et al., 1989).

Yet over the past 20 years, physicians have not been so inclined. In 1983, less than half of the primary care physicians surveyed reported routinely asking patients about their exercise habits (Wechsler et al., 1983). A few years later, results from seven surveys of primary care physicians cited that an estimated 30% of all sedentary patients received counseling about exercise (Lewis, 1988). In 1999, a survey of 6,000 older adults aged 50 and older reported that only half of the respondents said their doctor asked about their level of physical activity or exercise during any of their medical checkups over the past year (Kruger et al., 2002). Perhaps owing to lower expectations, physicians are even less likely to ask patients aged 65 and over to change a health behavior than their younger patients (Callahan et al., 2000; CDC, 2002).

The barriers to physician's counseling older patients include a lack of time, training, teaching materials, knowledge, reimbursement, and confidence in getting compliance from their patients (Kearney, 1998; Kushner, 1995). Perhaps some of these barriers can be avoided by using other health professionals in the office. There have been examples of nurses being effective with reaching out to patients and encouraging them to exercise. Two nurses, moreover, reported that merely posting a sign by the office elevator giving directions to the nearest stairs is a good way to promote physical activity (Jones & Jones, 1997). Other nurses have been creative with implementing exercise programs for even the most physically and mentally compromised individuals (Colangelo et al., 1997).

QUESTIONS FOR DISCUSSION

1. What do the surgeon general and Joan Rivers have in common?
2. After reviewing the impact that exercise has on several diseases and conditions, why do you think most people still do not engage in regular exercise?

3. Can you think of one way that you could improve upon my community-based exercise class?
4. If an older adult was willing to begin aerobics or strength building (but not both), which one would you start them off with, and why?
5. A client reports to you that friends of his have been injured while exercising, and he heard about one older person who had heat stroke while walking briskly and died. He has decided that it is safer to not exercise. How would you respond?
6. An older person wants to know if she should exercise for a longer period of time at a lower intensity level, or a shorter period of time at a higher intensity level. How would you counsel this person?
7. Is it essential that all older persons seek physician approval before participating in any type of exercise program? Explain your answer.
8. Role play with a partner. Can you counter every excuse that your partner offers for not exercising by suggesting an idea that will encourage your partner to exercise?
9. A client calls you and complains that the surgeon general only recommended moderate exercise, like brisk walking, and that she is doing a fairly rigorous aerobic class, with strength building included. She wants to know if she should exert this extra energy if it does not seem to matter. How would you advise her?
10. In addition to adding pounds of weight to a barbell (or increasing the resistance level of elastic bands), how many other ways can you think of to increase the challenge to your muscles?
11. Has your physician ever talked to you about exercising? If so, did he or she offer guidelines or suggestions or provide follow-up? Were you satisfied with your physician's involvement—or lack of it—with exercise counseling? Why?
12. Have you tried elastic bands or isometrics for strength building? If so, what is your opinion of them? If not, what do you think about trying these two options?
13. Why is strength building more important for older adults than for younger adults?
14. Which do you prefer, the target heart rate or the Borg technique? Why?
15. Have you tried one of the more unique exercise options like Pilates or another activity that may be a bit out of the mainstream? If so, what did you think about it? Do you think this option would be appropriate for older adults? Why?

16. What is the primary difference between flexibility exercises and yoga movements?
17. What has been *your* major barrier when it comes to engaging in exercise on a regular basis, and have you attempted to overcome it? If so, how?
18. If you have a regular exercise routine, does it include aerobics, strength building, *and* flexibility exercises? If not, why?
19. If you are or were a member of a religious institution, what kind of unique ideas can you come up with for planning, recruiting, implementing, and sustaining an exercise program at your institution?
20. Examine one other topic in this chapter that you found interesting and has not been explored when answering the previous questions. Why did you find this interesting?

CHAPTER SIX

Nutrition

A dietitian was making a presentation to a group of older adults at a senior citizens' center. She began her talk by asking, "Over the long term, what is the single worst food that you can eat?" Immediately, an older woman in the front of the audience stood up and declared, "Wedding cake!"

Older adults may have a sense of humor about their eating habits, but they most definitely take the topic seriously as well. One national study reported that older people were more conscientious about managing their diets than those who were middle age (Harris et al., 1989). In this sample, a higher percentage of those over age 65 (approximately two-thirds) than of those in their 40s (one-half) reported trying "a lot" to limit sodium, fat, and sugar; eat enough fiber, lower cholesterol, and consume enough vitamins and minerals.

If older adults are paying more attention to their nutritional habits, one can only speculate that they may be motivated by more immediate feedback (heartburn, constipation, and so forth) or feelings of greater vulnerability (higher risk of impairment from disease and of loss of independence). The next cohort of older adults—today's baby boomers—bring more than motivation to the table. They also bring a higher formal education level, including a strong interest in health education.

Advertisers are taking notice of the baby boomers reaching older ages. A series of clever television commercials in 1997 targeted the Kellogg's Frosted Flakes that boomers used to eat when they were kids. Sales of this product increased appreciably as boomers combined their former love of this sugary cereal with appreciation for the statement on the cereal box that proclaimed, "This product meets the American Heart Association's food criteria for healthy people over age 2 when used as part of a balanced diet."

Apparently, the boomers and the American Heart Association (AHA) are not paying as much attention to the high sugar content on the nutritional label. The AHA criteria for its stamp of approval includes limits on only fat, cholesterol, and sodium content. The AHA does have one more criterion: the willingness of the food manufacturer to pay them for their stamp of approval—$7,500 per product the first year, and $4,500 annually thereafter. Many healthful products made by small manufacturers are unwilling to pay the fee.

Middle-aged boomers and older adults are influenced not only by the AHA's stamp of approval, clever advertising, and an interest in reviving earlier eating habits, but are also influenced by nutritional content. Sometimes, however, it is difficult to ascertain the nutritional value of food. In 1993, for instance, newspaper headlines and television news announcers proclaimed the importance of bran in the diet but reversed those claims when the findings of a single research project with a small sample size indicated that the importance of bran was questionable.

Before the year was out, a new announcement declared, once again, that bran was an important component of the diet. By 1996, several controlled research studies supported the finding that bran and other forms of fiber reduced the risk of colon cancer and heart disease ("End of Debate," 1996). This was followed a few years later, however, by impressive studies that used randomization and large sample populations and concluded that a high-fiber diet did not reduce colon cancers (Alberts et al., 2000; Michels et al., 2000; Park et al., 2005; Schatzkin et al., 2000). Other studies reported positive results with whole-grain intake and the reduction of cardiovascular disease and increased longevity (Jensen et al., 2006; Sahyoun et al., 2006).

The frequent controversies can be confusing and sometimes amusing, but they should not detract from the sensible advice that guides most educated adults. The best recipe for good health is moderation and balance, including ample fiber in the diet and avoiding excessive fat, sugar, and sodium.

THE FOOD GUIDE PYRAMID

In the spring of 1991, there were health-related headlines questioning whether the long-standing circle that depicted the four food groups should be changed to a pyramid. This was not merely a question of geometrical aesthetics. The equally divided circle implied that the four food groups—bread and cereal, vegetable and fruit, milk, and meat—were equal in value, whereas the pyramid better portrayed the desirable balance of foods we needed to eat, that is, showing more complex carbohydrates on the bottom of it and less fat and protein above it.

The pyramid implied a hierarchy of value, with greater emphasis (i.e., space in the triangle) at the base, which is devoted to bread, cereal, pasta, and the like. Higher up are vegetables and fruits, followed by dairy products and meat and, at the narrow apex, the sinful fats, oils, and sweets (see Figure 6.1).

However, after 11 years of study that led to the launching of the pyramid in 1991, the U.S. Department of Agriculture quickly dropped the pyramid and returned to the circle. Many accused the agency of caving in to the dairy and meat industries. Supporters of the retraction denied the political pressure, though not very convincingly (Nestle, 2002). They claimed that the pyramid concept overlooked the recent surge of low-fat dairy products and leaner meats that made these foods more acceptable. Also, because we still have to worry about anemia, malnutrition, and calcium deficiency, the claim was made that we should not cut back on milk and meat.

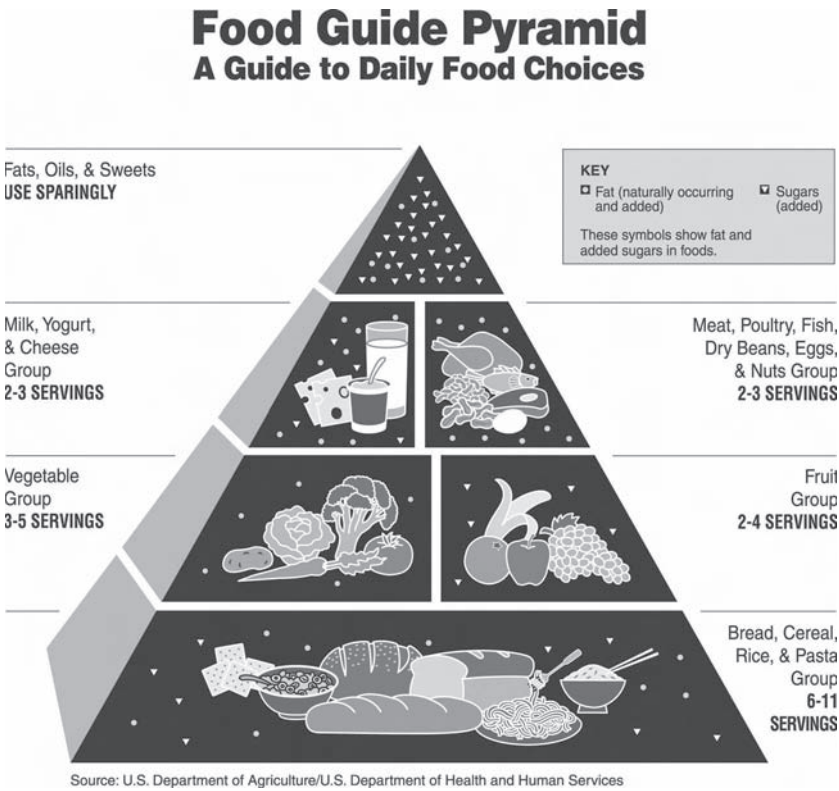


FIGURE 6.1 Food guide pyramid.

Note. From the U.S. Department of Agriculture/U.S. Department of Health and Human Services.

One year later, however, the pyramid concept overcame the dairy and meat industry lobbyists and became the accepted figure for good nutrition. Registered dietitians and nutritionists recommended more daily selections from the bread and cereal group (6–11 servings) and the vegetable and fruit group (5–9) and fewer daily selections from the milk (2–3) and meat (2–3) groups than they previously did.

Most Americans, however, fell short of achieving the recommended number of servings in the important bottom parts of the pyramid: grains, cereals, breads, rice, pasta, vegetables, and fruit (Nestle, 2002). These deficiencies occurred despite the fact that it was not as difficult to achieve the recommended number of servings in these food groups as most adults thought. A pyramid serving is typically smaller than the so-called average helping depicted on nutritional labels (to be examined later in this chapter). One slice of bread or half a bagel, for instance, is a pyramid serving, as is one-half cup of cooked cereal, pasta, rice, most vegetables, and cut or canned fruit. The servings on your plate, therefore, often represent more than one serving within a food pyramid group.

Modified Food Guide Pyramid for Adults Aged 70 and Over

Although the food guide pyramid became the standard in 1992, appearing in classes in the public school systems and on shopping bags in supermarkets, less than a decade later, it began to accumulate considerable criticism. The main problems were that the carbohydrates at the base of the pyramid did not differentiate between the complex and more refined food products; that the protein categories did not differentiate between products that had high saturated fat content, such as red meat, and other products like fish, beans, and nuts; and that the fat category at the top of the pyramid did not differentiate between monounsaturated, polyunsaturated, saturated, and partially hydrogenated fats.

Another line of criticism had to do with *not* targeting the food guide pyramid to different age groups, particularly to older adults who have been lumped together into the 50 and over category by nutritionists for many decades. The first change in the modified food pyramid for mature (70 plus) adults (Russell et al., 1999) was to add a new foundation to the pyramid—eight 8-ounce glasses of water. Older adults have a reduced thirst mechanism and must consciously think of hydration in order to avoid cardiovascular and kidney complications as well as constipation. Also, a flag at the top of the pyramid served as a reminder to older adults that many of them were not able to get adequate amounts of calcium, vitamin D, and vitamin B_{12} and that supplements in these areas may be necessary.

Yet this modified pyramid was clearly not sufficiently revised. The bottom of the pyramid should have been exclusively complex carbohydrates, and the refined carbohydrates should have been placed at the top of the pyramid and eaten sparingly. In the protein categories and at the apex of the pyramid, there needs to have been a differentiation between fats, with saturated and partially hydrogenated fats at the top and eaten sparingly and the monounsaturated and polyunsaturated fats lower down. In other words, fish, beans, nuts, vegetable oils, and similar products should be consumed in greater amounts than red meat, butter, refined carbohydrates, and sweets.

MyPyramid

The federal government's 2005 Dietary Guidelines for Americans—the guidelines are redrafted every 5 years by the U.S. Department of Agriculture (USDA) and the Department of Health and Human Services (DHHS)—produced not only a 70-page blueprint for nutritional policy, but a revised food guide pyramid, dubbed MyPyramid (see Figure 6.2), and a Web site (http://www.mypyramid.gov). The food guide pyramid had not been updated for 13 years, and the Web site was a brand new initiative. The entire update had been billed as an interactive food guidance system rather than a one-size-fits-all initiative.

The food guide MyPyramid update engenders a whole host of positive and negative reactions, and I will start with the positive. The content of the dietary guidelines appears to reflect more of the thinking of the scientific community than in the past, and the industry-representing USDA and its food industry lobbyists appear to have had less influence than in years past. The guidelines basically encourage Americans to eat fruits, vegetables, whole grains, and low-fat or fat-free dairy products, and there is much more detail on the consumption of these foods than was provided by previous guidelines.

Fruits and vegetables are increased from 5–9 servings to 5–13 servings (or 2.5–6 cups). Salt guidelines are specific for the first time, limiting it to one level teaspoon a day. Other first-time improvements: trans fat is identified, and the advice is to keep it as low as possible; saturated fat limitations have become specific, keeping it to 10% of calories or less; cholesterol level is to be less than 300 mg; added sugars or sweeteners are discouraged for the first time, particularly in drinks; whole grains are differentiated from the broad category of carbohydrates, and the recommendation is three or more 1-ounce servings, or half the grains should be whole grains.

The old pyramid used ambiguous serving sizes, while the new one has switched to cups, ounces, and other (allegedly) easier-to-grasp household

FIGURE 6.2 MyPyramid.

Note. From the U.S. Department of Agriculture Center for Nutrition Policy and Promotion.

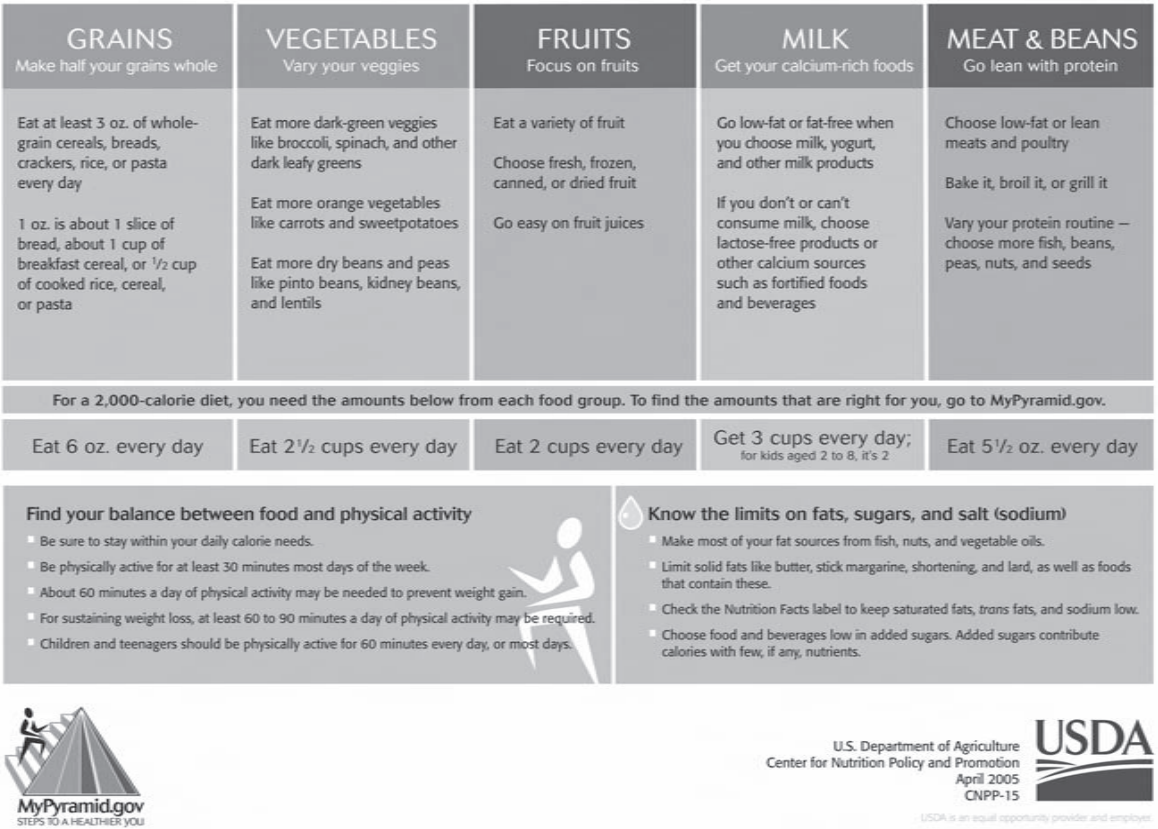


FIGURE 6.2 *(continued)*

measures. The old pyramid ignored exercise, while the new one advises a half hour a day (though the Institute of Medicine [IOM] has meddled once again by recommending a daunting "up to 90 minutes a day" for those interested in sustaining weight loss). School lunches and programs that provide meals to seniors have to follow the guidelines, so these constituencies will be receiving more whole grains, fruits, and vegetables and less salty foods and sugary drinks.

Finally, on the good side of the ledger, the Web site lets people assess their diet and exercise habits. Depending on a person's age, sex, and activity level, the new pyramid comes in 12 versions. The user will get specific dietary recommendations on grain, vegetable, fruit, milk, meat and beans, total fat, saturated fat, cholesterol, sodium, oils, and fats and sugars. Types and duration of each physical activity is assessed as well, with specific recommendations. The Web site is interesting and informative.

Now for the dark side. There is no budget for mass media or other educational initiatives, so the overall effort can be considered a token one. And while the Web site is very good, only the most motivated and educated—the ones who are least likely to need guidance—are likely to access it. The new pyramid symbol, which most Americans *will* see, is *not* good. Perhaps no symbol can adequately capture and disseminate useful information, but this one is very confusing. The symbol is a triangle with six colorful vertical stripes of differing widths representing unlabeled food groups and a stair-climbing stick figure on its side.

The new image is cryptic and tells you nothing about how to eat. There is no text with the pyramid, (though I provide a chart from the Web site here—see Figure 6.2), and you have only a vague idea about what the symbol means. It is not surprising that the new graphic was created by a public relations firm rather than one with an educational mission. Perhaps this firm's close links with the food industry contributed to this most visible aspect of this nutritional effort, being useless for educating the general public on good nutrition.

The new pyramid symbol does not make a distinction between animal and vegetable protein, with saturated fat differentiated from healthier oils. Red meat and butter should be separated and discouraged, and olive, canola, and other vegetable oils encouraged within the caloric limits of the consumer. The guidelines continue to include refined starch with whole grains and sanctions eating as much as half the grains as refined starch. Instead, white bread, white rice, and other refined carbohydrates should be separated from whole grains. There is also a recommendation to drink three glasses of low-fat dairy products a day, which some claim to be not sufficiently supported by research.

Bottom line: this 4-year, $2.5 million initiative will not significantly impact on the nutritional intake and rising obesity of the American population. Perhaps any effort was doomed to failure since much of the salt, fat, and sugar that is in processed and prepared foods lies outside of consumer control, and the food and drink industry spends billions of dollars in advertisement promoting these products.

THE PERSONALIZED NUTRITION BULL'S-EYE

Nutritionist Covert Bailey may have been the first to develop a replacement for the food guide pyramid, calling it the nutrition bull's-eye (Bailey, 1996). The goal of the bull's-eye is for people to consume the nutritious foods that are listed in the center of it. These foods are low in saturated fat, sugar, and sodium, and high in fiber. They include skim milk, nonfat yogurt, most fruits and vegetables, whole grains, beans and legumes, and water-packed tuna. As you move to the foods listed in the rings farther away from the bull's-eye, you eat more saturated fat, sugar, sodium, and low-fiber foods. In the outer ring of the bull's-eye, therefore, are most cheeses, ice cream, butter, whole milk, beef, cake, cookies, potato chips, and mayonnaise.

Unlike the food guide pyramid, Bailey's bull's-eye makes important distinctions *within* food categories. Whole-wheat products, for instance, are in the bull's-eye, while products from refined white flour and with added sugar are placed in the outer circles. Fresh fruits and vegetables are in the bull's-eye, but juiced vegetables and fruit that lose fiber and that concentrate sugars are placed in a ring just outside of the bull's-eye. Skim milk, low-fat, and nonfat cottage cheese and part-skim mozzarella are in the center ring, while whole milk and most cheeses are in the outer circles of the target.

The bull's-eye has been recognized as a useful modification of the food pyramid, and copyrighted alternatives have been developed and published, differing in one aspect or another from the Bailey version. In 1999, for instance, both *Men's Health* and *Prevention* magazines published their own bull's-eyes. The *Men's Health*'s adaptation allows readers to keep score in order to gauge their nutritional state of affairs. Every food or drink that is consumed in the course of a day that is listed in the bull's-eye nets you 5 points; in the next ring, 4 points; and so forth, until you reach the outer ring, which nets you zero points. Add up your points at the end of the day, and find out where you fall on the continuum: from nutritional sainthood to needing to make an emergency telephone call to a registered dietitian.

The *Prevention* rendition has three concentric rings, all of which include healthy foods. In the bull's-eye center are the highest levels of

antioxidant-rich foods and beverages, followed by rings of foods and fluids that are lower in antioxidants but rich in other key nutrients. *Prevention* magazine recommends servings in each ring and, similar to the *Men's Health* version, offers you points in each zone. The goal is to achieve 5,000 points a day and, unfortunately for this model, the accumulated points are negatively labeled as anti-aging points. It seems to me that these are *pro*-aging points that allow you to live healthier and perhaps longer.

I offer my own personalized version of a nutrition bull's-eye. In this version you begin with a blank bull's-eye and then add food and drink products that you usually consume to each of the rings. The foods and drinks in Suzie Que's bull's-eye (see Figure 6.3) are clearly superior; the second ring is not quite as nutrient dense; the third ring is neutral, products that are not particularly harmful or helpful; and the outer ring includes the least nutritious foods and drinks that should be consumed sparingly.

In the center and innermost ring of the personalized bull's-eye you also add the foods and drinks that you are not currently consuming but that you find sufficiently desirable and are considering adding to your diet (in italics in Figure 6.3). The assignment of food and drink products to each of the rings is likely best done with the aid of a dietitian, who can assess their nutritional value. (Darson Rhodes and Mandy Puckett, former nutrition students at Ball State University, identified products for Suzie Que's personalized nutrition bull's-eye.)

If it provides additional motivation, you can add a scoring system to this technique. One system might consist of the following: Add 50 points for each item in the outer ring, no points for items in the third ring, subtract 2 points for items in the second ring, and subtract 10 points for items in the bull's-eye.

Add up your points, which I call pennies (real ones), and at the end of each month (or year), if your point count is on the plus side, send that amount of money to the Center for Science in the Public Interest (CSPI, P.O. Box 9661, Washington, DC 20077, or http://www.cspinet.org), an advocacy organization that has had substantial impact on improving nutrition in America. Because I have not coordinated this effort with the center itself, do not be surprised to find that if your point count is on the minus side, you are unlikely to receive a check from them.

GOOD NUTRITIONAL HABITS

The principles of moderation, selectivity, variety, and balance are widely believed to be the keys to healthy eating. Reduce the size of portions;

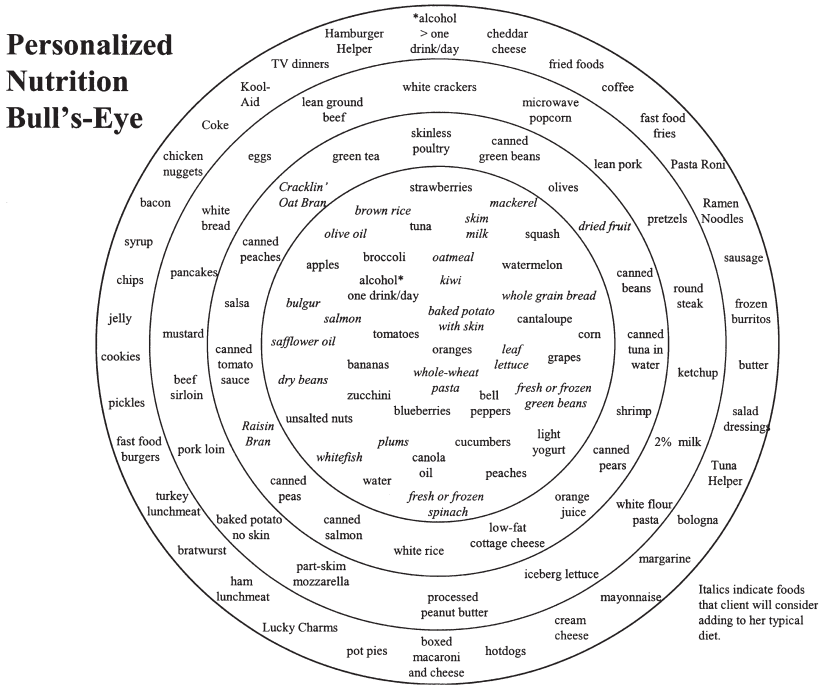


FIGURE 6.3 Personalized nutrition bull's-eye.

consume less sugar, saturated fats, and salt; and consume more fiber, including a balance of vegetables, fruits, and whole-grain breads and cereals. Interestingly, these recommendations are not too different from what the USDA first proposed by way of dietary recommendations in 1917 (Nestle, 2002)!

Although 95% of the American people believe good nutrition is based on these principles (American Dietetic Association, 1990), they find these principles easier to endorse than to practice. The good news is that some progress has been made. The USDA reported that Americans consumed less fat over the past decade. The bad news is that during this time period, people consumed more calories.

Diet is only one component in the development and exacerbation of disease (heredity, environment, medical care, social circumstances, and other lifestyle risk factors also play a part), but eating and drinking habits have been implicated in 6 of the 10 leading causes of death—heart disease, cancer, stroke, diabetes, atherosclerosis, and liver disease—as well as in several debilitating disorders like osteoporosis and diverticulosis ("Are You Eating Right?," 1992).

Basic Nutrients

Nutrients are substances in food that build and maintain body tissues and are necessary for bodily function. Nutrition education helps us learn how to provide our bodies with the more than 40 nutrients they need. Good dietary habits help us feel energetic and avoid obesity and other health problems, whereas poor nutrition contributes to feelings of fatigue and weakness and contributes to health problems.

The basic categories of nutrients are carbohydrates, fats, proteins, fiber, water, vitamins, and minerals. Carbohydrates—sugars (simple carbohydrates) and starches (complex carbohydrates)—are our main source of energy. Fats provide a reserve of energy. Proteins are needed for the growth and repair of tissues. Fiber aids in the regulation of bowel function. Water—the main ingredient in the body—provides the proper environment for the body's processes, which vitamins and minerals help to control and regulate (Hurley, 1992). Large quantities of fats, carbohydrates, protein, fiber, and water, and small quantities of vitamins and minerals, are needed by the body.

FATS

The highest percentage of doctor visits, short-stay hospital visits, and bed disability days can be attributed to cardiovascular diseases like heart disease, hypertension, and atherosclerosis. The nation's number one killer, the heart attack, is responsible for 45% of all deaths, or 650,000 per year.

Between 1970 and 1985, the annual number of deaths from heart disease declined by 39%. Between 1981 and 2000, heart disease and stroke death rates fell by one-third for those aged 65 plus. Public education was given much of the credit for this decline; Americans not only became more knowledgeable about the risk factors for heart disease—smoking, lack of exercise, high blood pressure, sodium, obesity, cholesterol, and fats—but began to do something about them.

The American public became particularly well informed about fats. In 1984, 8% of Americans considered fats their greatest dietary concern; by 1992, 48% designated it their major concern. Many Americans shifted their beliefs from cholesterol being the chief health problem in their diet, to fats, which have been implicated in both heart disease and cancer (Hurley, 1992).

Saturated fats have a stronger effect than dietary cholesterol in raising blood cholesterol and increasing vulnerability to heart disease. Dietary cholesterol inhibits, to some extent, the amount of cholesterol our bodies produce, a compensatory mechanism that helps keep blood cholesterol levels in check. Only 20% of the population is very sensitive to cholesterol-rich diets ("Are You Eating Right?," 1992).

Fat is an essential part of our diet and a major source of energy. It is the most concentrated energy source, with each gram of fat supplying nine calories to the body. Most Americans consume too much of it. According to data from the USDA's food consumption surveys, the average consumption of fat has always been high, reaching 40% in the 1970s and declining to 33% of total calories in 1994, which is still above the recommended limit of 30%. In recent years, however, fat consumption has leveled off, while the recommendation for daily fat intake has declined among some nutritionists to 25% or even 20% (Hoeger & Hoeger, 1997). The IOM (see the September 5, 2002, report at http://www.iom.edu) has recommended a range of 20% to 35% of total calories from fat, arguing that a range can be more flexible and useful for dietary planning.

Strong evidence indicates that high-fat diets cause obesity and increase the risk of heart disease and cancer. Yet food manufacturers are not in the business of helping us reduce the fat in our diets. They may, in fact, even be willing to fool us. Foods that were labeled "cholesterol-free" for many years, for instance, were also high in fat, examples being peanut butter, cookies, nuts, granola, vegetable shortening, and oils.

Another way to fool the public has been through partially hydrogenated fats or trans fatty acids that for years managed to escape detection on nutritional food labels. Many processed foods contained trans fatty acids, such as crackers, cookies, pastries, deep-fried products, candy, cakes, and TV dinners. The only way to have determined if this kind of fat was in a food product prior to 2006 was through a chemist in a laboratory. Trans fats are solid fats that are created by chemically adding hydrogen atoms to a liquid oil. This hydrogenation process makes the fats artificially hard at room temperature and helps products last longer on store shelves. It also, however, appears to raise blood cholesterol about as much as saturated fats ("Trans: The Phantom Fat," 1996).

Margarine was considered for a number of years to be a healthy alternative to butter. This belief was compromised, however, when it was discovered that margarine relied heavily on trans fatty acids, which made it about as unhealthy as the saturated fat in butter ("Trans: The Phantom Fat," 1996). The only margarine exception is with products like Promise, which are made without trans fat.

As far back as 1993, the CSPI and other advocacy agencies called for the Food and Drug Administration (FDA) to expose trans fat and add it to the nutrition label. Thirteen years after the CSPI petitioned the FDA to require trans fat on nutrition labels, in 2006, the FDA finally required it. It still managed to avoid being added to the saturated fat total, though, and the label still does not disclose the percentage of a day's worth of trans fat that a serving of the product contains (as is required for other ingredients).

As trans fat gained attention in the public media over several years, McDonald's responded by announcing it would cook French fries in oil with less trans fat. In 2005, however, McDonald's settled an $8.5 million lawsuit for failing to inform consumers that they did not follow through on this decision. At around the same time, Frito-Lay announced (and followed through on) the elimination of trans fat from its most popular salty chips, such as Doritos, Tostitos, and Cheetos, and replaced it with corn oil. As 2006 approached, Frito-Lay was not alone. Just before trans fat had to be listed on the food label, many food manufacturers chose to eliminate it from their products.

After an unsucessful effort in 2006 by the New York City Board of Health to persuade restaurants to eliminate trans fat voluntarily, the board voted to ban artificial trans fats from all restaurant foods by July 1, 2008. This type of ban is not without precedent, as Denmark has successfully banned trans fat in restaurant food, and all restaurants—including McDonald's—have complied in that country.

Not All Fats Are Created Equal

The *Mediterranean diet* became very popular, beginning in 1997, as Americans discovered that the countries along the Mediterranean had among the lowest rates of coronary heart disease and many common cancers found in the Western world. This near-vegetarian diet was high on bread, potatoes, fruit, vegetables, fish, wine, and olive oil, and low on meat, cheese, butter, and margarine. Research reported that the diet lowered overall mortality (Knoops et al., 2004; Trichopoulou et al., 2005) and reduced the risk for Alzheimer's disease (Scarmeas et al., 2006).

Surprisingly, the diet is not low in fat, with more than 35% of calories coming from it, primarily from olive oil, which consists mostly of monounsaturated fat. Thus Americans began to extol the virtues of olive oil and other monounsaturated and polyunsaturated fats like canola, safflower, sunflower, corn, sesame, soybean, and peanut oils.

Monounsaturated fats are the best type of fat because they appear to slightly lower low-density lipoprotein (LDL) but leave the high-density lipoprotein (HDL) intact, or may even raise it a little (Curb et al., 2000; U.S. Department of Agriculture Research Service, 1997). Polyunsaturated fats, such as sunflower, corn, and soybean oils, appear to lower LDL but may be less desirable because they may slightly lower HDL as well.

Saturated fat, solid at room temperature and contained in butter, cheese, and meats, is more damaging than the liquid fats. Saturated fat is converted into LDL, the cholesterol that clogs arteries. It should be noted, however, that *all* fats are a mix of saturated, monounsaturated,

and polyunsaturated fatty acids, so even the best fats contain some saturated fat.

Researchers suggest that we should be less concerned about overall fat content and more concerned about what types of fat we eat (Hu et al., 1997). Wolk and colleagues (1998) conducted animal studies and reported that monounsaturated fat lowered the risk of breast cancer by 45%, while polyunsaturated fat raised it by 69%. However, not all polyunsaturated fats are created equal. Omega-6 is abundant in vegetable oils, particularly sunflower, corn, and soybean oils, and is less healthy than omega-3, which is found in fish like salmon, and in nuts, green leafy vegetables, tofu, flaxseeds, and canola oil. Unfortunately, more than 90% of the polyunsaturated fats we consume are omega-6 ("Dietary Fat," 2001).

Most nutritional experts fall short of suggesting that total fat content is now irrelevant, provided we obtain most of it from monounsaturated and polyunsaturated omega-3 fats. They point out that the Mediterranean-style cooking is healthy not just because it limits saturated fats, but because it relies heavily on vegetables, grains, and beans (de Lorgeril et al., 1999; Trichopoulou et al., 1999). Moreover, the people in the Mediterranean countries have benefited from being traditionally more active than Americans and more successful at burning off excess fat (Brody, 1998).

In 1996, the AHA summed it up best when it amended its advice on dietary fat by suggesting that Americans emphasize monounsaturated fats but also pay attention to total fat. Every tablespoon of olive oil, for instance, supplies 120 calories, and excessive weight raises the risk of heart disease, cancer, and diabetes.

Calculating Fat Content

Fat is more fattening than comparable amounts of protein or carbohydrates; each gram of fat contains nine calories, compared to four in protein and carbohydrates. Ideally, we would calculate fat content by separating out saturated fat and trans fatty acids in our diet and limiting them to 10% of calories instead of the current level of 15% or 16% ("Dietary Fat," 2001). This separation was impossible to achieve prior to the change in nutrition labels on January 1, 2006, that included trans fatty acids and is still infeasible since trans fat is not included as a percentage on the label. Thus the emphasis continues to be on what is easiest to obtain, calculating total fats consumed, and limiting them to 30% or less of total calories.

The formula for computing the percentage of total calories in foods that come from fat is as follows: Multiply the number of grams of fat in

a food by 9 (each gram of fat contains nine calories) and divide the result by the number of calories per serving.

This formula can reveal that a food that is advertised as 97% fat-free can be much fattier than it implies, depending on the percentage of calories per serving that consists of fat. A cup of whole milk with 8 g of fat, for instance, may be advertised as 97% fat-free. Using the formula, however, 8 g is multiplied by 9 (72) and then divided by the number of calories per serving (150). Thus a whopping 48% of the calories in whole milk come from fat. In 2% milk, 38% of the calories come from fat (still a high-fat food, despite the low-fat label on the carton), and in 1% milk, 18% of the calories come from fat.

The 30% fat guideline does not eliminate the consumption of high-fat products. Indulging in high-fat milk or ice cream, for instance, can be balanced by low-fat foods that lower the overall fat intake average to 30% of daily calories. This can be accomplished by eating more fruits and vegetables (which have practically no fat) and fewer foods that are all fat (butter and margarine, for instance). The same is true for celebrating special days like birthdays and holidays, when high amounts of fat are likely to be consumed. A steady diet that stays within the guidelines for fat consumption on other days will help to average out the exceptional days.

Using low-fat products can lower fat intake. Many of these products may not be to our taste, but others probably are. In 1990 alone, nearly 1,000 new food products were introduced to the American public ("Are You Eating Right?," 1992). If appetizing low-fat foods cannot be found, fat content can be lowered by avoiding deep-fried foods, choosing lean cuts of meat, trimming visible fat from meat, and baking, broiling, or roasting rather than frying food.

The number of allowable grams of fat per day can be calculated by estimating the number of calories consumed per day (2,000 calories, for example), multiplying by 0.3 (to reach the goal of 30% of total calories, in this instance, 600), and dividing by 9 (because each gram of fat contains nine calories), producing the number of grams (approximately 67 in this example) of allowable fat. A much simpler technique (and much rougher approximation) is dividing your ideal weight, say, 140 pounds, in half and allowing yourself that number (70) of grams of fat.

CHOLESTEROL

Cholesterol is a lipid, that is, a waxy, white, fatty substance that is manufactured by the liver and supplemented through the diet. Excess cholesterol can cling to the interior walls of the arteries and restrict the flow of

blood to the heart. Eventually, it can narrow the passage sufficiently so that a heart attack results.

Two types of proteins, called lipoproteins, carry cholesterol: LDL and HDL. Researchers believe that LDL carries cholesterol toward the body cells, leading to plaque buildup, and that HDL carries cholesterol away from the cells to the liver to be further processed and excreted. Saturated fat in the diet increases the LDL lipids in the blood. Exercise and smoking cessation will increase the HDL lipids in the blood (Evans et al., 1991). The AHA recommends a total cholesterol level of less than 200 mg and an HDL of 40 mg or higher. The recommended ratio between the two is 4.2 or less for middle-aged and older persons.

Cholesterol received a great deal of public attention during the 1980s. The Multiple Risk Factor Intervention Trial (MRFIT) added to this attention by evaluating a program that included lowering cholesterol and blood pressure levels among its goals. After 6 years, the men in the treatment group in this sample of 350,000 had lower cholesterol levels than did those in the control group (Stamler et al., 1986). Among the study subjects who lowered their cholesterol levels to under 180 mg, the risk of mortality for heart disease or stroke was 3–4 times lower than among those who had cholesterol levels over 245 mg.

In 1985, the National Heart, Lung, and Blood Institute set up the National Cholesterol Education Program (NCEP). The NCEP reported that 60 million American adults, including 24 million aged 60 and over, had borderline or high cholesterol levels. Because heart disease and stroke rise sharply with the cholesterol count, a federal campaign to lower the cholesterol level was launched.

The implications of the research findings on cholesterol level in *older* adults were unresolved in the 1990s. One major limit to the studies that linked heart disease risk to cholesterol level was the lack of evidence determining whether data on middle-aged men can be extrapolated to older persons who have been studied much less extensively.

Some experts, like P. J. Palumbo, MD, director of clinical nutrition at the Mayo Clinic in Rochester, Minnesota, endorsed the popularly held belief of many health professionals that older persons can tolerate a higher level of cholesterol than the general adult population (*AARP Bulletin*, 1990). Other experts, like William Castelli, MD, director of the Framingham Heart Study in Massachusetts, believed that older adults may be even more vulnerable than others to the effects of a high cholesterol level, and the standards should be more, not less, stringent (*AARP Bulletin*, 1990).

Although the data are limited, a summary of research 15 years later supports the benefits of managing cholesterol levels in older adults and also recommends cholesterol-lowering medication for high-risk groups,

independent of age (Aronow, 2005). It should be noted, though, that few patients in these studies were 80 years of age or older (Wilson, 2005).

National Cholesterol Education Program Guidelines: 2004

Under the National Cholesterol Education Program Guidelines, the number of Americans who were recommended for cholesterol-lowering drugs increased from the 13 million designated under the 1993 guidelines, to 36 million under the 2001 guidelines, to 43 million under the 2004 update. This tripling of persons who were recommended for lipid-lowering drugs will help many people avoid heart disease, stroke, and other major vascular events. But it will also challenge American consumers who cannot afford the drugs (particularly true among those too young to qualify for Medicare Prescription Part D, but also for those who do qualify as the legislation still falls short of helping some older Americans afford statins). Two-thirds of one sample of persons taking cholesterol-lowering drugs were not as compliant as they should have been, partly due to the increased financial burden ("Cholesterol-lowering Drugs," 2001). Medications may be efficacious in clinical trials but not effective in community practice.

The newest guideline clearly represents a more aggressive approach to the treatment of high cholesterol, and a more complicated one as well. In 1993, an LDL of 160 mg/dl was considered the cutoff for treatment for most individuals; now it can be 160, 130, 100, or even 70 mg/dl, depending on a host of other factors like age, total cholesterol level, adult-onset diabetes, blood pressure, abdominal fat, family history, and smoking. The recommended HDL level is not as complicated, but the approach has become more aggressive. The recommended level used to be 35 mg/dl in 1993; now it has increased to 40 mg/dl.

Although exercise and dietary interventions are noted in the revised guidelines, they are dismissed as *not* having been effectively introduced into the lifestyle of most Americans. A health promotion policy advocate, however, would suggest that only a small portion of the estimated $300 billion that would be spent on those being recommended for cholesterol-lowering drugs could fund a coordinated research initiative to examine how clinicians can more effectively counsel patients to improve their nutritional and exercise habits.

CARBOHYDRATES AND FIBER

Carbohydrates are the starches (complex carbohydrates), sugars (simple carbohydrates), and fiber in our diet. Complex carbohydrates are found

most commonly in breads, dry beans, potatoes, grains, pasta, carrots, peas, and corn. Many older adults have subscribed for years to the myth that all carbohydrates, especially bread and pasta, are fattening. In fact, when carbohydrates are whole grain, they are moderate in calories and rich in fiber and nutrients.

Grains are the seed-bearing fruits of edible grasses. Each kernel of grain has a nutritionally dense germ, or seed, at its core, and a layer of bran that surrounds the kernel itself. When grains are refined into white flour, white rice, and so forth, a process that began in the 1940s, the bran and germ of the whole-wheat kernel are removed through the milling process, losing fiber, vitamins, and minerals, but not fat content.

The term *whole grain* means that the kernels are unrefined, still containing the germ and the protective bran coating. The germ provides fiber, B vitamins, and vitamin E; the bran contains fiber. The most familiar whole grains are wheat, barley, oats, rye, rice, and corn, and the uncooked grains can be added to boiling water or simmering soup. When whole grains are a regular part of the diet, the risk for cancer, heart disease, and adult-onset diabetes declines (Blumenthal, 1996; Liu et al., 2000; Rimm et al., 1996).

However, when grains are ingested exclusively in the form of mashed potatoes, white rice, and other processed foods that have little of their fiber left, the starch converts quickly to sugar. Thus it is important to pay attention to the nutritional bull's-eye. Just as all fats are not created equal, the same holds true for carbohydrates and other nutrients.

Vegetables and fruits are complex carbohydrates that are low in fat and high in fiber, vitamins, and minerals. The exceptions are items like olives, avocados, salads with high-fat dressing, and vegetables that are fried or seasoned with margarine or butter. Unfortunately, the most popular vegetable is the fried potato, that is, French fries. Not counting the dubious French fry, Americans of all ages tend to eat less than half of the recommended amount of fruits and vegetables. A diet rich in fruits and vegetables protects against cardiovascular disease, cancers, and other morbidities (van Duyn & Pivonka, 2000).

Fiber is the indigestible residue of food (e.g., the husk, seeds, skin, stems, and cell walls) that passes through the bowel and is eliminated in the stool. It appears to have a positive effect on cholesterol reduction, though scientists do not know exactly how this works. Fiber is a natural laxative that promotes regularity, adds bulk to stool, absorbs water, and reduces the amount of time that stool is in the bowels. A diet that is high in fiber is especially important in later years, when constipation is likely to be a problem. Among persons aged 65 years and older, a diet high in fiber will lower the risk of cardiovascular disease (Mozaffarian et al., 2003).

Nonetheless, only about 5% of American adults follow the National Cancer Institute's recommendation to eat at least 20 g of fiber a day.

This did not stop the Institute of Medicine from issuing new guidelines (Dietary Reference Intakes, September 5, 2002, at http://www.iom.edu) that raise the recommended amount of fiber grams per day for adult men aged 50 and under to 38! On the bright side the panel did not make an unrealistic recommendation for older adults.

Fiber supplements like Metamucil do not contain the essential nutrients found in high-fiber foods, and their anticancer benefits are questionable ("The Many Benefits," 1996). Some older adults rely on laxatives that are costly and in the long run self-defeating because they create a so-called lazy bowel. Although laxatives and supplements are not effective complements to fiber, fluid intake is. In fact, fiber needs fluid to be effective, and about 64 ounces of water daily is recommended ("The Many Benefits," 1996).

About half of the American diet consists of carbohydrates, and many nutritionists recommend that this be increased to 55% to 60%. We can calculate carbohydrate needs by multiplying the estimated daily caloric intake by 55% and dividing by 4 (four calories are derived from each gram of carbohydrate vs. nine calories from each gram of fat). Thus if 2,000 calories are consumed per day, 1,100 calories (55%) or 275 g (divide by 4) of carbohydrates are needed. The key, of course, is to focus most of the 275 g on complex carbohydrates.

SUGAR

Sugars (also referred to as fructose, glucose, dextrose, maltose, lactose, honey, syrup, molasses, etc.) are carbohydrates. Some are naturally present in nutritious foods, such as fruit and milk, but a good many are added to foods. Added sugar provides calories that have no nutritional value (i.e., empty calories), while increasing the likelihood of dental caries. Natural sugar in fruit, vegetables, and dairy products differs from added sugar in that it is accompanied by vitamins, minerals, and fiber.

Much of the sugar we ingest is hidden; 29% of Heinz tomato ketchup is sugar, as is 30% of Wish Bone Russian salad dressing, 65% of Coffeemate nondairy creamer, 51% of Shake 'n Bake, and a certain percentage of some unlikely foods like soups, spaghetti sauces, frozen dinners, yogurts, and breads (Hurley, 1992).

The American population consumes more than double the recommended amount of sugar ("Are You Eating Right?," 1992), and the amount of sugar consumed by the public has steadily increased over the past 15 years (Brody, 2000a). The movement toward low-fat foods worsened the trend as many low-fat foods used sweeteners to make up for the lost fat flavor. Many low-fat foods result therefore in only a small caloric reduction—or no caloric reduction—from their full-fat counterpart.

The CSPI petitioned the FDA to change nutrition labels so that sugar can also be included in the percentage of the daily value it represents. At the present time, however, it is listed in grams as a subset of carbohydrates, but it is exempted from the category "percentage of daily value." A nutritionally sound diet should probably derive no more than 10% of its calories from added sugar, a percentage that is almost half of what is consumed by the average American (Neville, 2000).

Recommendations for added sugar range from 8% of calories by the CSPI to up to 25% of calories by the IOM as part of their September 5, 2002, report (http://www.iom.edu). The high end of the IOM's more liberal recommendation is obviously not meant for the average American, given that the panel was especially concerned about the rapidly rising number of people who are overweight or obese.

PROTEIN

Proteins form antibodies, which help the body to resist disease and enable the growth and repair of body cells—organs, muscles, skin, bones, blood, and hair. Amino acids, the units from which proteins are constructed, are the end products of protein digestion. Complete protein foods contain, in proper amounts for adults, eight essential amino acids that must be available for the body to properly synthesize protein. Fish, dairy products, and eggs—complete protein foods—contain all the essential amino acids.

Proteins obtained from vegetables are low in some of the essential amino acids. Previously, it was believed that protein complementing needed to occur within a *single* vegetarian meal, but that theory has been discredited. Moreover, proteins obtained from vegetable intake may have the added benefit of decreasing bone loss and the risk of hip fracture more than proteins obtained from meat and cheese (Sellmeyer et al., 2001). The theory behind this research is that unlike plant protein, animal protein produces an overflow of sulfuric acid into the bloodstream, and in order for the body to neutralize this excess, it must leech calcium from bones.

Protein should account for an estimated 12% to 20% of the total calories in the diet (Moore & Nagle, 1990), and Americans tend to get at least that much. Older adults who are ill, however, are the most likely segment of society to experience protein deficiency. They suffer loss of appetite and oftentimes eat very little, if any, meat because of the cost, denture problems, lack of ability or desire to cook, or philosophy. Protein deficiency in older adults can result in a lack of vigor or stamina, depression, poor resistance to infection, impaired healing of wounds, and slow recovery from disease.

WATER

Although we can get by without most nutrients for several weeks at a stretch, we cannot survive without water, even for a few days. Water is the medium in which all the reactions in cells take place. Water lubricates joints; transports nutrients and salts throughout the body; hydrates the skin; promotes adequate blood volume; moistens the eyes, nose, and mouth; carries waste; and regulates body temperature. Nevertheless, older adults tend to drink only about 3 cups a day, less than half the water they need. This is due in part to reduced thirst perception with age.

Inadequate hydration can have many deleterious effects, beginning with constipation and fatigue and moving on to hypotension, hyperthermia, dizziness, breathing difficulties, and irregular heartbeats. Prolonged dehydration can lead to a variety of diseases (Jones & Ross, 1999). It is therefore important that older adults with inadequate fluid intake build up gradually to drinking approximately 8 cups of fluids per day, regardless of thirst.

Dehydration in the elderly was responsible for an estimated 1.8 million days of hospital care at a cost to Medicare of at least $1.1 billion in 1991 (Weinberg & Minaker, 1995). The American Medical Association's Council of Scientific Affairs recommended that undergraduate, graduate, and continuing education programs for nurses, allied health professionals, and physicians include the importance of hydration in older adults ("AMA Urges Awareness," 1995).

Water, juice, and milk meet hydration needs. Additional water required by the body is obtained from foods. More than 80% of many fruits and vegetables, about 50% of meat, and about one-third of bread consists of water. Alcohol, caffeinated tea and coffee, and soft drinks raise fluid levels more modestly because of their diuretic effect. One study, however, reported that caffeinated drinks do not dehydrate the body more than noncaffeinated drinks (Grandjean et al., 2000).

Alcohol consumption is not effective for hydration purposes. However, moderate alcohol consumption of one to two drinks per day may lower cardiovascular risk (Baer et al., 2002; Mukamal et al., 2003) and dementia risk (Ruitenberg et al., 2002).

VITAMINS AND MINERALS

Vitamins in the right amounts are needed for normal growth, digestion, mental alertness, and resistance to infection. The body also needs 15 minerals that help regulate cell function and provide structure for cells. Since 1941, the Food and Nutrition Board of the National Academy of

Sciences has published the recommended dietary allowance (RDA) for the majority of vitamins, minerals, and protein that we require and have updated these recommendations every few years based on research findings. RDAs are the average daily dietary intake levels that are sufficient to meet the nutrient requirements of nearly all healthy individuals (97% to 98%) in a particular life stage and gender group.

In 1998, dietary reference intakes (DRI) were developed, which added additional guidelines, such as tolerable upper intake level (highest safe intake level), to warn against the potential for adverse effects. Although the surplus water-soluble vitamins (C and eight of the B vitamins) are excreted in urine, adverse effects can still result from exceeding the upper-level recommendations. The surplus fat-soluble vitamins (A, D, E, and K) are stored in body tissue, and excessive amounts can become toxic. The body is especially sensitive to too much of vitamins A and D.

RDAs (see Table 6.1) have been difficult to establish, especially for older adults, who have been broadly defined for the past several decades as persons aged 51 and over. Although we know that increasing age alters nutritional requirements, the Food and Nutrition Board had delayed for many years the establishment of separate categories for adults over 50, based on insufficient research data. The insufficient data have been caused by such problems as inadequate numbers of older adults in research studies, higher nonresponse rates from older adults, and the confounding influence of selective mortality. In addition, vitamin, mineral, and protein requirements for older adults in particular are complicated by physiological changes, living arrangements, transportation access, and disability (Wakimoto & Block, 2001).

As the research base has improved over the past decade, RDAs are being expanded into a broader range of categories. The most important change regarding older adults has been to create a separate category for people aged 50 plus (vitamin B_6, calcium, iron) and to differentiate adults aged 51–70 versus adults older than age 70 (vitamin D).

A meta-analysis of studies focused on nutrition and age reported that nutritional intake declines with age (Wakimoto & Block, 2001). This is not surprising as energy output and muscle mass decline with age as well. Along with nutritional intake decline, though, potentially important declines in protein, zinc, calcium, folate, thiamin, riboflavin, and vitamins D, E, B_6, and B_{12} were observed (see Table 6.2). This raises questions that cannot yet be answered by research: Should nutrient intake *decline* with age, given that energy output declines as well, or *increase* with age, given that absorption and utilization efficiency decrease with age?

TABLE 6.1 Recommended Dietary Allowances (RDA) for Selected Vitamins and Minerals by the National Academy of Sciences

Vitamin/mineral	RDA	Upper level	Food/drink sources
Vitamin A	Women: 700 mcg Men: 900 mcg	3,000 mcg	Liver, fatty fish, carrots, fortified foods
Carotenoids	None	None	Fruits and vegetables
Thiamin (B_1)	Women: 1.1 mg Men: 1.2 mg	None	Breads, cereal, pasta, whole-grain flour
Riboflavin (B_2)	Women: 1.1 mg Men: 1.3 mg	None	Milk, yogurt, whole-grain flour
Niacin (B_3)	Women: 14 mg Men: 16 mg	35 mg from supplements	Meat, poultry, seafood, whole-grain flour
Vitamin B_6	Women 50+: 1.5 mg Men 50+: 1.7 mg	100 mg	Meat, poultry, seafood, fortified foods, liver
Vitamin B_{12}	2.4 mcg[a]	None	Meat, poultry, seafood, dairy, fortified foods
Folate	400 mcg	1,000 mcg	Orange juice, fortified foods, fruits and vegetables, beans
Vitamin C	Women: 75 mg Men: 90 mg	2,000 mg	Fruits and vegetables, fortified foods
Vitamin D	Ages 51–70: 400 IU[a] Ages 70+: 600 IU[a]	2,000 IU	Sunlight, fatty fish, fortified foods
Vitamin E	33 IU: synthetic 22 IU: natural	1,100 IU 1,500 IU	Oils, whole grains, nuts
Vitamin K	Women: 90 mcg Men: 120 mcg	None	Green leafy vegetables, oils
Calcium	Ages 50+: 1,200 mg[a,b]	2,500 mg	Dairy, fortified foods, leafy green vegetables, canned fish
Phosphorus	700 mg	3,000 mg	Dairy, meat, poultry, seafood
Selenium	55 mcg	400 mcg	Seafood, meat, poultry
Magnesium	Women: 310 mg Men: 400 mg	350 mg from supplements	Green leafy vegetables, nuts, whole-grain breads, cereals

(continued)

TABLE 6.1 *(continued)*

Vitamin/mineral	RDA	Upper level	Food/drink sources
Iron	Women 50+: 8 mg Men: 8 mg	45 mg	Red meat, poultry, seafood, whole-grain flour
Zinc	Women: 8 mg Men: 11 mg	40 mg	Red meat, seafood, whole grains, fortified foods

[a] Age 65+ probably need a supplement.
[b] NIH recommends 1,500 mg.

TABLE 6.2 Nutrients and Clinical Manifestation of Deficiency in Older Adults

Protein	Inability to cope with metabolic stress like infection or broken bone
Zinc	Impaired immune function, delayed wound healing, lethargy
Calcium	Increased risk of fracture
Folate	Increased risk of stroke, anemia, appetite loss, fatigue
Thiamin	Compromised nervous system, weight loss, fatigue, decreased reflexes
Riboflavin	Problems with lips and tongue
Vitamin D	Bone pain, fatigue, gait disturbance
Vitamin E	Uncertain: perhaps reduction of antioxidant effect
Vitamin B_6	Nausea, dizziness, confusion, depression, fatigue
Vitamin B_{12}	Nausea, fatigue, depression, memory problems, anemia, neurological disease

On the positive side, fruit and vegetable consumption appears to increase with age, especially among older women, along with vitamin A, vitamin C, and potassium intake. And older persons—again, particularly women—are more likely to consume vitamin supplements (Wakimoto & Block, 2001). To improve the intake of important nutrients, Table 6.3 identifies some of the best food group sources for older adults.

Two minerals of particular nutritional importance for the aging body are sodium chloride (salt) and calcium. Typically, we consume too much of the former and too little of the latter.

TABLE 6.3 Good Sources of Nutrition for Older Adults

To increase source of:	Eat more:
Protein, iron, niacin, vitamin B_{12}	Meats
Calcium, riboflavin, protein	Milk products
B vitamins	Breads and cereals
Vitamins C and A, potassium	Fruits and vegetables
Vitamin D	Fatty fish

SODIUM AND HIGH BLOOD PRESSURE

Sodium keeps muscles and nerves working properly and attracts water, thereby helping us retain the proper amount of body fluid. Too much sodium in the system, however, causes the body to retain excess water, increase the blood pressure level, and make the heart work harder. Americans consume almost twice the recommended amount of sodium, 4,000 mg versus 2,400 mg. If the IOM had its way, this recommendation would be lowered to 1,300 mg or less each day for people in their 50s and 60s and 1,200 mg for anyone over 70. That is low, to be understated about it: about a half teaspoon of salt. That would pretty much preclude eating at restaurants and eating anything processed.

To help approach this level, the American Medical Association (AMA), at its 2006 meeting, urged the food industry to cut the amount of salt in restaurants and in processed foods by 50% within the decade. The AMA also urged the government to require high-salt foods to be labeled and to revoke salt's status as a food that is "generally recognized as safe."

Because many foods already contain high levels of sodium (such as potato chips, processed meats, frozen dinners, ketchup, most sauces, and canned foods) and it is hidden in a wide variety of other foods, it is quite a challenge for individuals to limit salt (40% sodium and 60% chlorine) sufficiently, even if it is not added to food, which it often is. About half the women who prepared meals used salt when preparing food, and about one-third used salt at the table (AARP, 1991).

The amount of salt used in cooking should be reduced for most people and the saltshaker removed from the table. Some foods that contain large amounts of salt, such as canned soup or processed lunch meat, should be avoided altogether. Labels should be read for sodium content, and people should be made aware that sodium may be indicated by complex names (e.g., monosodium glutamate).

Most Americans associate sodium intake with high blood pressure, yet the percentage of Americans whose high blood pressure can

be attributed to salt sensitivity is unknown. In the absence of definitive research findings, many registered dietitians recommend that sodium reduction be practiced widely. Others suggest an informal test for determining salt sensitivity by alternately restricting salt and then removing salt restrictions for specified periods of time and assessing the impact on an individual's blood pressure levels. In the future, a so-called salt gene (angiotensinogen) may alert us to who is most likely to develop high blood pressure. It appears that this gene responds well to a reduced-sodium diet (Johnson et al., 2001).

Salt restriction is recommended for older adults and for people with an elevated blood pressure level. One study reported that salt restriction may be more effective than daily walking in lowering blood pressure among postmenopausal women (Seals et al., 2001). Salt restriction is also recommended for people with a family history of high blood pressure and for African Americans, who are more likely to be highly sensitive to excess sodium (U.S. Public Health Service, 1988).

More than a decade ago, two leading medical journals, the *British Medical Journal* (Elliot et al., 1996) and the *Journal of the American Medical Association* (Weinberg & Minaker, 1995), published articles that offered contradictory conclusions. Elliot and colleagues (1996) concluded that the traditional association between salt intake and blood pressure is accurate and that monitoring salt intake is still important. Moreover, the relationship appears to be stronger in middle-aged persons than in young adults. In addition, other evidence indicated that salt increased calcium excretion, which raised the risk of osteoporosis (Devine et al., 1995).

Weinberg and Minaker (1995), however, concluded that low-salt diets had virtually no effect on people with normal blood pressure, making low-salt diets irrelevant to the majority of the population. This finding supports the skepticism of many physicians. In a study of 418 primary care physicians in Massachusetts, only 13% considered decreasing dietary salt to be very important for the average person (Wechsler et al., 1996).

Current thinking suggests that it probably makes good sense to err on the conservative side, particularly among older adults. Moreover, because sensitivity to flavor and odors decrease with age, the desire to seek an excessive amount of salt to counteract blandness is likely to increase with age.

CALCIUM AND OSTEOPOROSIS

Calcium is essential for maintaining bone strength. If the amount of calcium contained in the diets of older adults is inadequate, the body takes

calcium from the bones and uses it for other purposes. When people lose calcium from their bones, or their body's ability to absorb calcium is reduced (a process associated with age and exacerbated by the excess use of such products as mineral-oil laxatives, caffeine, and alcohol), bones become more brittle and fragile.

This condition, known as osteoporosis, is characterized by low bone mass and an increase in the risk of fracture from ordinary skeletal stress. Over the years, the bones of a person with osteoporosis gradually thin, until some break, causing pain and disability. Almost half of women aged 50 and older have osteoporosis or the condition leading up to it—osteopenia (Siris et al., 2001). Approximately 1.5 million fractures attributable to osteoporosis occur each year, located most often in the vertebra (700,000), hip (300,000), or wrist (300,000).

Older adult women consume about 500 mg/day of dietary calcium, considerably less than the 800–1,200 mg/day recommended for postadolescent females (Moore & Nagle, 1990). Postmenopausal women are advised to increase calcium intake to 1,500 mg/day (Heaney, 1993; National Institute on Aging, 1994). Most older adults, however, fall far short of that amount, and of the 400–600 IU of vitamin D recommended to help absorb it (Foote et al., 2000; Marshall et al., 2001; Wakimoto & Block, 2001). The most common sources of calcium are dairy products, fortified foods, and dark green leafy vegetables (kale and broccoli, but not spinach).

Weight-bearing exercise helps to maintain strong bones by increasing bone mineral density and reducing calcium loss (Jakes et al., 2001; Kelley, 2001; Rhodes et al., 2000; Vincent & Braith, 2002). The positive effect of exercise on bone strength, however, appears to be lost within a relatively short period of time if the exercise program is discontinued (Fiatarone et al., 1990).

For information and resource materials on osteoporosis, contact the National Osteoporosis Foundation, 1232 22nd Street, NW, Washington, DC 20037; 202-223-2226 (http://www.nof.org).

NUTRITION LABELS

The Nutrition Labeling and Education Act passed by Congress in 1990, but not fully implemented until 1994, required the FDA to enforce food labels that were more educational and less confusing. The initial controversy regarding this law arose from the food industry's reluctance to include the percentage of a daily value for particular nutrients on a label. The industry preferred to inform the consumer that, for instance, a frozen pizza contained 20 g of fat, rather than that it contained 25%

of the total fat that you should consume in a single day ("Are You Eating Right?," 1992). After substantial debate and controversy, consumers won out over the food industry. The content of this legislation—with a few updates added—includes the following:

1. Terms like *light*, *low fat*, and *reduced calorie* must be based on federal definitions, with uniform serving sizes. Many food labels had implied positive characteristics that were, in fact, meaningless (e.g., lite, natural, pure, whole grains). The term *light* could refer to color or flavor, or something other than fat, such as salt. Now, *light* means a 50% reduction from that which existed in the original product. *Low fat* means 3 g or less of fat per serving, while *less fat* means 25% or less fat than the comparison food. *Low calorie* means 40 calories or less per serving, while *reduced calorie* means at least 25% fewer calories per serving than the comparison food. Similar definitions apply to *lean*, *sugar*, *sodium*, *high fiber*, *healthy*, *excellent source*, and so forth.
2. Health or medical claims must be backed by solid research. In 1996, the FDA reported that any food containing 13 g of oat bran or 20 g of oatmeal could carry a heart-healthy claim, provided that the food did not have other unhealthy ingredients like excessive amounts of fat or salt. In 2004, the FDA allowed two more claims. In April of that year, walnuts and omega-3 fatty acids could make statements on labels, and in November, olive oil makers won approval as well.

   These additional label changes, though, only endorsed qualified statements: "Supportive but not conclusive research shows that eating 1.5 ounces of walnuts a day, as part of a low saturated fat and low cholesterol diet, and not resulting in increased caloric intake, may reduce the risk of coronary heart disease" and "there was limited and not conclusive evidence" that people could reduce the risk of coronary disease by replacing saturated fats in their diets with olive oil.

   In 2006, the FDA approved a Whole Grain Stamp on foods containing at least 8 g per serving of whole grains. The label could also appear on foods like pizza with whole wheat crust and beef burritos with whole grain wrappers.
3. All packaged foods must have a standard nutrient chart, with standardized portions to make nutritional and calorie data meaningful. The chart must include information on calories, calories from fat, and the amounts of fat, saturated fat (and, in 2006, trans fat), cholesterol, carbohydrates, protein, and sodium. The label must include the percentage of the total that a person on a

2,000- or 2,500-calorie diet should have for the day (with sugar and trans fat excluded).

The political process has been quite intense in regard to the issue of country-of-origin labeling, which tells consumers where their meat, fruit, and vegetables come from. Initially passed in 2002 with the support of ranchers and farmers who were concerned about competition with imports, it was repealed in 2004 with the support of meat-packers and food processors. Consumers tend not to be the deciding factor in legislation that affects the bottom line of businesses.

In 1995, 1 year after the nutrition labels debuted, 56% of consumers used the new labels often to check nutrients and compare brands. Unfortunately, the public fixated on fat content rather than total calories. As a consequence, from 1995 to 1998, more than 6,500 reduced-fat foods were introduced to the public ("Counting on Food Labels," 2000), many of which were *not* low in calories, and obesity continued to rise. While the interest in nutrition labels rose to nearly 80% of Americans in 2006, according to a national AP-Ipsos poll, 44% of the people who looked at nutrition labels admitted that they did not let the label, regardless of content, dissuade them from buying the product.

The nutrition labeling law had other defects. Ground beef, for example, accounts for about half of the meat sold in the United States. This one product added more saturated fat to the average American's diet than any other single food. Yet a package of ground beef, which can provide 14 g of fat in a single serving, can have an "85% lean" label on it. This label professes that a serving with 14 g of fat still can be described as lean.

Fast-food restaurants have resisted legislation that mandates calorie labeling on menus and menu boards since these restaurants typically serve high-calorie food. Over the past 4 decades, consumers have doubled the percentage of their food dollars spent at restaurants—to about 46%—most of which takes place at fast-food restaurants. Not surprisingly, overweight and obesity has doubled in America during this time as well.

With considerable public pressure, though, just over half of the nation's 287 largest restaurant chains make some nutrition information available to customers. Most of these restaurants, though, do not include calorie information, and when they do, they offer it only on their Web sites. Subway is probably the leader in providing calorie information, including placing it on condiments, napkins, and menu boards.

New York City, however, is the leading city in revealing caloric content. The New York City Board of Health required all fast food and other restaurants with standardized menus to post the calories in their offerings in large type and in readily visible areas, such as the menu, menu board,

or near cash registers. [This groundbreaking regulation took place on July 1, 2007.]

Ruby Tuesday's voluntary attempt to appeal to consumer education and health concerns, however, backfired. This restaurant chain posted calorie information on its menus and reduced portion sizes at the same time. Between April and August 2004, when this trial was underway, restaurant profits fell 5% in 4 months' time. The experiment was dropped.

MALNUTRITION

Americans are no longer dying of pellagra, rickets, beriberi, or scurvy—due to deficiencies in niacin, vitamin D, thiamin, and vitamin C, respectively—thanks largely to the fortification and enrichment of our foods. Nonetheless, malnutrition remains a serious problem. Between 16% and 30% of older Americans are malnourished or at high risk, with higher percentages among older hospital patients and nursing home residents (Beers & Berkow, 2000; "Malnutrition," 1995; "Your Elderly Patients," 1993). These malnourished older adults take 40% longer to recover from illness, have 2–3 times as many complications, and have hospital stays that are 90% longer.

There are many risk factors for malnourishment in older adults (Table 6.4). The link between malnutrition and social isolation is particularly strong and suggests that "encouraging participation in various activities and clubs, as well as sharing meals with friends or neighbors may be far more effective in improving dietary intake than simple dietary advice" (Horwath, 1991). Men living alone consume fewer fruits and vegetables and have a much greater propensity for selecting easy-to-prepare foods that are high in fat and low in complex carbohydrates than do those who have companions (Horwath, 1989). Loneliness, bereavement, and social isolation are associated with poor dietary intake in late life (Horwath, 1991). An increasing percentage of older adults report difficulty in preparing meals, particularly after age 85 (Davis et al., 1985).

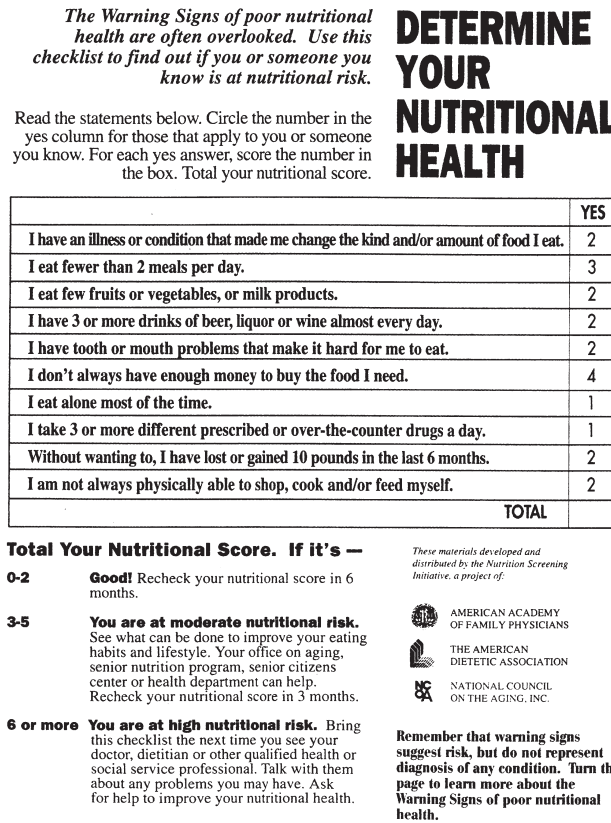
TABLE 6.4 Risk Factors for Malnourishment in Older Adults

Inappropriate food	Loss of appetite	Decreased thirst	Dental problems
Social isolation	Poverty	Dementing illness	Medical disease
Physical condition	Alcoholism	Endurance problems	Balance problems
Depression	Medication usage	Medication withdrawal	

Many elderly individuals depend on meals prepared at a congregate nutrition site or meals-on-wheels program. As the demand for services of this type increases along with the number of frail, very old adults, the likelihood that the supply of such services will meet the need is unlikely based on funding trends. Malnutrition is therefore likely to increase.

Nutrition screenings examine characteristics known to be associated with dietary and nutritional problems in order to identify high-risk individuals. One such screening initiative, a collaborative project by the American Academy of Family Physicians, the American Dietetic Association, and the National Council on the Aging resulted in the production of a manual that begins with a checklist "Determine Your Nutritional Health," shown in Figure 6.4.

The manual includes a variety of screening tools on nutrition and related topics, including body mass index, eating habits, functional status,



The Warning Signs of poor nutritional health are often overlooked. Use this checklist to find out if you or someone you know is at nutritional risk.

Read the statements below. Circle the number in the yes column for those that apply to you or someone you know. For each yes answer, score the number in the box. Total your nutritional score.

DETERMINE YOUR NUTRITIONAL HEALTH

	YES
I have an illness or condition that made me change the kind and/or amount of food I eat.	2
I eat fewer than 2 meals per day.	3
I eat few fruits or vegetables, or milk products.	2
I have 3 or more drinks of beer, liquor or wine almost every day.	2
I have tooth or mouth problems that make it hard for me to eat.	2
I don't always have enough money to buy the food I need.	4
I eat alone most of the time.	1
I take 3 or more different prescribed or over-the-counter drugs a day.	1
Without wanting to, I have lost or gained 10 pounds in the last 6 months.	2
I am not always physically able to shop, cook and/or feed myself.	2
TOTAL	

Total Your Nutritional Score. If it's —

0-2 **Good!** Recheck your nutritional score in 6 months.

3-5 **You are at moderate nutritional risk.** See what can be done to improve your eating habits and lifestyle. Your office on aging, senior nutrition program, senior citizens center or health department can help. Recheck your nutritional score in 3 months.

6 or more **You are at high nutritional risk.** Bring this checklist the next time you see your doctor, dietitian or other qualified health or social service professional. Talk with them about any problems you may have. Ask for help to improve your nutritional health.

These materials developed and distributed by the Nutrition Screening Initiative, a project of:

AMERICAN ACADEMY OF FAMILY PHYSICIANS

THE AMERICAN DIETETIC ASSOCIATION

NATIONAL COUNCIL ON THE AGING, INC.

Remember that warning signs suggest risk, but do not represent diagnosis of any condition. Turn the page to learn more about the Warning Signs of poor nutritional health.

FIGURE 6.4 Determine your nutritional health.

The Nutrition Checklist is based on the Warning Signs described below. Use the word DETERMINE to remind you of the Warning Signs.

DISEASE
Any disease, illness or chronic condition which causes you to change the way you eat, or makes it hard for you to eat, puts your nutritional health at risk. Four out of five adults have chronic diseases that are affected by diet. Confusion or memory loss that keeps getting worse is estimated to affect one out of five or more of older adults. This can make it hard to remember what, when or if you've eaten. Feeling sad or depressed, which happens to about one in eight older adults, can cause big changes in appetite, digestion, energy level, weight and well-being.

EATING POORLY
Eating too little and eating too much both lead to poor health. Eating the same foods day after day or not eating fruit, vegetables, and milk products daily will also cause poor nutritional health. One in five adults skip meals daily. Only 13% of adults eat the minimum amount of fruit and vegetables needed. One in four older adults drink too much alcohol. Many health problems become worse if you drink more than one or two alcoholic beverages per day.

TOOTH LOSS/ MOUTH PAIN
A healthy mouth, teeth and gums are needed to eat. Missing, loose or rotten teeth or dentures which don't fit well or cause mouth sores make it hard to eat.

ECONOMIC HARDSHIP
As many as 40% of older Americans have incomes of less than $6,000 per year. Having less--or choosing to spend less--than $25-30 per week for food makes it very hard to get the foods you need to stay healthy.

REDUCED SOCIAL CONTACT
One-third of all older people live alone. Being with people daily has a positive effect on morale, well-being and eating.

MULTIPLE MEDICINES
Many older Americans must take medicines for health problems. Almost half of older Americans take multiple medicines daily. Growing old may change the way we respond to drugs. The more medicines you take, the greater the chance for side effects such as increased or decreased appetite, change in taste, constipation, weakness, drowsiness, diarrhea, nausea, and others. Vitamins or minerals when taken in large doses act like drugs and can cause harm. Alert your doctor to everything you take.

INVOLUNTARY WEIGHT LOSS/GAIN
Losing or gaining a lot of weight when you are not trying to do so is an important warning sign that must not be ignored. Being overweight or underweight also increases your chance of poor health.

NEEDS ASSISTANCE IN SELF CARE
Although most older people are able to eat, one of every five have trouble walking, shopping, buying and cooking food, especially as they get older.

ELDER YEARS ABOVE AGE 80
Most older people lead full and productive lives. But as age increases, risk of frailty and health problems increase. Checking your nutritional health regularly makes good sense.

The Nutrition Screening Initiative, 2626 Pennsylvania Avenue, NW, Suite 301, Washington, DC 20037

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FIGURE 6.4 (*continued*)

cognitive status, and depression. To order copies of this manual, contact Nutrition Screening Manual for Professionals Caring for Older Americans, Nutrition Screening Initiative, 1010 Wisconsin Avenue, NW, #800, Washington, DC 20007; http://www.aafp.org.

When clients lose their appetite, the following is recommended: eat smaller and more frequent meals; take advantage when you feel good and

are hungry, regardless of the time; eat higher calorie foods or consider taking a nutritional supplement; postpone beverages toward the end of a meal; create a pleasant eating atmosphere and find company to enjoy the meal with; and see a physician to either change a medication that is affecting appetite or to add a medication that may relieve nausea, heartburn, or other symptoms that occur when you eat ("Loss of Appetite," 1997).

SELECTED TOPICS

Organic Foods

Although the sale of organic foods was only 3% of the total food industry in 2005, the growth rate had been more than 15% per year over the prior decade. The Organic Trade Association believes that the buying trend is being led by the health-conscious baby boomers.

On October 21, 2002, the first national standards for organic foods were implemented. To earn the organic label, both domestic and imported foods need to be produced without pesticides, hormones, chemical fertilizers, antibiotics, irradiation, or bioengineering. The food cannot be treated with artificial preservatives, flavors, or colors. Furthermore, organic farmers must conserve soil and water to enhance environmental quality and treat animals humanely.

To ensure standards, the USDA uses accredited private companies and state agencies to inspect and certify companies as organic. Companies that illegally state their foods as organic face penalties up to $10,000 per violation.

Foods that are 100% organic can state "100% organic" and display the green USDA Organic seal; 95% organic can state "organic" and use the USDA seal; 70% organic can state "made with organic ingredients" but cannot use the USDA seal; less than 70% organic can state "some organic ingredients" but cannot use the USDA seal.

Organic does not necessarily mean healthy. Organic donuts and organic chips are just as high in fat and calories as the conventional kind. And food labeled "natural" does not mean organic; this label means the product contains no artificial ingredient or added color and is only minimally processed.

In 2006, Wal-Mart began to offer organic foods in its nearly 4,000 stores, and the consequences are likely to be major. In the Wal-Mart tradition, cost is a factor, and they have vowed to keep costs to 10% over conventional food, instead of the 20% to 30% additional charged elsewhere. The good news is that many more people will be able to afford organic food. The bad news is that Wal-Mart may have the clout to

weaken the USDA's definition of what *organic* means, and they may alter organic farming so that it comes to resemble conventional farming in scale, mechanization, processing, and transportation.

Also, not only will the practice of *local* organic farming decline (Wal-Mart needs large-scale producers to keep prices low), but the likelihood of outsourcing from overseas, where standards and labor conditions will be harder to oversee, will increase. In addition, if crop rotation is not practiced, if the growth of crops quickened, or if cattle graze on organic grain rather than grass (cattle raised on grass are leaner and produce a healthier dose of omega-3 fats), the health benefits of organic foods will diminish.

Data presented at the American Association for the Advancement of Science in February 2006 reported that fruits and vegetables have declined in a wide variety of vitamins and minerals over the past half century. At the present time, though, the antioxidant levels in organic foods are about 30% higher than in conventional foods. Consumers will have to remain vigilant, however, to maintain the quality of organic foods, as they were recently when they helped to defeat a bill that would have made it easier to include synthetic ingredients in products labeled "organic."

Enriched and Fortified Foods

When nutrients lost through processing are replaced, the food is labeled "enriched." When nutrients normally present are added to exceed the natural amount, the food is labeled "fortified." Enriched and fortified foods have made a significant contribution in the reduction of malnutrition in this country, but they are not necessarily good substitutes for other nutrient-dense products. In other words, an orange drink which informs the consumer that it is fortified with vitamin C does not report which nutrients from a more nutritious counterpart, like orange juice, are missing.

Chocolate

Aside from a few chocolatier entrepreneurs in the state of Pennsylvania—the nation's chocolate capital, where 20% of our chocolate is produced—few claim that chocolate is a health food. But there are an increasing number of researchers who are touting the disease-fighting, antioxidant properties of the plant compounds found in dark chocolate ("Is Chocolate Good for You?," 2000). The heart-protecting antioxidants in chocolate are flavonoids, the plant-based compounds that are also found in red wine, tea, and some fruits and vegetables.

While research has shown that dark chocolate reduces blood pressure and insulin resistance (Buijsse et al., 2006; Grassi et al., 2005),

much of this research has been supported by the chocolate industry. As a consequence, the results must be viewed with caution. The dark chocolate used in these studies, for instance, is of a much higher quality than most of what is found on American store shelves. Another concern is that, along with the flavonoids, subjects in these studies ate 500 or more calories' worth of chocolate a day.

Most people feel pretty good while eating chocolate, but many tend to regret having eaten it for a longer period of time.

Junk Food and Fast Food

Junk food—also known as energy-dense and nutrient-poor foods in the nutrition business—provide about one-third of the daily calorie intake of American adults. Younger adults prefer salty snacks, candy, and soft drinks; older adults prefer fats and desserts (Kant, 2000). In 2001, Americans ate about 6.5 billion pounds of snacks, with potato chips and tortilla chips leading the way.

Fast foods, which also tend to be energy-dense and nutrient-poor, are on the rise as well. In 1970, Americans spent about $6 billion annually on fast food; in 2000, over $110 billion. One of the newer wrinkles in fast food is called dashboard dining. The automobile driver can drink 13 varieties of soup in heat-and-sip cups. Yogurt can be consumed through squeeze tubes. Cookies can be eaten from cans that fit neatly in car cup holders. Frozen peanut butter and jelly sandwiches—crustless for the kids—can also be taken along for the ride.

Older adults often opt at home for the convenience of prepared, frozen, microwaveable meals. These foods, unfortunately, are typically high in fat, sodium, and cholesterol. Healthier options were made available to consumers after ConAgra's CEO, Mike Harper, suffered a heart attack and shortly thereafter created Healthy Choice dinners. Other companies followed suit.

What are the dietary habits of future cohorts of older adults likely to be? McDonald's, Pizza Hut, Domino's, and other fast-food outlets are located in about 30% of public high schools in the United States (Schlosser, 2001). And Ronald McDonald is second only to Santa Claus in familiarity among children ("How McNuggets," 2001).

In 1955, Americans spent 19% of their food dollars on restaurants; today, that figure has increased to 41%. The average American eats out more than 4 times a week, and more than half the time eats at a fast-food restaurant. Restaurant meals contain 20% more fat than home-cooked meals and are less desirable in terms of sodium, cholesterol, calcium, and fiber content (Brody, 2002).

The most alarming trend in restaurants is an increase in portion size and calorie inflation. An order of McDonald's French fries, for instance,

went from 200 calories in the 1960s up to 610 calories in 2000. Muffins and bagels at restaurants have gotten bigger, with calories doubling or tripling. Entrees have gotten bigger also, with portions reaching out to the edges of the plate, and now the plates are getting bigger to accommodate even larger portions.

The good news is that many fast-food restaurants offer healthier options, such as a salad bar (though many consumers are imprudent when it comes to adding salad dressing) and the choice of grilled chicken instead of fried meat. Mexican restaurants are offering soft corn tortillas as a substitute for hard taco shells (zero versus 6 g of fat), and customers can fill up with beans, salsa, and low-fat sour cream. At Chinese restaurants, health-conscious consumers can choose stir-fry fresh or frozen vegetables served over brown rice.

Contaminated Foods

Public health officials are concerned about pesticides and other contaminants in the foods that are purchased because they interfere with hormones that regulate how the body functions. Fruits and vegetables are the most likely foods to contain pesticides, with about half of those tested having pesticide residues on or in them ("Pesticide Exposure," 1997). Strawberries are by far the most contaminated fruit or vegetable. When it comes to lettuce and cabbage, washing, peeling skins, and removing the outer leaves are helpful in reducing residues.

Bread and other grain products tend not to have residues because the milling process removes them. Pesticides are more likely to accumulate in fatty meats, fish, and dairy products than in their leaner counterparts. The biggest seafood hazard is raw or undercooked shellfish, which accounts for more than 90% of seafood poisoning cases ("Fishing for Safe Seafood," 1996). Contaminated seafood causes about 113,000 reported cases of food poisoning each year in the United States, according to the FDA, along with countless unreported cases.

Sugary Liquids

The average American gets about 21% of his or her calories from beverages, a large percentage of which comes from soft drinks, fruit drinks, and alcohol (Popkin, 2006). The epidemiologic and experimental evidence indicates that the increasing consumption of sugar-sweetened beverages has contributed to the increasing weight gain and obesity in America (Malik et al., 2006). The good news is that by the 2009–2010 school year, only low-calorie and nutritious beverages will be allowed to be sold in the nation's schools. These new guidelines affect 35 million students.

High-fructose corn syrup (HFCS) is the leading sweetener in soda and fruit juices. It has become a popular sweetener through a process that converts cornstarch into a thick liquid, and then added enzymes create even more fructose. Although fructose is a sugar found naturally in fruits, HFCS is a highly concentrated version of it. Its advantage to drink manufacturers is that it is inexpensive to produce, at least 20% cheaper than cane sugar. Because of this cost efficiency, HFCS expanded to many nonliquid products in the 1990s, from barbecue sauce to canned soup to hamburger buns. Americans swallow more HFCS than regular sugar, and its usage has increased from half a pound per person in 1970 to more than 60 pounds per person in 2004.

Some scientists, however, believe that there is little data to back up the demonization of HFCS, and its link with increasing obesity is not a strong one. They argue that the product is not substantially different from the refined white sugar it replaces and that the product has distracted advocacy groups from the proliferation of beverages with all types of added sugars.

As the debate continues, let me end on an ironic note: The Marroquin International Company of Santa Cruz, California, now sells *organic* HFCS.

Coffee

Coffee has been cast as either vice or virtue for centuries. For instance, a few monarchs destroyed coffeehouses around 1600, believing that the beverage incited gossip and rebellion; about that same time, a pope found it so delicious that he baptized it.

According to the *Mayo Clinic Health Letter* ("Coffee," 1997), coffee is a not-so-harmful vice if consumed in moderation. Caffeine is the stimulant that gives coffee its kick, and the evidence that the caffeine in coffee causes serious health problems like cancer, cardiovascular disease, osteoporosis, and fibrocystic breast changes has been inconsistent at best. If health problems were found at all, they occurred only at very high levels of coffee consumption.

Recent research, though, has shed more light on the effects of coffee. Apparently, people can be slow or fast metabolizers, and the former—because caffeine lingers in the body—are much more at risk of heart attack, while the latter are less likely to have heart problems (Cornelis et al., 2006). Since we do not have simple and reliable tests to assess our metabolism, coffee drinkers may have to pay particularly close attention to what their bodies are telling them.

For those who are going to drink coffee regardless, there are researchers who believe that coffee is a major source of dietary antioxidants and that coffee consumption is associated with reduced risk of death

from inflammatory and cardiovascular diseases (Andersen et al., 2006), diabetes (Salazar-Martinez et al., 2004), and cirrhosis (Klatsky et al., 2006). Too much caffeine, though, can lead to irritability, heartburn, and bladder or stomach ulcer irritations.

To reduce consumption, it is best done gradually to avoid withdrawal symptoms such as headaches or even nausea or depression. One alternative, therefore, is to switch to a slightly lower caffeinated product, such as a caffeine-spiked water drink tantalizingly called Aqua Blast, or perhaps to a caffeine-spiked juice drink with the refined name of Java Juice. These products contain from 60 to 125 mg of caffeine, compared to an 8-ounce cup of coffee, which has 135 mg of caffeine.

Sensory Decline

An age-related decline in the sense of smell—rather than taste—directly affects a person's ability to taste or enjoy food (Greeley, 1990). About 30% of persons between the ages of 70 and 80, and 65% of persons over age 80, experience problems with their sense of smell. Older persons have more trouble identifying pureed foods, for instance, than do younger persons. If younger persons held their noses while eating, their ability to identify foods would drop to the level of older adults.

Because individuals try to compensate for the loss of smell and taste, they may add too much sugar or salt to make food taste better, which can impact on heart disease, stroke, diabetes, and other diseases. To enhance food aromas for older adults, herbs and spices are encouraged. Adding flavors and sweeteners also can enhance taste. Another technique for stimulating appetite is a combination of different textures, for example, adding granola to yogurt.

Professional Involvement

Data on the nutritional counseling of older clients are wanting, but the Healthy People 2000 mid-decade review suggested that about 30% of health professionals offered such counseling to clients in 1992, with no indication that this percentage increased by 1995. Some advocates believe that the percentage is much lower than 30% and question whether federal assessments measure serious attempts by health professionals to analyze clients' diets or whether they include the offer of a passing comment or two. Michael Jacobson, director of the CSPI, estimates that only 5% of physicians offer nutritional counseling to a useful extent.

Dietary counsel by nurses, physicians, allied health professionals, registered dietitians, and nutritionists can be effective in changing the dietary habits of clients (Caggiula et al., 1987). Yet only one in four clients

reported a discussion of "eating proper foods" during a routine visit to a health professional in the previous year (NCHS, 1988).

Referrals to qualified nutritionists or dietitians for counseling are also not common (Lewis, 1988). The importance of nutrition referrals by physicians to qualified health practitioners is substantiated by a survey of Massachusetts's primary care physicians. Only 35% reported being very prepared to counsel patients in nutrition, and only 7% reported feeling very successful (Wechsler et al., 1983). Wechsler and colleagues' (1996) follow-up survey 13 years later found that physicians were even less attentive to their patients' diets than they had been in the past.

Insufficient training and limited time to attend to patients' diets contributed to the U.S. Preventive Services Task Force 2003 update to conclude that there is insufficient evidence to recommend for or against routine behavioral counseling to promote a healthy diet. If patients have known risk factors for cardiovascular or diet-related chronic disease, however, then counseling by primary care clinicians or referral to dietitians is recommended.

If diet or health advice is provided by a visibly overweight doctor, nurse, or dietitian, almost half of the Americans (45%) surveyed in a national Gallup poll would either fail to take the advice seriously or be inclined to ignore it.

Quackery

The following examples can help to distinguish between a certified health professional and a quack. Dietitians and nutritionists individualize a nutrition plan and make sure that fat is limited and complex carbohydrates and fiber emphasized. They encourage lifelong changes that include regular exercise, ongoing behavior management techniques, and identifying sources of emotional support in order to help clients sustain changes in their eating habits. They advocate for the consumption of a wide variety of foods and suggest supplements primarily when needs cannot be met through diet. They do not promise cures, and they do consult with physicians. They are also more likely to have earned a degree from a 4-year accredited college or university or are registered dietitians (RD), which requires passing a national exam.

Quacks, on the other hand, rely on testimonials, are not shy about promising to cure a disease, typically foresee quick results, often emphasize one or two food groups, frequently encourage megadoses of vitamins, and repeatedly denigrate other people's ideas, even those based on scientific evidence.

Want a qualified nutritionist to design a healthy eating plan? Call the Nutrition Information Line of the American Dietetics Association at 800-366-1655 (http://www.eatright.org) to find an adviser in your area.

Socioeconomic and Cultural Sensitivity

In addition to the physiological changes that occur with age, health professionals need to be sensitive to the socioeconomic and cultural factors that influence their clients. For example, health professionals ought not to try to increase the protein consumption of clients who have low incomes by recommending diets that contain expensive lean meat, fish, or poultry. To afford better foods, low-income clients can be encouraged to start a small garden, visit a farmer's market or inexpensive roadside vendor, or collaborate with others to buy in bulk.

Health professionals should not recommend diets that completely ignore the food preferences of members of particular ethnic groups. Ethnic foods are a source of pride, identity, and fond memories. Every effort should be made to incorporate food preferences in nutritional planning. Health educators can recommend healthier cooking methods or suggest more nutritious ingredients for popular ethnic foods.

Food Films

My first date with my wife was to see the movie *Like Water for Chocolate*. This great Mexican—and date—film is about how a young woman transfers her feelings for forbidden love into her cooking. Her passion is channeled into her food preparation, and those who subsequently dine on her creations experience her emotions as well.

There are other films where people pour their love into the preparation of food. *Babette's Feast* is about a group of quarreling people who become transformed by a magnificent feast and end the meal by forgiving and blessing one another. *Eat Drink Man Woman* is about a famous Chinese chef concerned about his daughters but only able to communicate through loving meal preparations. *Big Night* is about two Italian brothers trying to save their restaurant through a feast of a lifetime. In all these films the food is fresh and delicious and prepared slowly and lovingly. (Interested in the slow food movement? Access http://www.slowfood.com.)

At the other end of the continuum is the movie about fast food called *Super Size Me*. Morgan Spurlock is a healthy young man who became fascinated by two young people who sued McDonald's for making them fat. Spurlock then decided to make a movie about eating at McDonald's for three meals a day, 30 straight days. Spurlock at first found the meals to

be tasty, but eventually he sustained liver damage, stomach pains, vomiting, weight gain, depression, and impaired sexuality (though perhaps the attitude of his girlfriend—a vegan chef—toward his project contributed to the last problem).

Just before *Super Size Me* began appearing in movie theaters in 2004, McDonald's (they claimed coincidentally) eliminated their super size option and also announced the introduction of a new, healthier menu. Spurlock's film had less of an influence on me. I took my wife to see it, and it was not nearly as good a date film as *Like Water for Chocolate*.

Advocacy

The CSPI is an educational and advocacy organization. Its educational component consists of the *Nutrition Action Healthletter*, published monthly, which informs more than 800,000 subscribers, including this author. The organization is best known, however, for its advocacy accomplishments under the leadership of its executive director and cofounder (in 1971), Michael Jacobson.

Jacobson and CSPI staff, for example, have led the fight for nutrition labels on food items in the supermarket; for exposing the hidden fat in Chinese, Mexican, Italian, and delicatessen food; for pressuring movie theaters to stop cooking popcorn in artery-clogging coconut oil; for warning labels on Procter and Gamble's fake fat, Olean, which may interfere with the absorption of nutrients and cause loose stools and cramping; for more accurate labeling of ground beef in supermarkets; and for the listing of trans fat on nutrition labels.

For more information, contact the CSPI, 1875 Connecticut Avenue, NW, Suite 300, Washington, DC 20009; http://www.cspinet.org.

Newsletters

To obtain a newsletter on nutritional topics, contact one of the following:

Nutrition Action Healthletter, Center for Science in the Public Interest, 1875 Connecticut Avenue, NW, Suite 300, Washington, DC 20009; http://www.cspinet.org

Environmental Nutrition: The Professional Newsletter of Diet, Nutrition and Health, 2112 Broadway, New York, NY 10023; 800-829-5384

Mayo Clinic Nutrition Letter, Mayo Foundation for Medical Education and Research, 200 1st Street, SW, Rochester, MN 55905

Diet, Nutrition and Cancer Prevention, National Cancer Institute, Building 31, Room 10A24, Bethesda, MD 20892; 800-4-CANCER

National Center for Nutrition and Dietetics, 216 W. Jackson Boulevard, Suite 800, Chicago, IL 60606-6995

Tufts University Diet and Nutrition Letter, P.O. Box 57857, Boulder, CO 80322-7857; 800-274-7581

University of California, Berkeley Wellness Newsletter, P.O. Box 420148, Palm Coast, FL 32142; 800-829-9170

Web Sites

Center for Nutrition Policy and Promotion (http://www.usda.gov/cnpp): The USDA's online Interactive Healthy Eating Index helps you assess the quality of your daily diet.

American Dietetic Association (http://www.eatright.org): For information on nutrition and health, call 800-366-1655.

Cyberdiet (http://www.cyberdiet.com): Commercial site that provides nutritional information and support for a better diet and healthier lifestyle.

QUESTIONS FOR DISCUSSION

1. Check out the new food guide pyramid on the Web site http://www.mypyramid.gov and see what you can learn about nutrition that is interesting to you. Report back on your findings. Do you have any suggestions for improving this site?
2. What do you like and dislike about Covert Bailey's bull's-eye approach to nutrition education?
3. What are some differences to consider when attempting to motivate an older adult to change an eating habit versus a younger adult?
4. Research suggests that older adults are more conscious of their nutritional habits than younger adults. Conduct your own survey of five older adults and five younger adults, asking them to rate how much attention they pay to eating what is good for them, using a scale of 1 (*not very often*) to 10 (*all the time*). Does your convenience sample corroborate the positive relationship between age and good nutritional habits?
5. Can you give three examples in which changing a dietary habit might prove to be an acceptable alternative to taking a medication for a health problem?
6. How would you improve nutrition labeling?

7. Ask someone about an important change they made in their eating habits. What difficulties did they encounter making the change, and how did they overcome them?
8. Offer five tips to someone who eats often at restaurants but wants to eat more nutritiously.
9. Not all fats are created equal. Can you explain the differences?
10. Is 2% milk low fat? Explain your answer.
11. What does the author have against the National Cholesterol Education Program Guidelines? Make an argument that the guidelines do more good than harm.
12. Not all carbohydrates are created equal. Can you explain the differences?
13. If your goal is 55% of your diet to consist of carbohydrates, and you consume 2,000 calories per day, how many grams of carbohydrates are needed in your diet? (Hint: Do not stop with your calculation when you get to 1,100.)
14. Should most older Americans be concerned about the amount of sodium in their diet? Why?
15. Should we *routinely* counsel all older adults to supplement their dietary calcium and vitamin D? Why?
16. What are four ways to improve bone strength?
17. Which RDAs have age differences?
18. Create your own nutrition bull's-eye, filling in the foods and drink that you consume or might consider consuming. Use it for a week to guide your eating choices. Take a list of the food products in the center of your bull's-eye to the supermarket with you. Did you find this technique to be helpful?
19. Identify one sensory decline that occurs with age. Describe one nutritional implication that is associated with this decline.
20. Examine one other topic in this chapter that you found interesting and has not been explored when answering the previous questions. Why did you find this interesting?

CHAPTER SEVEN

Weight Management

TRENDS IN WEIGHT GAIN

In 2003, the U.S. Preventive Services Task Force recommended that clinicians screen all adults for obesity (body mass index [BMI] of 30 or above) and offer intensive behavioral counseling to obese adults. This decision seemed to be based not so much on the effectiveness of clinician counsel, but on the evidence that overweight and obesity had become epidemic in America.

According to the Centers for Disease Control and Prevention, between 1988 and 2000, the percentage of overweight American adults aged 20–74 rose from 56% to 65%, and the percentage of obese adults increased from 22% to 31%. The highest percentage of obese adults were in the age group 50–69, with those aged 70–79 the next most obese (Squires, 2002).

This surprising epidemic has escalated, despite the fact that Americans spend about $40 billion a year on diet products and programs; that excess weight is widely known to be a risk factor for disease and death; that obesity is a social stigma in our society and continues to offend most people's personal vanity; and that a health revolution had supposedly occurred in America.

It does appear that a limited health revolution occurred in America during the past 35 years. Cigarette smoking declined significantly during this time; alcohol abuse was identified as a common risk factor, and steps were taken to curtail it, especially among automobile drivers; seat belt use had risen steadily; brisk walking, jogging, aerobic dancing, and other exercises had attracted tens of millions of new participants; and the use of low-fat food alternatives had proliferated. How could the nation have grown fat while all of this was happening?

Some health analysts believe that the fitness revolution was limited to only a segment of the population, perhaps 20%, with the majority of Americans still sedentary and consuming more calories than ever. Others theorize that significant numbers of Americans have been responding to the computer age by relying on their computers rather than physical activities for entertainment as well as work. Another theory is that many people in this highly stressful era have been using food as a coping device to combat the anxiety and depression caused by violence, job reductions, divorce, and so forth. It has also been suggested that while many Americans have been preoccupied with fat reduction, they were not as vigilant with calorie reduction. Yet another theory is that legions of ex-smokers have turned to overeating. (For some additional ideas that are quite novel about why people have gained weight over the past few decades, ranging from air conditioning [it limits calories burned from sweating] to mating practices [overweight people procreate with others of the same body type, gradually skewing the population toward obesity], see the article by Keith et al., 2006.)

Each of these ideas may contain some element of truth, yet I favor another theory. Our society is aging. As noted in chapter 1, the familiar population pyramid, with a few old people at its top and many young people at its base, is fast becoming a rectangle. This population rectangle, which has been taking shape over the past 30 years, will complete its metamorphosis over the next 2 decades. In 1980, nearly 3 times as many persons were under age 18 as were over age 65 (28% vs. 11%). By 2030, slightly more people will be over age 65 than are under age 18 (22% vs. 21%).

As we age, our metabolism—the chemical processes that build and destroy tissue—gradually slows. When it comes to eating, our fat oxidation or fat-burning rate slows down about 30% with age (Roberts et al., 1996). The metabolism that breaks down food components releases them in the form of energy and heat more slowly. Thus the number of calories that were required to maintain our weight when we were young no longer maintains our weight, but increases it. Also, chronic conditions—most notably arthritis—that accompany the aging process can place limitations on our ability to stay active. Activity is a crucial factor in long-term weight management.

According to the Harris poll and the National Health and Nutrition Examination Survey, obesity reaches a peak among people in their 50s. More specifically, obesity peaks between the ages of 45 and 55 for men and between 55 and 65 for women (Van Itallie & Lew, 1990). Between the ages of 25 and 55, the average American gains 30 pounds of weight, about a pound a year. Moreover, during this time period, most Americans are sedentary and *lose about 15 pounds of muscle mass*, so the 30-pound weight gain actually translates into a 45-pound *fat* gain.

Between the ages of 60 and 70, weight tends to be maintained, and around age 75, there begins to be a tendency to lose weight. Unfortunately, this weight loss is due more to lost muscle than lost fat, and older persons not only become thinner, but weaker and less functional as well.

Obesity is more prevalent among low-income minority women. In 1980, 25% of women above the poverty level were overweight, while 37% of women with incomes below the poverty level were overweight (U.S. Public Health Service, 1988). In 1999–2000, Mexican American women were 40% obese compared to 29% for Mexican American men; African American women were 50% obese compared to 28% for African American men (Flegal et al., 2002; Squires, 2002). Using the less rigorous criterion of being overweight, more than 80% of African American women aged 40 years or older were overweight (Flegal et al., 2002).

Just days prior to leaving his post in 2002 to work at Morehouse University's School of Medicine, U.S. surgeon general David Satcher declared overweight to be of epidemic proportions in America. He then released a Call to Action to Prevent and Decrease Overweight and Obesity. This document contends that weight-control activities should be a national priority for immediate action and that all sectors of society should participate. However, the next surgeon general, Dr. Richard Carmona—a trauma surgeon with battlefield medical experience—did not take up the challenge to fight obesity.

Nor did the head of the Centers for Disease Control and Prevention. In 2003, Dr. Julie Gerberding reported that much of her time was spent preparing to fight chemical and biological threats, along with lethal viruses, while eating too much and exercising too little was the number one health threat by far in the United States.

OBESITY AND OVERWEIGHT

The terms commonly used to refer to people who weigh more than recommended are *overweight* and *obese*. One way to define these terms is that people who exceed the desirable range by 10% are classified as overweight and by 20% or more as obese.

The BMI, however, has been the standard gauge of weight status. It provides a simple and roughly accurate method for determining population overweight and obesity. BMI can be calculated by multiplying weight in pounds by 700, divided by height in inches, and then dividing by height again; or if you have a pocket calculator, divide body weight (in kilograms) by height squared (in meters). Persons who have a BMI between 25 and

29.9 are overweight; those with a BMI between 30 and 39.9 are obese; and persons with a BMI of 40 or over are extremely obese. According to this criterion, almost two-thirds of adult Americans are overweight, almost one-third are obese, and about 5% are extremely obese.

The BMI is a useful tool for screening the *general* population but, similar to height/weight charts, fails to differentiate fat from lean body mass. Altogether, there are four shortcomings with BMI when it comes to *individual* assessment:

1. Excess body fat in older adults may be underestimated by a BMI score because it is counteracted by a loss of muscle mass with age. The net result can be a BMI under 25, despite the excess body fat.
2. Persons with a large amount of muscle mass can appear to be overweight and erroneously fall into the high-risk category.
3. It is not uncommon for older adults to lose about 3 inches in height as they age, and there is no consensus on whether they should use their new or old heights in determining their BMIs.
4. There is no differentiation between the centrally obese apple-shaped body (a heart risk factor) and the pear-shaped body (less of a risk factor).

Regarding the last point, a waist-to-hip ratio is a better predictor of heart attack than BMI (Yusuf et al., 2005). A waist-to-hip ratio refers to waist measurement divided by hip measurement, with a score above .85 in women or .9 in men indicating a risk for heart disease. The higher the waist-to-hip ratio, the higher the risk of a heart attack. This association was not as strong for the BMI measurement.

Morbidity and Mortality

One study reported that even being modestly overweight increases the chances of developing heart failure. This study of almost 6,000 adults reported that while the risk of heart failure is double in obese people, it is still a substantial 34% higher in those who are only overweight (Kenchaiah et al., 2002). For each increment of one unit on the BMI scale the risk increased 5% for men and 7% for women.

Obesity, however, is the major risk factor. It is associated not only with heart disease, but with diabetes (Pereira et al., 2005); cancers of the breast, colon, and prostate (Calle et al., 2003; Feigelson et al., 2006); osteoarthritis of the weight-bearing joints (Leveille et al., 2005); dementia (Kivipelto et al., 2005; Whitmer et al., 2005); metabolic syndrome

(Maison et al., 2001); gall bladder disease (Dittrick et al., 2005); and premature mortality (Calle et al., 1999; Peeters et al., 2003).

Moreover, obesity appears to be a cause of heart disease even beyond its association with other cardiac risk factors like hypertension, diabetes, and hyperlipidemia (Kenchaiah et al., 2002). A follow-up of the Framingham Heart Study reported that obesity decreased life expectancy by 6–7 years, and the difference in life expectancy between obese and normal-weight adults is similar to that between smokers and nonsmokers (Peeters et al., 2003).

Obesity is associated not only with a wide range of diseases, but Medicare costs accrue with these diseases. Obese Medicare recipients accumulate $170,000 more in Medicare charges than normal-weight controls (Raebel et al., 2004). The more men and women weighed in middle age, the more they accumulated annual Medicare charges.

Surprisingly, a national survey of seriously overweight persons reported that 70% did not view their excess pounds as a health concern ("Most Patients," 1999). Although most respondents were not in denial about being overweight or about the stigma associated with their appearance, they were in denial about the health consequences of their excess weight.

GENETICS, LIFESTYLE, AND ENVIRONMENT

Genetics

Although genes do not destine you to become fat, a family history of obesity increases your chances of becoming obese by about 25% to 30% ("Weight Control," 1994). Moreover, if you are genetically inclined to carry the extra weight primarily around your waist (apple-shaped), you are at higher risk for heart disease, hypertension, stroke, and diabetes than the noncentrally obese (pear-shaped; Young & Gelskey, 1995). A reasonably accurate way of gauging central obesity is to divide the measurement of your waist at its narrowest point by the measurement of your hips (over your buttocks) at their widest point. If you are a woman, a waist-to-hip ratio greater than .85 indicates a health risk; for a man, above .9.

There may also be a genetic thermostat for body fat. Set-point theory states that a genetic thermostat for body fat maintains a fairly constant weight. If body weight decreases through dieting, the set-point either triggers appetite or makes the body conserve energy (lowers the basal metabolic rate) to maintain the fat cells and a set weight. Research supports the idea that the body burns calories more slowly than normal when weight is lost (Leibel et al., 1995). When fewer calories are

consumed, the thermostat is lowered to conserve energy. This is a useful compensation when sources of food are unpredictable or possibly scarce.

The set-point theory needs more empirical support, as does this corollary: Though the thermostat setting for fat cells and weight is resistant to dieting, exercise appears to speed up metabolism and lower the set-point. Muscle has a higher metabolic rate than fat tissue, and exercise increases the muscle-to-fat ratio (Wood et al., 1988).

Lifestyle

Although genetics is a contributor to the development of obesity, the primary reason that an individual becomes overweight or obese is related to lifestyle (Howley & Franks, 1997). By limiting the types of food and how much one eats and increasing daily energy expenditure through physical activity and exercise, one has the ability to make a significant impact on body weight.

The National Weight Control Registry is an ongoing study of 800 persons, average age 45, who shed at least 30 pounds and have kept the weight off for at least 5 years (Klem et al., 1997). Weight loss was confirmed in a variety of ways, including documentation from physicians, interviews with family members or friends, and photographs. The researchers concluded that persistence was one of the most important components of successful weight loss. The average person failed half a dozen times before success was obtained.

Moreover, there was no single, magical way to achieve success, unless you count modifying eating and exercise habits as magical. Most of the participants lost weight on their own, with the second most frequent intervention a consultation with a physician, psychologist, or nutritionist. About 44% limited their food portions, 40% counted calories, 33% limited fat intake, and 25% kept track of fat grams. Only 4% relied on diet drugs, though the study results were obtained prior to a new wave of diet drugs on the market.

Most of the registry's participants had been overweight since childhood, nearly half had at least one overweight parent, and more than one-quarter had two overweight parents. Genes may predispose some toward obesity, but apparently, lifestyle changes can initiate and sustain weight loss. On average, the participants reduced their body weight by 29% and successfully moved into the normal weight range.

A similar study with a smaller sample size ($N = 160$) was conducted earlier by Anne Fletcher (1994), a registered dietitian, and reported in her book, *Thin for Life*. Fletcher distilled her strategies for success from persons who kept off at least 20 pounds (average weight loss was 63

pounds) for a minimum of 3 years (most achieved their weight loss for more than 5 years). The successful strategies employed by this sample of adults included the following:

1. focus on what you can eat, not on what you cannot eat
2. do not deny yourself your favorite foods, and do not worry about periodic slip-ups
3. identify and then avoid high-risk situations and emotional eating
4. find a way to incorporate exercise into your weekly routine
5. identify when you need to seek outside help.

These strategies were later corroborated by a larger sample size employed by the National Weight Control Registry study.

Environment

Most Americans are overweight. Is it our genes, or do we lack willpower? Or is there something else also at play? Perhaps our environment is a major contributing factor. Our society produces an abundance of food: food that is high in fat, sugar, and salt, and much of it is processed and packaged for our convenience; food that is advertised by tens of billions of dollars per year; and food that is available everywhere—gas stations, drugstores, food courts in shopping malls, and vending machines located just about everywhere, including in 98% of our high schools.

Also, during the last 25 years, Americans have doubled the amount they eat at restaurants; and when they eat out, they eat more. In a busy society, consumers seek the convenience that restaurants provide. Consumers also have been seeking greater value at restaurants. Profit-seeking restaurant owners have come to the realization that the food itself is the least costly ingredient of a food product, compared to the costs of labor, packaging, and marketing. Thus restaurant owners are providing ever-larger portion sizes at small increases in cost.

Food is low cost and overproduced in the United States. According to Marion Nestle, an endowed professor in nutrition and health at New York University, there are 3,800 calories produced per person per day in the United States, and we only need about half of that (Nestle & Jacobson, 2000). Food is abundant, ubiquitous, cheap, and fattening, and it is promoted everywhere, all the time.

Environmental Change for Obese Americans

Given how difficult it has been for people to lose weight, it is not surprising that businesses are focused on a complementary challenge: adjusting

the environment for bigger people. Restaurants are providing larger chairs for obese customers, while other establishments have switched to armless chairs and reinforced seats. Airlines are allowing—or increasingly charging for—obese customers to take up two adjoining seats. Those who just barely squeeze into a single airplane seat are requesting seat belt extenders.

Slacks labeled "regular" are now called "slim cut." Those who require a larger size accommodate to "easy fit," "loose fit," or "baggy fit." The clothing industry has accompanied its larger-sized clothing with smaller-sized numbers. Women's clothing has been renumbered: What used to be a size 12 is now labeled a size 8. The petite health writer Jane Brody, who believes she is, at best, a size 4 slack wearer, was thrilled to find a pair of size 0 slacks that fit perfectly.

Hospitals use larger beds and bigger wheelchairs. To avoid the embarrassment of taking a patient down to the loading dock for the use of a scale, human scales have been developed to accommodate up to 1,000 pounds. Rear ends are so large that extra-length needles are necessary for the injection to pass through the fat and reach the buttocks muscles. Medical clinics are adding love seats to the waiting rooms. Open MRI machines are not just for claustrophobic patients, but obese ones as well. Blood pressure cuffs, body fat calipers, and patient gowns are supersized.

Exam tables have been anchored into the floor to prevent obese patients from flipping them as they sit on the end. Floor-mounted commodes prevent them from being pulled out of the wall. Thirty-six-inch-wide doorways have been widened to 52 inches. Portable hoists are placed by bedsides to prevent worker injuries. Hospital suppliers have developed more than 1,000 items specifically for obese patients, including a wider body bag—which leads to a final comment: Funeral homes now offer extra-large coffins that accommodate up to 700 pounds. They are selling briskly.

SHOULD WE GAIN WEIGHT WITH AGE?

Although the answer to this question is controversial, many argue that gaining a few extra pounds with age may be not only common in America, but healthy. Dr. Reubin Andres, clinical director of the National Institute on Aging, conducted a series of long-term studies and found that people in their 60s who were somewhat overweight—according to the Metropolitan Life Insurance charts—but not grossly obese had a better chance of living into their 80s and 90s than those whose weight was normal. Thus he created age-specific weight tables that generally have upper weight limits that are 10–20 pounds higher than the insurance-based tables (Salon, 1997).

A study by the Cooper Institute for Aerobics Research (Lee et al., 1999) appears to support Andres's contention that we need to be more lenient with recommended weight ranges, especially among persons who maintain their fitness. Men who gained significant amounts of weight over time but remained moderately or very fit had lower death rates than men who were in the average weight rate for their group but were unfit.

The chief opponent of Dr. Andres's theory was Dr. Roy Walford at the University of California, Los Angeles School of Medicine, who died at age 79, 41 years short of his goal to live to 120. Dr. Walford practiced what he preached, which was to maintain reduced caloric intake, and placed himself on a lifelong diet in adulthood of 1,500 calories a day. His animal research had shown that underfed rats lived one-third longer than well-fed rats. Other studies have reported that a decreased caloric intake by 30% or more in young or middle-aged laboratory animals prolonged longevity (Masoro, 2005).

Critics of Dr. Walford's research, however, were concerned not only with his extrapolation from rodents to humans, but also with whether longer life on an "eat less" diet, even among the rats being studied, was associated with stunted growth and lower energy levels (Finn, 1988). Comedians are also critical of Dr. Walford's diet, lamenting that eating less may not really lengthen life, it may just make life *seem* longer.

For those willing to risk lower energy levels, increased irritability, malnutrition, and reduced interest in sex, there is the California-based Calorie Restriction Society. The 900 members have cut their calories by about 30% in hopes of living longer lives. For more information, contact http://www.calorierestriction.org.

Though Dr. Andres's extra-weight theory has been supported by some studies (Finn, 1988), it has not been corroborated by others (Tayback et al., 1990; Van Itallie & Lew, 1990). Critics note that Andres's sample is biased toward the affluent elderly, who can pass life insurance medical examinations, and that he ignores health problems like diabetes, hypertension, and hyperlipidemia that are often unfavorably influenced by weight gain.

The Nurses' Health Study also suggests that the increasingly permissive weight guidelines may be unjustified. The researchers tracked the health status of 115,000 female nurses for 16 years and discovered a direct correlation between weight and susceptibility to stroke (Rexrode et al., 1997). Women whose BMI scores rose into the 27–31 range during the 16-year period were 1.7 times more at risk for stroke; women who rose to a BMI of at least 32 more than doubled their risk.

The controversy was further muddled by the results of a large and rigorous study conducted by researchers at the Centers for Disease Control and Prevention and the National Cancer Institute. They concluded that people who are overweight have a *lower* death risk than people of

normal weight (Flegal et al., 2005). Many critics applauded the rigor of the study's methodology; others argued that if overweight leads to hypertension, heart disease, diabetes, hyperlipidemia, and sleep apnea, the results of the study appear to be biologically implausible.

Looking at the contradictory findings, here is how I would summarize the topic: Overweight and obesity is correlated with increased mortality among persons under age 75; after that, it may have no effect on longevity, or it may even extend longevity (Corrada et al., 2006). This may be due to improved medications that are able to reduce mortality or because extra weight provides the body some insurance in the event of a major disease. While longevity may remain the same or even lengthen with extra weight in old age, either outcome may be associated with increased disability (Reynolds et al., 2005). In other words, the extra weight may have little effect on, or even aid, longer life, but it may also mean living more years with disability.

BODY COMPOSITION

Body composition is a better measure of health and fitness than body weight. Improving your fat-to-muscle ratio helps protect you from serious ailments and improves your fitness. No one, however, has been able to evaluate the ideal percentage of body weight that should be fat versus lean tissue. Researchers have attempted, though, to develop broad guidelines for body fat ranges for men and women. Table 7.1 has been derived from data provided in an article by Gallagher and associates (2000).

Notice that the relationship between gender and body fat is—or should be—stronger than the relationship between age and body fat.

Another study reported that middle-aged and older men with more than 24% body fat, and women with more than 31%, are at increased risk for heart disease, stroke, various cancers, high blood pressure, diabetes, and degenerative joint disease (Howley & Franks, 1997).

There are several ways to measure body fat. The gold standard is hydrodensitometry, or underwater weighing, and is based on the principle that fat is less dense than water and that overweight individuals weigh less

TABLE 7.1 Age and Recommended Body Fat Ranges

Age	Men	Women
18–39	9–19%	22–32%
40–59	12–21%	24–33%
60–79	14–24%	25–35%

in water. After air is exhaled from the lungs, the body is immersed into a tank of water, and the underwater weight is registered on a scale. This technique is very accurate but expensive and time consuming (about 30 min).

Skin-fold caliper is the most commonly used method because it is quick and reasonably accurate. Fat is pinched and measured in several areas, including the triceps, suprailium, and thigh for women and the chest, abdomen, and thigh for men. Using fewer sites or employing technicians with inadequate training lowers the accuracy. Even more problematic, however, is that this technique came into use in the 1950s, when people were leaner than they are at this time. Now nearly 25% of women in their 50s have too much body fat to be measured with the traditional 2-inch calipers, and they are being excluded from research samples (Himes, 2001).

Bioelectrical impedance is another standard way of measuring body fat. One electrode is attached to an individual's foot and another to the hand, and a weak electrical current (that is safe and painless) is sent from one electrode to the other. The technique is based on the premise that the signal will travel faster through muscle because water conducts electricity and muscle is 70% water. Fat, in comparison, is about 9% water. Readings, however, can be affected by recent vigorous exercise, a recent bath or sauna, or by alcohol or water intake

Another technique is the Bod Pod, which works on the premise that a muscular body is denser and takes up less space than one that has more fat. The pod has a built-in computer that uses your weight and how much volume you take up and then converts it into a percentage of your body that is fat. Preliminary tests report that this technique and the dual energy X-ray absorptiometry machine (better known for measuring bone density) are nearly as accurate as hydrodensitomtry but not as demanding on the participant (Miyatake et al., 1999).

EXERCISE

It has been said that man does not live by bread alone. It can also be said that man does not control his weight by nutrition alone. Restricting the number of calories consumed without exercising can result in quick, dramatic weight loss. Unfortunately, it can also result in quick, dramatic regaining of weight. About half the initial weight loss will be water, which will be regained, and muscle, which will make us weaker. Dieting without exercise also lowers our metabolic rate (the amount of energy used for physiological processes), causing a reduction in our fat-burning capacity. This not only slows weight loss, but when the dieting ends, the weight is gained back faster than ever.

Exercise, in contrast, assures that weight loss will come primarily from fat, not water and muscle. Exercise also increases the metabolic rate so that the body burns calories more efficiently and over a longer duration. Because muscle tissue is metabolically more active than fat, it burns more calories.

A study of more than 8,000 dieters who lost 10% of their starting weight and kept it off for at least a year reported that their number one successful weight loss maintenance strategy—cited by 81% of respondents—was exercise ("Dieting," 2002). The most common form of exercise was walking, followed by increasing physical activity in one's daily routine. A surprising finding from this study was that an unexpectedly high 29% of respondents reported that they added weight lifting to their exercise regimes.

The vital role of exercise, however, appears to apply more to the maintenance of weight loss than to losing weight in the first place, where changing your eating pattern is the most important behavior change ("Dieting," 2000). A meta-analysis of U.S. studies on long-term weight loss maintenance concluded that exercise, or a high level of physical activity, is one of the two most important ingredients of maintaining weight loss (along with restricted caloric intake; Anderson et al., 2001). The researchers reported that their findings were in agreement with the National Weight Control Registry study (Klem et al., 1997): Exercise and physical activity are essential for most people in maintaining substantial amounts of weight loss over the long term.

Exercise as a weight maintenance strategy, however, may become less effective as we age. Researchers monitored the fat and carbohydrate breakdown for older and younger participants who pedaled 60 min on stationary bikes. Measurement of oxygen consumption indicated how hard they were able to exercise. Then the study subjects pedaled at speeds that made them consume identical amounts of oxygen. Older participants oxidized less than one-third as much fat as their younger counterparts (S. Klein, personal communication, 1997). In other words, older adults appear to burn less fat doing equivalent exercise than younger adults. Paul Williams (1997) of the Lawrence Berkeley National Laboratory concluded that runners would have to increase the amount of mileage they run each decade in order to stay at the same weight.

The best exercises for weight control are a combination of aerobics and strength building. The aerobic activity should involve the large muscle groups like the quadriceps. Longer durations and higher intensity levels accelerate progress but are also likely to increase the likelihood of dropping out of an exercise routine. Strength building increases muscle mass and boosts the metabolic rate, which allows the individual to burn calories longer, not just when exercising.

Can we be fit and fat? Yes, according to the research of Stephen Blair and his colleagues at the Cooper Institute for Aerobics Research. Their data reveal that exercise can reduce disease risk, even if body weight remains high. There is lower cardiovascular risk among persons who are overweight and fit versus those who are normal weight and unfit (Blair et al., 1996; Lee et al., 1999). A study by researchers from the Harvard School of Public Health, however, qualified these findings. You are better off fit and fat than just fat, but fitness does not counter all the risk of excess weight (Hu et al., 2004). Also, when it comes to diabetes, exercise may not fully counter the effects of excess body fat because fat tissue may release substances that affect the metabolism of insulin (Weinstein et al., 2004).

Unfortunately, many Americans believe you can get fit without much physical effort, as proclaimed on commercials and infomercials on television. Instead of accenting the physical effort it takes to lose weight, viewers learn that weight reduction is the consequence of buying a particular product that does not require much physical exertion to use. Over a period of several years, for instance, electrical muscle stimulators were a popular product purchased by consumers. By passing currents through electrodes applied to the skin, you contract muscles and, allegedly, can either build them or reduce them. These devices tend to focus on the abdomen. By placing an electronic exercise belt around your waist and pushing a button, you develop washboard abs. After more than $100 million worth of the devices were sold during 2002, the Federal Trade Commission took three of these companies to court.

Adults also spent $2.5 billion on exercise equipment for home use in 1996 (Jackman, 1997). For a large but unknown percentage of persons who purchase exercise equipment to use while watching television, television viewing, rather than the exercising, continues to be the leisure activity of choice (Buchowski & Sun, 1996).

LOW-CARBOHYDRATE AND HIGH-PROTEIN DIETS

Miracle weight loss diets like the Rotation Diet, the Beverly Hills Diet, and the Scarsdale Diet have been with us for many years, and there is no sign that the popularity of diets is waning. Diets tend to reduce weight in the short run (due primarily to loss of water and high short-term motivation) but invariably prove ineffective in the long run. Diets are condemned by nutritionists and researchers because of lack of long-term supporting data from peer-reviewed studies. But diets in general do not lose their popularity because lo and behold, along comes another one that this time "really works!"

The latest diet craze—actually one that has resurfaced from the early 1970s—continues to be the low-carbohydrate, high-protein diet described in the best-selling book of Robert Atkins, MD (1997), *Dr. Atkins' New Diet Revolution*. Variations of this diet have been developed by Barry Sears (1995, 1997), *Entering the Zone* and *Mastering the Zone*, H. Leighton Steward and colleagues (1998), *Sugar Busters*, Arthur Agatston (2003), *The South Beach Diet*, and several others. What makes this type of diet unique is not only the longevity of its popularity but also the fact that it may really help people lose weight—much to my surprise. It may work, however, for reasons other than the ones offered by its proponents.

Dr. Atkins, who began publishing his work in the early 1970s, and his more recent dietary disciples believe that obesity is increasing in America because we consume too many carbohydrates. If carbohydrates are restricted, blood sugar levels will be restricted, and the pancreas will produce less insulin. With less insulin the body is forced to burn fat reserves for energy.

Opponents of this theory say it is speculative, at best. They argue that the real theory behind this diet is that dieters eat fewer calories, both by consuming fewer carbohydrates and by eating a monotonously high-protein diet that curbs their appetite. Despite the bacon and other high-fat foods that are permitted on this diet, the typical Atkins dieter amasses only 1,500 calories a day (or about 1,700 with the Zone diet).

The differences between these two low-carbohydrate, high-protein diets and the recommendations of the American Heart Association are summarized in Table 7.2 (I provide the average of two different estimates of Dr. Atkins's plan, from the *Nutrition Action Healthletter,* March 20, 2000 issue, page 6; and *Health* magazine, the January/February 2001 issue, page 94).

Protein and fat are doubled in the Atkins diet compared to the American Heart Association recommendations, and carbohydrates are drastically reduced. The Zone and other low-carbohydrate/high-protein disciples—like Sugar Busters (Steward et al., 1998)—are less extreme.

The Atkins diet is beginning to be scrutinized through randomized controlled trials at major health science centers, and the results have

TABLE 7.2 Low-Carbohydrate and High-Protein Diets

Weight loss plan	Protein	Fat	Carbohydrates
American Heart Association	15%	30%	55%
Dr. Atkins	27%	61%	12%
The Zone	30%	30%	40%

been surprising. The Atkins diet, compared to a conventional low-fat, low-calorie diet, produced favorable results after 6 months. Not only did participants lose considerably more weight than the low-fat, low-calorie diet, but there were also improvements in HDL and triglycerides (Foster et al., 2001; Yancy et al., 2001). Another 6-month study, limited by the lack of a control group, reported an average 10% weight loss among the 41 participants who completed it, along with a decrease in fat mass, LDL cholesterol, and total cholesterol/HDL ratio (Westman et al., 2002).

Before the reader runs out and buys a copy of Dr. Atkins's diet book, two cautions need to be noted. Six months does not prove that Dr. Atkins is proposing a healthy diet. The negative results of elevated dietary fat may not appear within that time period. In fact, one study reported that low-carbohydrate, high-protein diets deliver a marked acid load to the kidney, increasing the eventual risk for stone formation. There was also a detrimental effect on calcium levels that may increase the eventual risk for osteoporosis (Reddy et al., 2002).

Moreover, the vitamin and mineral supplementation that Dr. Atkins recommends with his diet may not be an effective substitute over the long term for the vitamins and minerals that are usually obtained through food. The Atkins diet appears to be shy on the B vitamins as well as on vitamins A, C, and D.

Also, the low-carbohydrate/high-protein diet builds up a compound called ketones, which curbs appetite but also makes you nauseous and causes bad breath. About two-thirds of one sample on this type of diet reported halitosis and constipation after 6 months (Westman et al., 2002). In addition to these nasty side effects, the narrow range of the diet is likely to become monotonous. This probably is the major contributor to the low, 1,500 mean daily caloric intake that the Atkins dieters tend to hover around, despite the fact that caloric intake on this diet is not limited. *After* 6 months, though, it is not clear to what extent dieters crave more carbohydrates and how likely dieters are to cycle off of it.

On the positive side of the ledger the Atkins diet may be teaching us a legitimate dietary lesson. Most of the carbohydrates that Americans eat are refined rather than high fiber. These fast-acting carbohydrates unleash a surge of insulin that lowers blood sugar levels below normal, and low blood sugar levels make us feel hungry. Conversely, the high protein content of these diets slows the absorption of food and decreases hunger.

Perhaps the answer is not to reduce carbohydrates, a la Atkins, but to encourage the consumption of more high-fiber complex carbohydrates that satisfy our hunger. And, in a similar vein, we may need to increase lean protein, monounsaturated fats, and polyunsaturated omega-3 fats (avocados, walnuts, salmon, etc.) to satisfy our hunger as well. The secret

strategy to Dr. Atkins diet—curbing hunger—may be achieved in healthier ways over the long term.

The South Beach Diet, developed by Florida cardiologist Arthur Agatston (2003), is an evidence-based, healthy version of the Atkins diet. It discriminates between complex and refined carbohydrates and saturated and unsaturated fats. One study reported that this modified low-carbohydrate diet—higher in complex carbohydrates, protein, and monounsaturated fat—is associated with favorable weight loss outcomes (Aude et al., 2004). On the down side, it relies on the glycemic index, which has not proven to be practical or even sensible at times, and it unnecessarily restricts certain fruits and vegetables, such as carrots, bananas, pineapple, and watermelon.

As the political humorist and quasi-nutritionist Art Buchwald was fond of saying, the word *diet* comes from the verb *to die*. Or stated another way, the best diet is not something special that you go on for a period of time but one that you can maintain over a lifetime, without feeling deprived. When accompanied by a feeling of deprivation, dieting becomes a never-ending cycle of starting and stopping, a cycle that is not only unsuccessful for weight loss and maintenance but also is likely to stress the cardiovascular system with unhealthy consequences (Olson et al., 2000).

OTHER WEIGHT LOSS PROGRAMS

Americans spend about $40 billion a year attempting to lose weight (Hoeger & Hoeger, 1997). Despite this investment, 95% of people who lose weight regain the weight in 5 years ("Weight Control," 1994), and the percentage of overweight American adults continues to increase. Repeatedly losing and gaining weight, or yo-yo dieting, may increase the risk of coronary artery disease and a higher death rate (Olson et al., 2000).

In June 2005, *Consumer Reports* evaluated several commercial weight loss programs on pounds lost, nutritional content, how easy the diet was to follow, and dropout rates after 6 months and 1 year. Weight Watchers (which emphasizes fewer calories) and Slim-Fast (which replaces parts of two meals a day with shakes and bars) did best, followed by the Zone (low carbohydrate), Ornish (very low fat), and Atkins (very low carbohydrate). The magazine based its conclusions on a review of published clinical research and on a nutrient and calorie analysis of a week's worth of menus. Weight Watchers had the best retention rate among dieters, low-carbohydrate diets had much lower rates, and the very low fat diet of Dean Ornish had the lowest (Dansinger et al., 2005).

Consumer Reports, in 1993, had earlier surveyed participants in three very low calorie liquid diets: Optifast, Medifast, and Health Management Resources. Although the participants lost weight more rapidly than regular diet programs, they regained it more quickly as well. Crash diets or very low calorie diets depend on rapid weight loss from loss of water and lean muscle tissue and are usually regained quickly (Caterson, 1990; Stunkard, 1987). The loss of lean muscle tissue can translate into a higher fat ratio, even as weight is lost. In addition, because the metabolic rate has slowed, weight is easily regained and returns mostly as fat because it is easier to gain fat than lean body mass. Dietitians and nutritionists therefore prefer that individuals consume sufficient calories (at least 1,200 for women per day and 1,500 for men) to prevent the metabolic rate from slowing too much.

As the low-carbohydrate diets rapidly lost popularity in 2004 (from a peak participation rate among American adults at 9.1% in February to 4.9% by November), the low-sugar diets such as Sugar Busters, and diets based on the increasing popularity of the sugar substitute Splenda, increased in popularity. These diets were not rigorously evaluated, but nutritionists were unimpressed. The long-term safety of chemical sweeteners has not been established, and critics contend that artificial sweeteners do nothing to diminish cravings for sweet foods. People who eat artificially sweetened foods are likely to eat regular sugar as well. Also, many low-sugar foods have as many calories as the original food products they replace. Consumers remained undaunted in 2005, buying more than $1 billion worth of low-sugar products.

Low-carbohydrate and low-sugar diets had to share the headlines with low-fat diets in 2006. As noted in chapter 3 (Clinical Preventive Services), the Women's Health Initiative study randomized nearly 49,000 postmenopausal women to a low-fat diet or their regular diet, and the results appeared to indicate that dietary fat intake is *unimportant* in cancer or heart disease prevention (Howard et al., 2006; Prentice et al., 2006).

Despite the large sample and the randomization process, this study was far from definitive. The difference in fat intake between the intervention and control groups was modest (69% of intervention women did not reach their 20% fat goal), and follow-up was relatively brief. The study also did not differentiate saturated fats from unsaturated fats. In short, the jury is still out on this longitudinal low-fat study.

A final comment about low-fat diets, one that has been attributed to the Irish dramatist George Bernard Shaw: No diet will attempt to remove all the fat from your body because the brain is entirely fat; without a brain, you might still look good, but all you could do is run for public office.

Christian weight loss programs began in 1957 when Presbyterian minister Charles Shedd urged his readers to pray their weight away. During the 1990s, Christian diet books and church-based weight loss programs began to proliferate, combining evangelical theology, psychology, and nutrition education. Critics have expressed concern about the accuracy of the nutritional advice and the questionable association between losing weight and gaining God's approval.

One of the more successful Christian diet books was Gwen Shamblin's (1997) *The Weigh Down Diet*. This book sold more than a million copies and was followed up with a second book, *Rise Above* (Shamblin, 2000). One concern with her advice is that, despite her background as a registered dietitian with a master's degree in food and nutrition, Shamblin advocated that even people with serious weight problems should turn to God rather than to medical professionals. The other concern is her attitude toward exercise: "Trust God, not exercise. The only exercise you need is getting down on your knees to pray."

The Hallelujah Diet by Rev. George Malkmus was inspired by the Bible's Genesis 1:29: "And God said, 'Behold, I have given you every plant yielding seed which is upon the face of all the earth, and every tree with seed in its fruit; you shall have them for food.'" This diet basically consists of fruits and vegetables, and 80% of what you eat must be raw. The diet is deficient in vitamin B_{12}.

The Maker's Diet was created by Jordan Rubin, a Messianic Jew, who drew his inspiration from the book of Leviticus, which discourages readers away from the vegan regimen of the Hallelujah Diet. Instead, it promotes organic meat and nonpasteurized dairy products. In making up their minds among these proliferating religion-based diets, would-be dieters will need to pray for divine intervention.

It is unclear whether incorporating religious ideology into weight loss or a weight management program is widely practiced, or even whether it is helpful to participants in terms of motivation. Regardless of ideological content, however, program participants in synagogues and churches that follow nutritiously sound diets—a major qualifier—can take advantage of the fellowship, trust, and support that typifies these settings.

Most commercial weight loss programs have been tardy in their inclusion of exercise. In 1993, *Consumer Reports* concluded that "none of the diet programs we investigated give top priority to increasing physical activity." Since that time, however, most commercial weight loss programs have begun to stress the importance of exercise.

One such weight loss program is Weight Watchers. Under this plan, exercise is encouraged along with a weekly support group meeting. The nutritional strategy is to assign a point value based on calories, fat, and

fiber content. The participant is allocated a range of total points each day, which can be spent any way they like. The dieter is encouraged to seek a more rigorous 20% of total calories from fat, rather than the more widespread recommendation of 30%. This commercial weight loss program tends to do well in controlled studies (Heshka et al., 2003; Tsai & Wadden, 2005). Another study reported that Weight Watchers was more effective than a brief counseling and self-help program (Heshka et al., 2003).

Volumetrics is a diet based on portion size and energy density. Dr. Barbara Rolls and colleagues at Pennsylvania State University found that people tend to eat about the same weight of food each day, but how many calories are packed into a given amount of food determines weight gain or loss. Low energy density foods such as fruits, vegetables, low-fat dairy products, and whole-grain breads and cereals have a positive association with weight loss and weight maintenance (Ledikwe et al., 2006).

To calculate low energy density foods, divide the calories in one serving by its weight in grams. Foods with high water and fiber content result in a low density score and are encouraged. Fiber not only adds noncaloric bulk to foods, but holds water, which slows the absorption of food and leads to a quicker feeling of satiety. These types of foods allow one to eat a greater volume (weight) of food while losing or maintaining weight.

About 4,000 overweight individuals each year undertake a pilgrimage to Durham, North Carolina, in order to participate in weight loss and nutrition programs as well as to transfer $51 million into the city's economy. These programs are effective, with one caveat: When you return home, the weight returns as well. The programs provide group support, a supportive culture, personal attention, and medical care associated with weight problems—none of which are brought back home.

The most unique weight loss program (appealing to my eccentric personality) is fidgeting, or what researchers so eloquently refer to as "nonexercise activity thermogenesis" (Levine et al., 2005). Spontaneous fidgeting can make a significant contribution to daily energy expenditure, while nonfidgeters may experience a 10% additional weight gain. Fidgeting is likely to be genetically based, however, and it is unlikely that patients can be successfully counseled to fidget more.

Along this same vein was a purported study (no reference provided) in *Health* magazine that reported on gum chewing. Chomping for an hour on a big wad of sugarless gum raises the metabolic rate 19% and burns 11 extra calories. The researchers alleged that chewing gum every waking hour can knock off 10 pounds a year. It would seem to me that chewing gum every waking hour and missing three meals a day would result in a weight loss of more than 10 pounds a week—until there was no more you. (See Figure 7.1 for another fanciful diet.)

TEN CALORIE DIET

MONDAY	Breakfast:	Weak tea
	Lunch:	1 bouillon cube in 1/2 cup of diluted water
	Dinner:	1 pigeon thigh and 30 oz. of prune juice (gargle only)
TUESDAY	Breakfast:	Crumbs scraped from burned toast
	Lunch:	1/2 dozen doughnut holes
	Dinner:	2 jellyfish skins
WEDNESDAY	Breakfast:	Boiled-out tablecloth stains
	Lunch:	1/2 dozen poppy seeds
	Dinner:	Bee knees and mosquito sauteed in vinegar
THURSDAY	Breakfast:	Shredded egg shell skin
	Lunch:	Belly buttons from navel oranges
	Dinner:	2 eyes from Irish potatoes
FRIDAY	Breakfast:	2 lobster antennas
	Lunch:	1 guppy fin
	Dinner:	1 filet of softshell crab claw
SATURDAY	Breakfast:	4 chopped banana seeds
	Lunch:	Broiled butterfly liver
	Dinner:	Jellyfish vertebrae
SUNDAY	Breakfast:	Pickled hummingbird tongue
	Lunch:	Prime rib tadpoles
	Dinner:	Aroma of empty custard pie plate, tossed paprika and 1 cloverleaf

The first week you lose 50 pounds, the second week you lose another 50 pounds, and the third week we lose you.

FIGURE 7.1 Ten-calorie diet.

BARIATRIC SURGERY

Bariatric surgery is the modification of the gastrointestinal tract for the purpose of initiating substantial weight loss. The most common bariatric procedure uses surgical staples to close much of the stomach so that it can only hold a small amount of food as well as shortening the intestines. Owing to the incidence of complications, subsequent dietary restrictions, and expense ($30,000 for the surgery and 6 months of follow-up care), this technique has been reserved for clients with extreme obesity—those with a BMI of 40 or more—who have attempted nonsurgical weight loss without success.

In 2002, the Internal Revenue Service designated obesity as a disease, allowing eligible taxpayers who spend over 7.5% of adjusted gross

income on medical care because of obesity to deduct expenses for bariatric surgery (as well as for weight loss drugs and nutritional counseling). Two years later, the Centers for Medicare and Medicaid Services reversed a long-standing policy and recognized obesity as a disease, opening the door for Medicare reimbursement of bariatric surgery. (Medicare coverage has always been limited to treatments for illness and injury, according to the 1965 law that created it.)

In 2006, the Centers for Medicare and Medicaid Services began to cover bariatric surgery for seniors (along with previously covered disabled persons), provided they had BMIs of 35 or more, had at least one obesity-related condition, and had unsuccessfully attempted weight loss without surgery. Just prior to this Medicare policy change, bariatric surgeries rose from 47,000 in 2001 to an almost fourfold increase in 4 years—to 170,000 in 2005. Given that 10 million seniors are estimated to be obese, the number of bariatric surgeries is expected to increase substantially more in the coming years.

A major concern with bariatric surgery is complications. An unpublished study by the Agency for Healthcare Research and Quality reported that 40% of 2,522 patients who underwent weight loss operations in 2001 and 2002 had complications develop within 6 months. These complications increased costs by 20%, and for those whose complications required readmission to a hospital, the costs increased more than 100%. The most common complications range from the relatively frequent vomiting and diarrhea to the more serious abdominal hernias, infections, pneumonia, respiratory failure, and the leaking of gastric juices caused by imperfect surgical connections.

Since that time, surgical techniques and the quality of care have improved, and some hospitals that specialize in the procedure have been designated as centers of excellence. To be covered by Medicare, bariatric surgeries must be performed at these centers, where it is believed that older patients do as well as younger ones. One study, however, reported that the risk of complications increases slightly for each additional year over age 60 (O'Rourke et al., 2006).

The good news is that the death rate for bariatric surgery is a relatively low 2 per 1,000 patients and that laparoscopic surgery, which requires only small incisions, has a lower complication rate. As laparoscopy becomes an increasingly favored mode of treatment, complications should be reduced.

CALORIC INPUT AND EXPENDITURE

Lifestyle changes gradually implemented are the key to successful weight management. These changes should involve both eating and activity

habits. People who successfully lose or maintain weight have a favorable balance between caloric input and caloric expenditure.

Calories are a measure of the energy contained in food. They tell us how much work our body can do with the energy it gains when we eat specific foods. If we consume more calories than needed for our particular activity level, we gain weight; if we consume fewer calories, we lose weight.

A nutritionist can prescribe a specific number of calories for an individual to consume each day that is based on weight, age, and level of physical activity. An older adult woman, for instance, who is trying to lose weight but is not physically active might be prescribed a diet of 1,800 calories per day. This fairly rigid calorie limitation does not allow for many empty calories, that is, junk or luxury foods that contain plenty of sugar, salt, or saturated fats and not many important nutrients. The more this older person increases her physical activity, however, the more leeway she can have with her diet.

As a general rule of thumb, daily caloric intake should be 15 times your desired weight, 10 times your weight if you have a light activity level, or 20 times if you have a heavy activity level. Thus if you engage in a moderate activity level and wish to weigh 160 pounds, your daily caloric intake will be approximately 2,400.

It takes a reduction of 3,500 calories a week from the normal calorie level to lose a pound of fat. If you reduce food intake by 500 calories per day, a loss of 1 pound per week will result. If you reduce food intake by 200 calories per day, a loss of 2 pounds per month will result. These modest goals are more likely to lead to permanent changes in eating patterns than are more ambitious weight loss goals. To identify a large number of different suggestions for cutting back 100 calories each day through a small dietary change, access America on the Move at the Web site http://www.americaonthemove.org.

As the number of low-fat foods have proliferated, the percentage of Americans who are obese has increased. This may not be a coincidence. Low-fat foods have calories—sometimes a substantial amount from sugar—and the more low-fat foods eaten, the more calories consumed. The average consumption of fat was 33% of total calories in 1994, down from 40% in the late 1970s, but people still managed to eat between 6% and 15% more calories over this period of time (Harnack et al., 2000; U.S. Department of Agriculture Research Service, 1996).

Portion Control

Nutritionists contend that one of the main problems people have with maintaining or losing weight is portion control (Marston, 1996b). A major

contributor to this problem is that Americans are eating more meals outside the home, relying more on convenience foods, and consuming larger food portions. The Center for Science in the Public Interest, for instance, investigated dinner-house restaurants and discovered that many serving sizes are at least twice that recommended by the U.S. Department of Agriculture (Liebman & Hurley, 1996). A side order of French fries or a muffin ordered at a restaurant, for example, is typically equivalent to two serving sizes.

To get the equivalent of a single drink serving, a customer must drink only two-thirds of a soft drink can; instead, that person might drink the 7-Eleven Double Gulp, which is equivalent to eight serving sizes. Steak portions are typically 5 times what is recommended. Tuna salad sandwiches are almost 3 times the recommended size.

In the 1960s, McDonald's offered one size of French fries, and it contained 200 calories. In the 1970s, the original fries became a small size, and a 320-calorie large size was introduced. In the 1980s, the previous large size became a medium, and a new large size contained 400 calories. In the 1990s, they increased the large size to 450 calories and added a super size with 540 calories. By 2000, the large size became a medium, the super size became a large, and a new super size increased to 610 calories ("Diet & Health," 2001).

Fast-food establishments seem to be engaging in a competition to enlarge portions. Burger King's Ultimate Double Whopper and Wendy's Triple With Cheese both sported slightly more than 1,000 calories. Hardee's created the Monster Thickburger, packed with 1,420 calories and 107 grams of fat. Pizza Hut's Full House XL totaled 2,240 calories. Denny's Beer Barrel Pub in Clearfield, Pennsylvania, was the winner (and consumers the loser) with a 15-pound Barrel Belly Buster Burger that came with 25 slices of cheese. Lest you think it uneatable, Kate Stelnick, a 100-pound college student, consumed it within 3 hours.

One study reported that the amount eaten is related to the size of the portion placed in front of the person. Subjects consumed 30% more calories when offered 1,000-g lunches than when offered 500-g lunches, regardless of whether the portion was offered on an individual plate or served in a serving dish (Rolls et al., 2002). A researcher conducted a series of studies investigating portion size, and when the container is bigger, regardless of whether it is filled with popcorn, M&Ms, granola bars, or carrots, more calories are consumed (Wansink, 2004). Brian Wansink's (2006) book, *Mindless Eating: Why We Eat More Than We Think,* concludes that visual clues are more important than a feeling of fullness in determining how much we eat. The bigger the plate, the larger the spoon, the deeper the bag, and the more gluttonous our dining companion, the more we eat.

Complicating the problem of portion control is that between 1955 and 1996, Americans doubled the number of meals eaten at restaurants (Marston, 1996b; U.S. Department of Agriculture Research Service, 1996), where meals tend to be oversized and high fat. Americans, however, are not just eating oversized portions in fast-food restaurants, they are serving larger portions in their own homes (Nielsen & Popkin, 2003). This may be due to the increasing likelihood of encountering large portion sizes when they eat out and perceiving them as normal size.

Meat and Milk

The two largest contributors of fat to the American diet are hamburger and milk. Unfortunately, extra-lean and low-fat versions of these products are neither lean nor low in fat. Using the formula for calculating the percentage of calories from fat (grams of fat × 9/total calories), extra-lean ground beef is really 48% fat calories, and low-fat, 2% milk is really 38% fat calories.

Why is there confusion on this matter? Because calculating fat as a percentage of the overall weight of the food product disregards the fact that much of the content may be water. Take 90% *lean* meat, for example. Sounds healthy, right? Wrong. It is the percentage of fat by weight, not the percentage of calories from fat. Remove the 50% of water content which has no calories, and you find that 51% of calories come from fat. What about 80% *lean* meat? A whopping 70% of calories come from fat! That is considerably higher than the recommended 30% level.

Holiday Gain

The good news is that many Americans gain only four-fifths of a pound during the mid-November to mid-January holiday period. The bad news is that this gain may not be reversed during the rest of the year, and this translates to a 24-pound weight gain over 30 years of celebrating the end-of-year holidays (Yanovski et al., 2000).

10 TIPS FOR WEIGHT LOSS OR MAINTENANCE

Applying the 10 Tips model from chapter 4, Health Behavior, to weight loss or weight maintenance produces the following list of suggestions:

1. *Motivation.* Two general categories of motivation when it comes to behavior change are improved function and disease prevention. Is the client motivated by functioning better, that is, more

energy, better mood, and so forth? Or is he or she motivated by avoiding, or alleviating the impact of, heart disease, arthritis, and so forth? With the topic of weight loss or weight maintenance, though, there is another motivational source: appearance. Does the client want to look good, fit into his or her clothes, and garner the approval of others? The challenge is to find out which motivation works best for the client and then encourage him or her to be conscious of this motivation on a daily basis, perhaps through strategically placed written reminders.

2. *Modest.* Clearly a 1-pound weight loss each week is more achievable than a 40-pound weight loss goal with no particular time frame in mind. An even more modest goal is to avoid a focus on poundage and to focus instead on improved nutrition and exercise; that is, establish a goal to eat one additional fruit and vegetable each day, to substitute one whole-grain product for a refined one each day, or to walk briskly an additional time or two each week.
3. *Measurable.* Make sure that the client's goal is measurable and that it is also for a measurable and modest period of time, perhaps a week or a month. What will clients accomplish at least 4 days during the upcoming week: one additional vegetable serving on each of the targeted days? Do clients' measurable goals modestly allow them to have days during the week when they do not have to be met?
4. *Memory.* Can clients place a subtle, or not-so-subtle, sign on the refrigerator? Can a list be prepared before going food shopping and complied with during shopping? Do clients need a friend to call regularly to remind and motivate them? Do clients need to associate a brisk walk with an existing habit that they will rarely miss, such as dinner, and then decide to walk just before or after it?
5. *Positive thoughts.* It is hard to nurture positive thoughts when it takes the average person several failed attempts before he or she can succeed at weight loss. Hard, but not impossible. Encourage clients to be persistent, until positive thoughts finally match positive deeds.
6. *Reinforcement.* Losing weight or maintaining a desired weight tends to be reinforcing in its own right. But if clients need additional external reinforcement, just about any reinforcement not involving food will do.
7. *Environmental support.* If at all possible, keep junk food out of the house. Have a jar of healthy snacks handy. Keep another jar of water in a prominent place in the refrigerator, and make sure

it is always stocked with carrots or celery. Place health magazines around the house. Keep enjoyable activities (crossword puzzle, letter writing, organizing a photo album) at strategic locations in the house, as a substitute activity for snacking.

8. *Stress management.* This is particularly important with weight loss or weight maintenance because emotional disturbances can lead to poor eating habits. One of the best stress managers is also the best technique for long-term maintenance of weight loss—exercise. For most people, timing exercise before meals decreases appetite, or timing it between meals, when you are most likely to snack, can take your mind off eating. Other techniques, such as deep breathing or progressive muscle relaxation, may also work.
9. *Social support.* Someone who used to be overweight and has kept the weight off makes for a particularly effective social support person. But just about any person who genuinely cares for the person will do. Multiple sources of support are preferable to reliance on a single person.
10. *Problem solve.* The typical client can examine several failed previous attempts at achieving a desired weight or anticipate new problems likely to emerge in the future. Another problem-solving strategy is to keep a record of what is eaten, where it is eaten, and who it is eaten with, and try to reduce unhealthy eating patterns triggered by emotions (see Table 4.2, Food Behavior Diary, in chapter 4, Health Behavior).

SELECTED WEIGHT MANAGEMENT TOPICS

Diet Drugs

In the 1960s and 1970s, the drug of choice for desperate dieters was amphetamines, or speed, which promoted weight loss by boosting metabolism. Unfortunately, the drugs caused more problems than they solved, not the least of which were addiction and serious side effects. In the 1990s, two new drugs were introduced to Americans: fen-phen (fenfluramine and phentermine) and Redux (dexfenfluramine).

With one-third of Americans seriously overweight and a majority of them unsuccessfully attempting to reduce to a healthier and more socially acceptable weight, it was not surprising that fen-phen and Redux became best-selling diet drugs. New prescriptions for fen-phen increased by 6,390% in the 4 years before fenfluramine was taken off the market in 1997, and

similar statistics were estimated for Redux, which had been sold in this country for 16 months prior to its withdrawal from the market in 1997.

In total, these two diet drugs were prescribed to more than 50 million people in the United States (60 million worldwide), with 18 million prescriptions filled in 1996 alone. The drugs worked by curbing people's appetites, and studies reported the average weight loss to be about 20 pounds in a year's time. Regrettably, the drugs had been linked to heart valve abnormalities (Connolly et al., 1997), life-threatening pulmonary hypertension (Mark et al., 1997), and long-lasting brain cell damage in animals. Brain cell damage may have also occurred in humans because short-term memory loss had been reported in 13% of the people who had taken fen-phen.

Defenders of diet drugs proclaim that the hazards from serious obesity are a far greater risk, resulting in 300,000 deaths a year from heart disease, diabetes, kidney disease, and stroke. Many people who had taken the diet drugs, however, were not getting the results they wanted; some were not even obese and getting the drugs from commercial weight loss clinics without a physician's supervision.

The next generation of antiobesity drugs are activating different weight loss mechanisms. Meridia came on the market in 1998, and it acts on the brain to reduce hunger and enhance satiety and therefore reduces portion size and snacking. Dieters using this drug lost about 10 pounds more than non-drug-taking dieters. While it does not pose the risk of heart valve damage that forced the ban on Redux and fenfluramine, it can elevate blood pressure and pulse rate, even as patients are losing weight. It is also believed to be psychologically and physically addictive.

Xenical was approved by the Food and Drug Administration (FDA) in 1999. It interferes with the enzyme that digests fat and can reduce by one-third the amount of dietary fat a person absorbs. Trial results indicated that those taking Xenical lost 14 pounds during the first year, while those taking a placebo lost 8 pounds. For a 6-pound weight loss, though, the consumer paid $6 a day, took a multivitamin pill to compensate for the fat-soluble vitamins blocked by the drug, and may have experienced unpleasant gastrointestinal side effects. Also, weight loss occurred during the first 8 months; after that, subjects started to regain weight ("The New Diet Pill," 2000).

Nonetheless, in 2006, the FDA recommended that the weight loss pill Xenical be sold over the counter. The drug took a new name, Alli, and consumers received with it a weight loss and exercise guide, along with a free online behavioral support program.

The latest pill, Acomplia, helps clients not only to lose weight, but allegedly helps them to quit smoking, lower alcohol and drug abuse, and

reduce risk factors for heart disease and diabetes. The trial study resulted in larger weight loss and fewer side effects than Xenical/Alli or Meridia. The likelihood, though, is that it will fall far short of being a magic bullet for weight loss and other proposed benefits.

In the last several years, herbs have grown popular for promoting weight loss. St. John's wort, taken for years in Germany to lift sagging spirits, has been used for weight loss in America. Repackaged with names similar to the unavailable fen-phen, like Herbal Phen Fuel and Diet Phen, this herb has not been tested for weight loss.

An herbal mixture used at Nutri/System weight loss centers was called Herbal Phen-Fen, a combination of St. John's wort and ephedra. Ephedra, an herb that is also known as ma huang, was a major constituent in many herbal weight loss products and appeared to work in the short run. But ephedra was also the likely culprit in approximately 800 health problems reported to the FDA, including more than 40 deaths ("Are Natural Fen-Phens Safe," 1998; Haller & Benowitz, 2000).

In 2004, the FDA banned the sale of dietary supplements containing ephedra—the first time the FDA had banned a dietary supplement since the Dietary Supplement Health and Education Act (examined in chapter 8, Complementary and Alternative Medicine) had been passed in 1994. In 2005, though, the ban was partially overturned to permit low-ephedra products, less than 10 mg, to be sold.

Emotional Distress

A study of 183 overweight older adults reported that those individuals who exhibited the most effective dieting behaviors might also be particularly vulnerable to emotional distress when desired foods are removed from their diet (Rosendahl & Kirschenbaum, 1992). Dieting may be especially difficult for older adults who become discouraged by the inevitably slow progress that results from their slower metabolic rates.

A program called the Solution encouraged older dieters to add aerobic exercise and social support to the changes undertaken in their eating patterns and to focus attention on counteracting a tendency to seek love and comfort from food or drink. These interventions may help to offset the emotional distress and discouragement that can result from dieting (Mellin et al., 1997).

Aerobic exercise may also be an effective component of a weight loss program. It may not only enhance the ability to achieve dieting goals, but it may also improve mood, reduce depression, decrease somatic symptoms, and reduce muscle tension (McNeil et al., 1991). Though mixed,

evidence on the impact of exercise on psychological function is promising (Blumenthal et al., 1991).

A social support component of weight loss programs may be especially important to older dieters who are vulnerable to emotional distress while dieting. The positive and independent effects of exercise and social contact on depressive symptoms was reported by McNeil and colleagues (1991). Social support may be provided by sharing experiences with peers or by seeking it from a spouse or health professional. In one study, two-thirds of people who received strong support from friends, both within and outside of a weekly weight loss meeting, sustained their weight loss for at least 10 months, compared with just one-fourth of those who attended the meetings without such support (Wing & Jeffery, 1999).

An intervention for keeping off extra weight is yoga, despite the fact that it does not burn off much in the way of calories. Researchers found that people in their 50s who regularly practiced yoga lost about 5 pounds over 10 years, while a comparison group, controlled for physical activity and diet and that did not practice yoga, gained more than 13 pounds (Kristal et al., 2005). The researchers believed that yoga helped people cultivate awareness—particularly toward stress, sadness, and other emotions—making them less likely to overeat.

Competitive Eating and Implications for Advocacy

Given America's fixation on food and on competitive events, it was not surprising to find out that there is an International Federation of Competitive Eating, and most of the events take place in America (Hesser, 2002). The most popular competitive eating event takes place in Coney Island, New York, on July 4 each year, and is hosted by Nathan's, known for its hot dogs. Nathan's has sponsored this annual event almost every year since 1916.

The dominant *gurgitator* (competitive eater) has been a relatively slender Japanese man named Takeru Kobayashi, who has won the contest every year since 2001, capped off by his record-breaking 53.75 dogs in 12 min on July 4, 2006. Kobayashi's technique is to separate the bun, dip it in water to condense it, and eat it separately from the hot dog.

Steve "the Terminator" Keiner ate only 20 hot dogs at Nathan's Annual Hot Dog Eating Contest. But Keiner was proud of his very American strategy—a pile driver approach—keeping hot dog and bun together as he rammed them down his throat. When explaining his eating philosophy, the Terminator said he combines the American pile-driving strategy with a Zen philosophy: "I went down a path that the hot dog was one with me and I was one with the universe."

There is something sad and funny about this anecdote. Sad, because many Americans have an unhealthy relationship with food. And besides the excess weight, gorging on food can pose immediate health dangers. Funny, because Americans are a diverse and tolerant lot, and perhaps we do not need to get the Wellness Police to shut down a New York tradition into its ninth decade. (In the interest of reportorial candor I should note that Nathan's hot dogs were one of my favorite foods growing up in Brooklyn about a half century ago.)

There is a similar conflict in attitude regarding obesity. Most persons would argue that obesity is unhealthy and that we need to do as much as possible to reduce this epidemic. Yet a growing number of health promoters advocate a more laissez-faire approach because some overweight Americans are fit and should be left alone, and others are not helped by the stigma and rejection that add to their burden.

A more laissez-faire approach toward overweight *individuals*, however, does not necessarily mean a do-nothing approach. The food industry spends $30 billion on marketing food each year, and the government spends only a tiny fraction of that amount on nutrition education. What should be done to address this imbalance?

Should we tax junk food to subsidize nutrition education? Should soda be banned in public schools? Should restaurants be required to provide nutritional content of their food servings in a conspicuous place? Should breakfast cereals that have as much sugar as candy bars be required to display labels that they are breakfast candy rather than cereal? Should so-called lean beef be redefined so that the beef is actually lean?

The general issue of health advocacy, including advocating for better nutritional habits in this country, is discussed in more detail in chapter 14, Public Health.

Surfing for Slimness

Here are three computer-related strategies for losing weight:

1. http://www.eDiets.com—This Web site claimed that its 800,000 registered members had lost a total of 1,744 tons. That sounds like a lot of tons, but it actually turns out to be a modest 4.36 pounds per person.
2. http://www.HealthandAge.com—This Web site does not make claims for weight loss, but it does provide interesting articles. It also provides its older Web surfers with a choice of normal, large, or extra-large font size for their reading pleasure.
3. The last strategy for losing weight is, ironically, to spend less time sitting in front of your computer.

QUESTIONS FOR DISCUSSION

1. Do you believe that gaining extra weight with age is healthy? Support your view. Then take the opposite view and support it.
2. For an older person who wants to follow the American Heart Association's recommendation for fat as a percentage of total calories, how many grams of fat should be consumed with an average daily caloric intake of 2,100 kcal?
3. A 70-year-old woman has been unsuccessful with losing weight, despite watching her caloric intake and increasing her activity level. She wants to try a low-carbohydrate/high-protein diet. What is your advice to her?
4. The body mass index is ineffective for assessing what types of individuals, and why?
5. What role does exercise play in weight management?
6. What is your sense lately about the general public's opinion toward the low-carbohydrate/high-protein diet? Why do you think that is happening?
7. Review the 10 Tips; which one appeals to you the most, and why?
8. In your opinion, which is a bigger problem in old age, obesity or malnourishment? Why?
9. If you had developed your own effective weight loss program and you wanted to implement a program with older adults in your community, where do you believe would be the best place to locate it: a physician's office, a church, or another community location? Explain your answer.
10. Regarding weight management, which is more important: lifestyle counseling or environmental change? Explain your answer.
11. Without regard to political correctness, or health correctness, for that matter, which diet discussed in this chapter intrigues you the most, and why?
12. Are you a supporter of Dean Ornish's heart healthy diet, which restricts fat content to 10% of total calories? Why?
13. A few researchers are working on the topic of whether calories eaten at night are more likely to cause weight gain than calories eaten during the day. I believe the answer will be no. What do you think, and why?
14. Examine One other topic in this chapter that you found interesting and has not been explored when answering the previous questions. Why did you find this interesting?

CHAPTER EIGHT

Complementary and Alternative Medicine

NATIONAL CENTER FOR COMPLEMENTARY AND ALTERNATIVE MEDICINE

The Office of Alternative Medicine existed between 1992 and 1998 as the newest and smallest of the institutes of the National Institutes of Health. In 1998, it was renamed the National Center for Complementary and Alternative Medicine (http://www.nccam.nih.gov) and given a budget increase to $50 million, up from an initial budget of $2 million in 1992. In 2000, the budget increased to $70 million. This 35-fold increase in the budget for complementary and alternative medicine over an 8-year period confirms the growing significance that the U.S. Congress has attached to this movement.

At the same time the federal government appeared to resolve the conflict over the labeling of this movement, settling on the National Center for Complementary and Alternative Medicine. The original name—Office of Alternative Medicine—was considered too adversarial, as if the consumer must choose between it and more conventional medicine. Another popular term, *complementary medicine*, suggested that these types of activities are used only in conjunction with more traditional, allopathic medicine. The compromise term and acronym, *complementary and alternative medicine* (CAM), reflects that consumers sometimes use it as an alternative to mainstream medicine and sometimes along with it.

Two other labels that are often used are *integrative medicine* and *holistic health care*. However, CAM has become the most popular term since the U.S. Congress gave it its blessing with the renaming of the national center.

The purpose of the National Center for Complementary and Alternative Medicine is to sponsor research on nontraditional topics like

mind-body medicine, manipulative and body-based therapies, energy therapy, dietary supplements, and other modalities that are off the beaten research path. The primary goal of the National Center for Complementary and Alternative Medicine is to begin to separate research fact from practitioner and consumer fancy and to answer the question, Do these therapies work?

This question is not unique to CAM, as the movement toward more evidence-based medicine in mainstream medicine attests to. Also, the safety of CAM services is not necessarily more of an issue than it is in traditional allopathic medicine. The Institute of Medicine reported in 1999 that medical mistakes in mainstream medicine caused between 44,000 and 98,000 deaths per year. In 2006, the Institute of Medicine reported that drug errors injure at minimum 1.5 million Americans annually.

The characteristics in Table 8.1 are typically associated with CAM versus the biomedical—or allopathic or mainstream—model of health care.

PREVALENCE OF COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM)

In 1997, 40% of American adults used some type of complementary or alternative care (Astin, 1998), an increase from 33% of American adults in 1991 (Eisenberg et al., 1993). The 1991 survey conducted by Eisenberg and colleagues reported that the number of visits to providers of CAM exceeded the combined number of visits to all U.S. primary care physicians by 37 million. Visits to complementary and alternative healers resulted in the expenditure of nearly $14 billion that year, with only 25% of the cost covered by health insurance.

Given the differing definitions of CAM and the variability in sample selection among studies, it is not surprising how inconsistent survey results

TABLE 8.1 Characteristics of Complementary and Alternative Medicine and the Biomedical Model

Complementary and alternative medicine	Biomedical model
Patient responsibility	Health professional responsibility
Mind/body/spirit	Body and mind separate
Healer serves as guide	Physician in charge
Holistic	Specialized
Promoting health	Fighting disease

are regarding CAM usage over the life cycle. One study reported that the highest use of complementary and alternative healing, 50%, was in the baby boomer group, ages 35–49 (Eisenberg et al., 1998); but another study reported that the highest use was between ages 50 and 64 (Astin, 1998). Yet another study reported widespread usage of CAM among older adults, reaching 88% of this segment of the population (Ness et al., 2005), versus a study that reported 61% of older White Americans and 47% of older African Americans utilized CAM (Flaherty et al., 2001).

Although we may not have reached a consensus on CAM utilization patterns over the life cycle, it should be noted that these techniques are primarily utilized for chronic conditions—conditions that increase both in number and severity with age.

Among all age groups, there is a failure among clients of CAM to notify their physicians about their treatments (Astin, 1998). One study reported that more than three-quarters of the clients of CAM therapies neglected to communicate with their physicians. In another study, among older adults, 52% of White Americans and 58% of African Americans failed to communicate with their physicians (Flaherty et al., 2001). Among Medicare recipients in yet another study, 58% did not discuss CAM use with their physicians (Astin et al., 2000). Regarding dietary supplement usage, one study examined the medical charts of 182 older adults; only 35% of self-reported dietary supplements were documented in the medical charts (R. Cohen et al., 2002).

There are several reasons why CAM users may not want to communicate with their physicians. They may believe their physicians do not approve of their activities, do not understand their motivations, or do not have the expertise to contribute to their own CAM knowledge. The consequences of this lack of communication, however, can be serious. For instance, over-the-counter herbal therapy—plant-derived preparations to improve function, prevent illness, or counteract pain—can diminish or alter the effects of prescription drugs.

TYPES OF CAM

Exactly what constitutes CAM has never been clearly established. Reinforcing this assertion, the National Institutes of Health is known for providing a definition of CAM that describes what it is not, rather than what it is: "Those treatments and health care practices not taught widely in medical schools, not generally used in hospitals, and not usually reimbursed by medical insurance companies."

Despite the imprecision, some practices have been consistently associated with CAM. Herbal medicine and other dietary supplements fit

into the CAM bailiwick, for instance, and will be given considerable space in this chapter. A collection of techniques, referred to as mind-body medicine, falls within CAM and might include such modalities as meditation, visualization, prayer, humor, Tai Chi, yoga, and support groups.

Another set of techniques associated with CAM, and often referred to as manipulative and body-based therapies, includes chiropractic, massage therapy, postural restructuring, and osteopathic medicine. Energy therapies refer to yet another group of CAM methods that include healing touch, Reiki, magnetic field therapy, and laying on of hands.

Many CAM techniques are hard to categorize, like acupuncture (small needles inserted into a variety of points along the body's "meridians"), homeopathy (highly diluted substances with little or no active chemical content but that leave an "energy signal"), and chelation therapy (intravenous infusion of ethylenediamine tetraacetic acid to bind heavy metals in the bloodstream).

There are also activities like nutrition education and exercise, which are sometimes included in CAM. Nutrition and exercise, however, are claimed by many different types of practitioners to be a part of their purview, including the practitioners of allopathic medicine, though oftentimes, it is only included as an add-on strategy that is superficially presented to a patient.

Popular CAM Techniques

Diaphragmatic Breathing

One symptom of stress is shallow and rapid breathing. One way to counteract this symptom is through diaphragmatic breathing, also called belly breathing, deep breathing, or yoga breathing. This technique is easy, convenient, and has face validity for most adherents. In other words, people feel better quickly. From a research perspective the technique's short- or long-term effect on stress management is largely untested, and the results with disease management are mixed (Cahalin et al., 2002; DeGuire et al., 1996). However, one study on slow breathing, that is, slowing respiration to six breaths per minute, reported a decrease in blood pressure in hypertensives (Joseph et al., 2005).

This technique is not easy for many older adults to learn (based on my personal experience teaching it). The imagery I use to facilitate learning is to imagine your stomach and chest as a pitcher to be filled with air. Place one hand on your stomach and the other on your chest, and inhale for about 6 s through the nose (this warms and moistens the air and screens impurities). Raise the lower hand as the air fills up the bottom of the pitcher, then the upper hand as the top of the pitcher is filled. Exhale for about 8 s, with

the upper hand moving in first as the top of the pitcher is emptied; then draw in the abdomen as the bottom of the pitcher is emptied last and the lower hand moves in. The placement of the hands on the stomach and the chest help to clarify this breathing procedure (see Figure 8.1).

Because most persons are shallow chest-breathers, light-headedness may occur. To reduce or avoid light-headedness, decrease the length of the inhalation and exhalation. After sufficient practice, this exercise can be lengthened in time and repeated multiple times over the course of the day.

Progressive Muscle Relaxation

Another symptom of stress is muscle tension. Edmund Jacobson began his work on reducing muscle tension through progressive muscle relaxation in 1908. Jacobson believed that tension can manifest itself in any muscle in the body, and in order to relax, you must learn to differentiate between muscle tension and relaxation. There has been little scientific inquiry to produce evidence in support or refutation of this technique.

FIGURE 8.1 Belly breath.

This may not be the ideal relaxation technique for older people with painful arthritis or a heart condition. Clients with these conditions need to consult with their physicians and may choose to eliminate or just to imagine the tension phase of the technique, or clients can focus exclusively on visualization, which tends to follow this technique.

One way to determine which sequence of muscle groups to tense and relax is to start from your head or your feet and continue in the opposite direction. For each part of your body, hold your breath and the tension for 3 or 4 s, and then relax. When relaxing, exhale slowly and steadily. After exhalation, spend a few seconds paying attention to the way you feel, and then move on to the next part of your body:

1. Tense your forehead by raising your eyebrows.
2. Wrinkle your nose and purse your lips together.
3. Tense your whole face; squeeze in like a prune.
4. Shrug your shoulders.
5. Tense your left arm, then your right arm.
6. Tense your left fist, then your right fist.
7. Tense your shoulders toward the back, slightly arch your back, then lift up your head.
8. Squeeze your abdomen tight.
9. Squeeze your buttocks together.
10. Tense your left leg, then your right leg.
11. Bend your left toes, cock your left ankle, then your right toes and right ankle.

After some practice at this technique, you may begin to recognize and locate tension that consistently collects in a specific part of your body. You can then use a mini-version of this procedure at any time to let go of tension in that area.

Visualization

Relaxation can be further facilitated by following progressive muscle relaxation with 10 min of visualization or imagery. One popular image is to recall the warmth of the sun, the sensation of a gentle breeze, the sound and smell of the ocean, and the sight of a swaying palm tree. Just visualize and relax.

Or, if you like wellness guru Donald Ardell's offbeat sense of humor (which I do), try the imagery that he suggests:

> Picture yourself near a stream. Birds are singing in the crisp, cool mountain air. Nothing can bother you here. No one knows this secret place. You are in total seclusion. There is the soothing sound of

> a gentle waterfall, and the cool water is fresh and clear. And, without any effort, you can make out the face of the person whose head you are holding under the water.

Interactive guided imagery is a component of visualization that involves guidance by a trained therapist. The therapist may focus on relaxation and visualization and then direct your attention to an ailing part of your body (including internal organs) and ask you to focus healing thoughts on it. One study used guided health imagery with former smokers and found that after 24 months, abstinence rates were doubled for the guided imagery group than for the placebo control group (Wynd, 2005).

An organization that provides training for health professionals and laypersons in visualization or guided imagery, and that can refer you to a local qualified therapist, is the Academy for Guided Imagery, P.O. Box 2070, Mill Valley, CA 94942; 888-289-4325, http://www.healthyroads.com.

Relaxation Response and Meditation

The relaxation response is based on the technique of meditation, but without the Eastern spiritual overtones. It operates on the premise that the repetition of a sound or word (like *one* or *peace*) is equivalent to the repetition of a mantra (a one- or two-syllable sound) that is part of a meditation technique. (For more information on relaxation response techniques and theory, see Benson, 1984.) The repetition of either a sound or a mantra produces the same effect: deep relaxation.

Researchers at the Maharishi University in Fairfield, Iowa, have reported in academic journals that the technique of transcendental meditation—first brought to the United States in the 1950s by Indian guru Maharishi Mahesh Yogi and later popularized by the Beatles—is an effective option for lowering high blood pressure. Through randomized and controlled, single-blinded trials, the researchers report that meditation lowers blood pressure as effectively as hypertension drugs, but without the side effects (Alexander et al., 1996; Castillo-Richmond et al., 2000; Paul-Labrador et al., 2006; Schneider et al., 1995), and may decrease mortality in older persons (R. Schneider et al., 2005).

Meditation may also be associated with changes in the brain's physical structure. The prefrontal cortical area—an area of the brain associated with attention—was thicker in meditation participants than in matched controls (Lazar et al., 2005). Differences were especially notable in older persons, suggesting that meditation may help reduce the cortical thinning that occurs with age.

Both the relaxation response and meditation are based on the technique of letting thoughts drift away from one's mind as they arise. This

generally is referred to as emptying one's mind, but in actuality, the technique is better described as thoughts that are allowed to pass through the mind as they arise, while the participant keeps returning to the chosen repetitive sound. The meditation may be performed in the following way:

1. Find a comfortable position. Most people prefer to be seated, though some choose to lie down. (Some people complain that they are likely to nap when they lie down; it is unclear if, or by how much, a short nap is less effective at revitalizing the body and mind.)
2. Sit quietly with eyes closed; perhaps run through a quick version of progressive muscle relaxation.
3. Begin to repeat to yourself, softly, your word or sound (choose one that is pleasing to you and that you are not likely to forget).
4. Continue for 15–20 min, opening an eye to check the time if you like, or set a timer in another room so you hear it as a soft auditory reminder.
5. Practice once, preferably twice, a day, before a meal when digestive processes are not too distracting, and at a consistent time of the day (e.g., before breakfast and dinner) in order to establish a habit.
6. Most important, do not evaluate each session, even if you believe (and undoubtedly you will) that your thoughts have dominated your attention and prevented you from repeating your word or sound very often. Instead, choose a trial period (perhaps 1 month), and determine whether the sessions as a whole are having a favorable impact.

Although repeating a sound or word is the most popular meditative device, some people prefer to visually focus on the center of a yantra (a geometric form), or imagine a peaceful scene (such as the beach or the woods), or pay attention to their inhalation and exhalation patterns.

Stress management techniques, like meditation, are deceptively simple. As a past meditator for 20 years (I have preferred deep breathing techniques for the past several years), this technique is easy to learn but difficult to sustain. To help form a stress management habit, it is important to establish a consistent routine, and it is helpful to have a partner to reinforce your practice.

Acupuncture

One major source of stress is coping with chronic physical pain. In November 1997, a committee of independent physicians and scientists at the National Institutes of Health (NIH) reviewed a wide range of research

findings and reported that acupuncture treatment—the 2,500-year-old Chinese needle therapy that has been on the fringe of American medicine for years—is effective for pain control and nausea and has the promise to be beneficial in other areas as well.

The NIH committee encouraged insurers, both public and private, to cover acupuncture services for nausea caused by anesthesia, chemotherapy, and pregnancy as well as for postoperative dental pain (National Institutes of Health Consensus Development Panel on Acupuncture, 1998). Only 19% of health plans provide acupuncture benefits, however, and Medicare is not one of them.

The Chinese theory behind acupuncture—that the body is made up of channels of energy flow called Qi (pronounced chee) and that inserting needles into specific points on the body relieves energy blockages along these channels—has not received support from Western science. Research does support the idea, though, that acupuncture needles inserted into specific nerve junction points on the body and rotated or electrically stimulated will increase the production of the body's own natural painkilling chemicals.

In 1997, 34 states licensed or regulated the practice of acupuncture by nonphysicians and provided training standards for certification. In addition, the Food and Drug Administration (FDA) regulates the needles as part of its medical device authority. The number of acupuncturists in the United States has grown to 10,000, including almost 3,000 physicians who are members of the American Academy of Medical Acupuncture. To find a licensed or certified specialist, contact the National Certification Commission for Acupuncture and Oriental Medicine (http://www.nccaom.org) or the American Academy of Medical Acupuncturists (http://www.medicalacupuncture.org). To find out more about acupressure—pressure applied by hands rather than needles—access the Web site of the American Organization for Bodywork Therapies of Asia (http://www.aobta.org).

Research on the effects of acupuncture on cocaine addiction, rheumatoid or osteoarthritis, low back pain, asthma, emesis, menopausal symptoms, and myocardial disease has been negative or mixed (Berman et al., 2004; Margolin et al., 2002; Shen et al., 2000; Vickers et al., 2004; Witt et al., 2005). Interestingly, the placebo effect—sham acupuncture that consists of needles placed superficially at nonacupuncture sites—appears to be quite strong (Melchart et al., 2005; Witt et al., 2005).

Therapeutic Massage

Chances are you will feel better after a good massage. In addition, there are studies to suggest that a therapeutic massage has a greater impact on lower back pain than acupuncture (Cherkin et al., 2001) and produces migraine relief as well (Hernandez-Reif, 2001; Hernandez-Reif

et al., 2001). For listings of licensed professionals in your area, contact the American Massage Therapy Association (http://www.amtamassage.org).

Chiropractic

Chiropractors focus on spinal and extremity manipulation, physical medicine modalities, rehabilitation, and nutrition. They are licensed in all 50 states and can become board certified in such subspecialties as orthopedics, sports medicine, and nutrition. Patients seek chiropractic doctors for musculoskeletal disorders, with low back pain being the most likely referral. Several studies report that manipulation by chiropractors provided as much or more pain relief, increased activity levels, and produced greater patient satisfaction than medical treatment for low back pain (Hurwitz et al., 2002; Kaptchuk et al., 1998; Sierpina, 2001).

One study reported that chiropractors spent more time with their patients than physicians, explaining their treatment for low back pain and advising them about self-care once they get home (Hertzman-Miller et al., 2002). Consequently, chiropractic patients were more satisfied with their care. Differences in satisfaction disappeared, however, when equal time was spent on explanations and advice about self-care.

It should also be noted that chiropractic manipulation is not without risk. If you want additional information on this practice or referral information, contact the American Chiropractic Association, 1701 Clarendon Boulevard, Arlington, VA 22209; 703-276-8800; http://www.acatoday.com.

Hypnosis

The committee of independent physicians and scientists at the NIH reported that hypnosis may be effective for treating some types of pain. Hypnosis is a deep state of relaxation, accompanied by inertia, passivity, and a narrowing of consciousness. This technique has considerable potential for reducing anxiety and has been used with patients undergoing coronary angioplasty (Kanji et al., 2004). Guides are available to help clients learn self-hypnosis (Davis et al., 1995), and there is a professional society that focuses on hypnosis research (Society for Clinical and Experimental Hypnosis, http://www.sunsite.utk.edu/IJCEH).

Biofeedback

The NIH committee recommended biofeedback for tension headaches. Biofeedback uses a machine to make you aware of bodily processes that you do not ordinarily notice (muscle tension, skin surface temperature, brain

wave activity, skin conductivity or moisture, blood pressure, and heart rate) so that you can bring them under voluntary control. A directory of certified biofeedback practitioners in local areas is published by the Biofeedback Certification Institute of America, 10200 West 44th Avenue, Suite 310, Wheatridge, CO 80033-2840; 303-420-2902; bcia@resourcecenter.com.

Magnet Therapy

A few poorly controlled studies, generating substantial publicity from positive results, led to $200 million in sales in 1999 for magnets manufactured for healing purposes. When studies began to use control groups and participants could not be sure who was wearing real or sham magnets ("Attracted to Magnets?," 2000; Collacott et al., 2000) or ionized or placebo bracelets (Bratton et al., 2002), no differences in pain relief were found.

One recent magnet study utilizing a treatment and control group was able to report differences in self-rated pain and physical function. But the claim of using a blinded sample was probably offset by the fact that the magnet pad attracted metal objects (Hinman et al., 2002). Although only 10% of treatment participants admitted to this detection, others may have noticed an attraction and experienced a placebo effect from the discovery.

Aroma Therapy

Aroma therapy may have been in use since 3000 B.C. It is based on the practice of treating patients with essential oils extracted from plants. There is speculation that, beyond the effects of the treatment's pleasant smell, the oils may affect certain parts of the body when they are inhaled or absorbed by the skin.

One study found that 60% of severely demented patients who had lemon balm rubbed into their faces and arms twice a day for 4 weeks reported a significant reduction in their symptoms of agitation, compared to only 14% of those treated with a placebo lotion (Ballard et al., 2002).

Laughter

There are organizations that certify people as laughter leaders, and there are laughter clubs. There is also an International Laughter Day each year on May 6—mark your calendar. One study reported that an inverse relationship existed between laughter and heart disease (Clark et al., 2001). But does laughter ward off heart problems, or are people with heart disease just less likely to laugh? It does not matter—go ahead and laugh. For information on training and speakers, access the American Association for Applied and Therapeutic Humor (http://www.aath.org).

CAM AND MEDICAL EDUCATION

CAM has established a presence in medical schools and residency programs in the United States. Sixty-four percent of U.S. medical schools reported offering CAM courses, 68% as electives and 31% as part of required courses. The majority of courses were offered by departments of family practice, followed by departments of internal medicine (Wetzel et al., 1998). Other researchers reported that 30% of U.S. medical school family medicine departments and non-university-based family practice residency programs taught CAM, and an additional 6% were starting to teach it. The instruction was predominantly elective (72%; Carlston et al., 1997).

This interest in CAM in medical education does not necessarily mean an endorsement of it. Many medical schools and residency programs are offering CAM courses and lectures in order to better inform physicians and students about what patients are doing ("Complementary Curriculum," 2000). First-year medical students at one large midwestern medical school reported that most students (84%) were interested in learning about CAM because they perceive this knowledge will be important to them when they become physicians and their patients are using it (Greiner et al., 2000).

Naturopathic Medical Colleges

Naturopathy emphasizes the healing power of nature, and practitioners attempt to support the body's own healing capacity with natural therapies. There are four naturopathic medical colleges in the United States and 14 states in which licensed naturopaths can legally practice medicine as primary care physicians. Between 4,000 and 5,000 naturopaths have graduated from 4-year accredited programs.

The state of Washington leads the country in naturopathic medicine. Seattle is the home to Bastyr University, the largest naturopathic school in the country, and in 1996, the state of Washington became the first to require insurance companies to cover complementary and alternative therapies in their benefit plans. The first publicly funded natural medicine clinic—staffed with naturopaths, other alternative therapists, and conventional health professionals—opened in the Seattle area in October 1996.

Naturopaths complete 4 years in a medical college and take national licensing exams. These physicians receive training that is similar in many ways to traditional physicians, plus they receive excellent training in the areas of nutrition (comparable to registered dietitians) and herbal medicine. These practitioners use herbal medicine, massage, and acupuncture; take X rays, blood, and urine tests; and, in some states, perform minor surgery and prescribe antibiotics.

Naturopaths are more inclined than medical doctors, however, to try alternative treatments that have little or no credible scientific backing, such as homeopathy—prescribing infinitesimal doses of herbs and minerals, which in larger amounts would produce an ailment's symptoms, in order to stimulate the body's curative powers; color therapy—wearing purple to lower blood pressure and yellow to prevent stroke; and colonic irrigations—a powerful, machine-delivered enema. The Liaison Committee on Medical Education, the accrediting body for U.S. medical schools, does not recognize naturopathic medical colleges.

To acquire more information, contact the American Association of Naturopathic Physicians (http://www.naturopathic.org), or call 866-538-2267.

SELECTED CAM TOPICS AND RESOURCES

CAM Insurance

Nearly two-thirds of HMOs offer coverage for at least one form of CAM, usually chiropractic (65%) or acupuncture treatments (19%), followed in the single digits by massage therapy, biofeedback, or homeopathy ("Getting a Boost," 1999). Coverage of chiropractic treatment is mandated by 42 states, acupuncture by 7 states, and massage therapy by 2 states. The state of Washington requires that insurers cover all categories of providers, including acupuncturists, massage therapists, and naturopaths.

Chiropractic coverage is endorsed by some insurers because there are studies that report this type of treatment is as successful at treating patients with chronic low back pain as allopathic care, while costing substantially less. One study, however, reported that chiropractic care is more expensive than medical care for the treatment of low back pain (Kominski et al., 2005).

CAM coverage is endorsed by some insurers in the hope of attracting higher educated consumers with higher incomes and better health. In general, though, CAM coverage is quite limited, with insurers waiting for research results on clinical efficacy and cost-effectiveness (Pelletier et al., 1999). When insurers do cover a CAM therapy, it is deemed for medically necessary reasons, visits are limited, and deductibles and copayments are high (Eisenberg et al., 1998).

Oxford Health Plans in Connecticut became the first major U.S. health care plan to offer comprehensive coverage for a wide range of CAM services. Its network of 2,000 alternative providers include licensed practitioners of acupuncture, chiropractic, naturopathy, massage therapy,

nutrition, and other specialties like yoga and Tai Chi. These services are available for an additional premium (Lagnado, 1996).

In 2006, Medicare made a breakthrough by reimbursing participation in two prevention programs developed by Drs. Dean Ornish and Herbert Benson. These comprehensive health promotion programs—nutrition education, exercise, cognitive restructuring, and so on—also include CAM activities such as yoga, meditation, deep breathing, and support groups. Ornish's program is offered at eight sites in Pennsylvania and at five medical centers in West Virginia; Benson's program is in Indiana, Rhode Island, Tennessee, Washington, and Virginia.

This marks the first time that the federal government reimburses Medicare beneficiaries for lifestyle intervention programs. These two programs have led a shift from an exclusive focus on the biomedical model to also including complementary medicine. Coverage will be for 36 sessions within an 18-week period, with a possible extension to 72 sessions in 36 weeks. Medicare eligibility will be limited to those with cardiovascular conditions.

Weil and Chopra

Dr. Weil is on the medical school faculty at the University of Arizona in Tucson, where he developed a 2-year residency program that integrates traditional medicine with other disciplines, such as meditation, nutrition, herbal medicine, acupuncture, and osteopathic manipulation. He has published several books, such as *Spontaneous Healing*, *Eight Weeks to Optimum Health*, and *Healthy Aging*, and reports receiving thousands of questions a week online at his Web site (http://www.drweil.com).

Dr. Weil is without question the best known and most influential purveyor of CAM. His opinions have become more mainstream over the years, and he regularly appears on the cover of national magazines and television shows such as *Larry King* and *Oprah Winfrey*. His ideas on exercise, nutrition, and stress management are sensible and science based. His views on dietary supplements, however, are way ahead of the research, in this author's opinion. Dr. Weil appears to take the generally more supportive and less rigorously conducted European studies on dietary supplements at face value and, as a consequence, prematurely recommends an astonishingly broad array of supplements.

Dr. Chopra's ideas are more in the mystical realm. He writes books and a monthly newsletter; recites lyrics and poetry on CDs; delivers lectures and seminars; sells tapes, herbs, and aromatic oils; and has plans for breaking into movies and television and establishing a chain of healing centers. The Chopra Center for Well Being in La Jolla, California (http://www.chopra.com), dispenses aromatherapy, massage, and spa food (for $3,000 a week, lodging not included), along with conventional medicine.

Dr. Chopra's popularity appears to be waning, along with many other charismatic health and spiritual gurus such as Tony Robbins, John Bradshaw, Robert Bly, Marianne Williamson, James Redfield, and others. To the extent that they advocate critical thinking and provide a more balanced view about the medical mainstream, they serve a useful purpose for expanding our strategies for improving our health. To the extent that they are interested in being gurus and raking in every last buck from a gullible public, they expand their bank accounts more than our health care options.

CAM Organizations

The American Holistic Medical Association (AHMA) and the American Holistic Nurses Association (AHNA) are educational associations that focus on holistically oriented health care—health care that emphasizes the biological, psychological, social, and spiritual dimensions. These associations provide information on alternative healing therapies as well as local referrals. AHMA can be accessed at P.O. Box 2016, Edmonds, WA 98020; 425-967-0737; http://www.holisticmedicine.org. The AHNA can be reached at P.O. Box 2130, Flagstaff, AZ 86003; 800-278-2462; http://www.ahna.org.

The Center for Mind-Body Medicine provides information for health professionals and laypersons alike. Its projects include mind-body studies, community programs for the working poor and indigent, and support groups for people with chronic illness. For more information, contact the Center for Mind-Body Medicine, 5225 Connecticut Avenue, NW, Suite 414, Washington, DC 20015; 202-966-7338; http://www.cmbm.org.

Commonweal is a support program for people with cancer who seek physical, mental, emotional, and spiritual healing, and a professional development program for health professionals who care for people with life-threatening illnesses. For more information, contact Commonweal, P.O. Box 316, Bolinas, CA 94924; 415-868-0970; http://www.commonweal.org.

The National Wellness Institute is an organization for professionals and laypersons interested in promoting health and wellness. Its annual summer conference at Stevens Point, Wisconsin, attracts advocates who want to redress national health care policies that focus primarily on the treatment of sickness. For more information, contact the National Wellness Institute, P.O. Box 827, Stevens Point, WI 54481; 800-243-8694; http://www.nationalwellness.org.

The Complementary and Alternative Medicine Program at Stanford is the only university-based research center focused on CAM and aging adults. The goal is to apply CAM therapies to enhance successful

aging. To obtain additional information, contact the Stanford Prevention Research Center, Hoover Pavilion, 211 Quarry Road, N229, Stanford, CA 94305; 650-723-8628; http://camps.stanford.edu.

CAM Journals

Alternative Therapies in Health and Medicine (http://www.alternative-therapies.com)
Alternative and Complementary Therapies (http://www.liebertpub.com)
Positive Health (http://www.positivehealth.com)

DIETARY SUPPLEMENTS

For many years the conventional wisdom in the nutritional sciences has been that a balanced diet is sufficient to achieve all nutritional goals. Horwath (1991), for instance, reported that purchasing healthy foods within the context of a balanced diet is more effective and less costly than purchasing supplements. She also noted that the suspected value of any particular dietary supplement is subject to change with each new research finding. Horwath concluded that it is best to rely on the variety of good foods provided by nature.

Over the following decade, however, an increasing number of researchers have been finding evidence for the need for specific dietary supplements. For example, the research supporting folate as a supplement was so persuasive that the FDA required manufacturers of breads, cereals, pasta, and other grain products to fortify their products with it. The American public, however, has gone one giant step further, finding the need to buy a wide range of dietary supplements. This need is so strong that one study reported that 71% of regular patrons of dietary supplements would continue to use them, even if research proved them to be ineffective (Blendon et al., 2001)!

Cautions

There are good reasons to be more cautious taking dietary supplements than the general public appears to be. It is not clear, for example, if dietary supplements are adequate substitutes for nutrients in foods. Most dietary supplements are narrowly targeted, while the nutrients in foods work in synergy.

Phytochemicals are an example of this distinction. These are recently discovered chemical compounds found in abundance in fruits

and vegetables that seem to exert a powerful synergistic effect in cancer prevention (Hoeger & Hoeger, 1997). These compounds, however, are impossible to replicate in pill form. Adults who eat a poor diet and try to compensate with a variety of specific supplements will not derive the same benefits they would from healthy eating because of the inability to replicate synergistic chemical compounds in pill form.

Another caution with taking supplements is that they can be dangerous. An overdose of vitamin A can cause headaches, nausea, diarrhea, liver problems, and hip fracture (Feskanich et al., 2002a). Too much vitamin D can cause appetite loss, fatigue, nausea, and constipation; can lead to abnormal calcium deposits in the body; and can adversely affect the kidneys. An overdose of bran can lead to seriously reduced calcium absorption. Excess vitamin B_6 can cause numbness; vitamin E, bleeding; and niacin, gastric problems and liver damage.

In addition, people on medication need to be careful with taking dietary supplements. For instance, a person taking Coumadin, a blood-thinning medication, should avoid vitamin K, which can negate the effect of this medication, and avoid several herbs, like ginkgo biloba, that can unsafely exacerbate the effects of blood-thinning medication.

Finally, people need to be cautious about the proclaimed benefits of dietary supplements, which are often exaggerated. If consumers acquire a false sense of security regarding supplements, it may contribute to a failure to pay sufficient attention to the nutritive value of the foods they eat.

Dietary Supplement Health and Education Act

In 1994, the federal government created the Dietary Supplement Health and Education Act, which eliminated premarket safety evaluations for a wide variety of dietary supplements, including many herbs, vitamins, minerals, and hormones. The FDA can now only intervene after consumers complain about illnesses from supplements, and even then the FDA can only restrict the product if it can be proven that the specific supplement caused the harm. This is difficult to accomplish because it is hard to separate out people who did not take the supplement as directed, or who exceeded the recommended dose, or who took different types of supplements simultaneously, or who engaged in some other confounding practice.

Before 1994, the FDA regulated nutritional supplements through premarket safety evaluations, similar to the procedure required for food and drugs. Most herbs and all vitamins that were sold in dosages exceeding 150% of recommended daily allowances (RDA) were considered to be prescription drugs in 1993.

Though the lay public remained bullish on the prospects of dietary supplements, after the 1994 legislation passed, the FDA quickly logged more than 2,500 reports of side effects associated with dietary supplements, including 79 deaths (Neergaard, 1998). Because the government decided to take a caveat emptor, or buyer beware, approach to regulating supplements, there has been insufficient consumer guidance about what works, what does not work, and what the potential side effects are.

The 1994 legislation also allowed advertisers to make unproven claims—for instance, that their product reverses aging—as long as the product is not being sold at the same time. Even false claims on product labels, which are illegal, are not being punished because government agencies lack the resources for enforcement. Moreover, the unprotected consumer has to contend with the lack of regulation over product purity as well as the amount of active ingredient in a supplement. Two packages of the same product may contain vastly dissimilar amounts of active ingredients.

Without safeguards against grandiose advertisement claims, it is not surprising that dietary supplements became a booming business beginning in 1995. Dietary supplement sales went from $9 billion in the United States in 1995, to $16 billion in 2000, to $21.3 billion in 2005. An equal amount of money is spent on functional foods, that is, foods claiming to be "enhanced" by supplements.

In 2000, 52% of Americans used dietary supplements on a sometime (32%) or regular (20%) basis (Blendon et al., 2001). A survey of Americans aged 50 and older reported that 59% used dietary supplements at least once a month, with 52% taking them daily (Eskin, 2001).

Utilizing herbs, vitamins, minerals, hormones, enzymes, and many other natural products, Americans have attempted to improve mood, increase sleep, ease achy joints, enhance memory, strengthen immune function, increase intelligence, boost stamina, relieve stress, prevent wrinkles, or reverse the aging process. All these claims are being allowed on the labels of dietary supplements without evidence to support them, thanks to the Dietary Supplement Health and Education Act.

It took a whole decade for this legislative act to ban even a single supplement—ephedra—and even then, the ban was partially rescinded to allow small amounts of this product. Ephedra products claimed to promote weight loss and increase energy, but they also drove up blood pressure and were linked to many cases of heart attack and stroke. The FDA finally banned sales of most ephedra products in 2004, after more than 18,000 adverse events and an estimated 100 deaths were tied to this weight loss product that contains an amphetamine-like herb.

Things had gotten so out of hand in this "get government off our backs" political era that as this book was going to press, even the dietary

supplement industry was backing federal legislation that would (for the first time!) require supplement manufacturers to report serious adverse events linked to their product to the FDA. In the case of ephedra, it eventually came to light that manufacturers had been sitting on many adverse event reports over the years that they were not obligated to pass on to the FDA.

Given the widespread public use and limited government regulation, it is important to encourage research on dietary supplements. Unfortunately, research studies in the United States have been limited because many dietary supplements are naturally occurring substances that cannot be patented, thereby reducing the incentive for manufacturers to invest money in research. Research on dietary supplements has been more common outside the United States, but the methodologies have been less rigorously designed.

VITAMIN AND MINERAL SUPPLEMENTS

Multivitamin

Half of American adults are taking multivitamins and minerals (Landers, 2006). In the last edition of this book the evidence appeared to be persuasive that this was a good idea. Lately, this recommendation has become more controversial. Let us start with the positive results.

In an essay in the *Journal of the American Medical Association*, Ranjit Chandra (1997)—a physician twice nominated for a Nobel Prize in medicine—reported that deficiencies in vitamins and trace elements have been observed in almost one-third of sampled older adults. He further observed that, since it was expensive and impractical to analyze the blood levels of various nutrients in individuals on a periodic basis, all older adults should take a multivitamin containing modest amounts of vitamins and minerals as good preventive medicine practice.

A review of studies that were published between 1966 and 2002 reported that all adults, but especially older adults, should take a daily multivitamin (Fletcher & Fairfield, 2002). A review of nutritional interventions involving older adults in clinical trials concluded that nutritional supplements boost immunity among older adults (High, 2001). A placebo-controlled, double-blind study resulted in the recommendation that older adults take a low to moderate dose of a daily multivitamin in order to make a significant difference in immune response (Bogden et al., 1995).

Dr. Chandra (2001) conducted a placebo-controlled, double-blind study with 86 older adults and concluded that those who took a multivitamin supplement showed significant improvement in short-term

memory, problem-solving ability, abstract thinking, and attention and a decline in infection-related illnesses. No improvement in cognition or immune response was found in those who took the placebo.

Robert Butler, MD, Pulitzer Prize–winning author and former chair of the Department of Geriatrics and Adult Development at New York's Mount Sinai Medical Center, agrees with the practice of routinely taking a multivitamin. Butler once considered vitamin and mineral supplements a rip-off, but his concern about the methods of food production and processing led to the recommendation that older adults consume an inexpensive multiple-vitamin supplement on a daily basis (R. Butler, personal communication).

What has happened since then? The research of the internationally recognized Dr. Ranjit Chandra on the strengthened immune response of older adults on daily multivitamins has been questioned. Independent statisticians concluded that his methods and statistical findings were so unlikely that they doubted whether his studies had even been done. When asked for the raw data, Dr. Chandra reported that they had mysteriously disappeared. The editor of *Nutrition* wrote an editorial that acknowledged serious statistical flaws in an article that they had published of his and regretted that their peer review process failed to identify them before publication of Dr. Chandra's article.

Dr. Chandra's research, from the time he published in *The Lancet* in 1992 to the article in the journal *Nutrition* in 2001, had been lauded as a landmark contribution to the field of nutrition and immunity. During that time, Dr. Chandra formulated and then patented a supplement based on his findings and licensed the rights to his daughter, who founded a company that sold the multivitamin, called Javaan 50. Many experts now question the validity of Dr. Chandra's findings and the link of his research to the selling of a profitable dietary supplement.

A study since then reported that regular use of commonly available multivitamin and multimineral supplements is *unlikely* to reduce infections or associated use of health services for people living at home (Avenell et al., 2005). A panel of nutritionists, biostatisticians, and epidemiologists met at the NIH in May 2006 and concluded that there was no evidence to support the regular use of multivitamins. Moreover, given that 65% of Americans consume fortified foods or beverages, they may be unknowingly exceeding the upper safe limits of some vitamins.

I am personally not yet willing to give up my multivitamin, but I am no longer confident about recommending it to others. As is the case with many areas of research, stay tuned.

Calcium and Vitamin D

As noted in chapter 3 (Clinical Preventive Services), the Women's Health Initiative studied 36,000 women between the ages of 50 and 79 and found that calcium and vitamin D had only a small effect on bone density and no significant effect on the rate of fractures (R. Jackson et al., 2006). However, many women in the placebo group had high intakes of calcium and vitamin D, and many women in the treatment group did not consistently take their supplements. Among those who did at least 80% of the time, there was reduced risk of hip fractures. While we await further results from this longitudinal study, experts uniformly recommend the continuation of calcium and vitamin D supplementation.

In 1997, the Food and Nutrition Board of the National Academy of Sciences increased the recommended intake of calcium for adults over age 50 by 50%, to 1,200 mg of calcium daily. There is widespread recognition, based on research findings and a recommendation by an NIH panel, that even this amount may not be sufficient for postmenopausal women and that 1,500 mg/day is recommended.

The current average calcium intake for women is only 600 mg/day, and for women over 70, it is even less. To supplement this amount, most people cannot drink three or four glasses of milk every day or eat other calcium-rich foods like broccoli on such a repetitive basis. Moreover, calcium can be a difficult mineral to absorb; it clings tightly to wheat bran, for instance, making the calcium in some cereal milk go largely unabsorbed. Other foods that inhibit calcium absorption are spinach, green beans, peanuts, and summer squash. Also, high levels of protein, sodium, or caffeine in the diet have each been associated with high levels of excretion of calcium in the urine.

Thus a calcium supplement is recommended by geriatricians for most postmenopausal women. Several cautions do apply. It is important not to take the supplement in one dose because the body absorbs best when smaller amounts—doses of 500 mg or less are ideal—are ingested throughout the day. Also, not all pills contain the same amount of calcium. Calcium carbonate (Tums, for example) is 40% calcium versus the 21% in calcium citrate, thereby requiring fewer tablets and less cost. Calcium citrate, on the other hand, is better absorbed than calcium carbonate and does not have to be taken in conjunction with food.

Vitamin D enhances the absorption of calcium, and its recommended intake doubled several years back to 400 IU daily for people aged 51–70, and tripled to 600 IU daily for those aged 71 and older. This is the first time that the Food and Nutrition Board of the National Academy of Sciences has made RDAs for adults over age 70, making it official that the nutritional needs of younger adults, baby boomers, and older adults are different.

Most older adults are deficient in vitamin D for a variety of reasons. They are unable to absorb the vitamin from foods as efficiently as when they were younger. They also tend to be outside less, where vitamin D can be produced from exposure to the sun. And while 15 min/day outside is sufficient for younger persons, the skin becomes less effective at absorbing vitamin D as we age.

During the colder months in northern climates it is almost impossible to receive the ultraviolet light needed for vitamin D production. It is important during winter to eat fish, eggs, liver, and meat, which naturally contain vitamin D, or to drink milk or orange juice fortified with vitamin D. Perhaps the best idea is to take a multivitamin or calcium supplement with sufficient amounts of additional vitamin D.

A randomized, double-blind, controlled trial reported that supplements of high-dose vitamin D *without* calcium taken every 4 months for 5 years lowered the fracture rate by 22% among persons aged 65 and older living in the community (Trivedi et al., 2003). Other studies also report that vitamin D sufficiency may be more important than high calcium intake for risk reduction in falls (Bischoff-Ferrari et al., 2004; Flicker et al., 2005; Steingrimsdottir et al., 2005).

For the first time the Food and Nutrition Board has set upper limits for some vitamins and minerals. The upper intake level for calcium is 2,500 mg/day, and for vitamin D, it is 2,000 IU/day. Too much calcium can contribute to kidney stones; too much vitamin D can actually cause bone loss.

If calcium and vitamin D supplements are discontinued by older adults, the positive effects are reversed (Dawson-Hughes et al., 2000). The supplements offer only temporary benefit and, by themselves, are insufficient protection for bones. It is essential to engage in regular weight-bearing exercise, like walking, which stresses the bone in a way that allows it to retain calcium.

Vitamin B_{12}

Vitamin B_{12} (cobalamin) helps maintain red blood cells and nerve cells and is needed to make DNA. It is found naturally in animal foods such as meat, poultry, fish, eggs, and dairy products. A deficiency in B_{12} can lead to fatigue, memory loss, balance problems, constipation, and depression.

The National Academy of Sciences, which advises the federal government on nutrition, urged people over age 50 to take a vitamin B_{12} supplement or to eat cereals fortified with B_{12} ("Take Vitamin B-12," 1998). The academy reviewed several research studies and concluded that up to 30% of persons over age 50 cannot absorb B_{12} in foods, primarily due to the onset of atrophic gastritis—a reduction in the ability to secrete stomach acid that allows us to separate vitamin B_{12} from the protein in food and thereby utilize it.

The Framingham Offspring Study reported that 39% of their national sample had low B_{12} levels. Some participants had primarily a vegetarian diet and failed to get enough in their diets. Others did get sufficient amounts of meat, poultry, and fish but had difficulty with absorption. The authors speculated that an increased use of antacids may contribute to the absorption problem (Tucker et al., 2000).

Researchers are beginning to report therefore that persons over age 50 should consider increasing the RDA for vitamin B_{12} in their diets from 6 mcg to 25 mcg ("Vitamin B-12," 1998). Though most multivitamin supplements have only 6 mcg, Centrum Silver and other supplements designed for older adults typically have 25 mcg. An option to dietary supplementation that is nearly as effective is to eat B_{12}-fortified cereals and dairy products five or more times a week (Tucker et al., 2000).

Vitamin E

As is true of many areas of nutritional research, there seems to be a pendulum effect, and the new millennium brought in a pendulum that swung away from recommending vitamin E supplementation.

At first, there were a number of promising observational studies that associated high intakes of vitamin E with protection against cancer and heart disease. Studies of older adults taking vitamin E supplements of 200 IU/day (significantly higher than the 30 currently recommended) reported improved T-cell function and other immune function tests (Chandra, 1992, 1997; Meydani et al., 1997). As we age, we produce fewer T-cells and antibodies that help us attack viruses and cancers and fight infection.

Vitamin E also appeared to be important in the reduction of risk for heart disease. It seemed to be a potent antioxidant that attaches directly to LDL cholesterol to prevent damage from free radicals. A study in the *New England Journal of Medicine* (Kushi et al., 1996) reported that older women who eat more food rich in vitamin E reduce their chance of heart disease by almost two-thirds. A study in *The Lancet* (Stephens et al., 1996) reported that adults who were given 400 or 800 IU of vitamin E a day for 18 months had a 77% lower risk of heart attack.

Vitamin E supplementation also appeared to reduce prostate cancer incidence and mortality in male smokers in Finland and provided some protection against colorectal and lung cancer among persons of this ethnic background (Heinonen et al., 1998). Yet another study reported that 1,000 IU of vitamin E twice a day slowed the progression of Alzheimer's disease, though it did not stop or reverse it (Sano et al., 1997).

The next generation of research studies was more rigorously conducted, and the results were not at all positive. The effects of long-term vitamin E supplementation produced no significant results in comparison to a placebo in cancer incidence, cancer deaths, myocardial infarction, stroke, or cardiovascular death (HOPE Trial, 2005; Lee et al., 2005). In fact, the risk of heart failure was *higher* in the vitamin E group than in the placebo group (HOPE Trial, 2005). A meta-analysis of 19 randomized, placebo-controlled trials reported that vitamin E *increased* the risk of all-cause mortality, and this dose-dependent increase began at 150 IU/day (Miller et al., 2005).

A study of 9,500 patients at high risk for cardiovascular events reported that treatment with vitamin E for 4.5 years had no apparent effect on cardiovascular outcome in comparison to a randomly assigned control group (Heart Outcomes Prevention Evaluation Study Investigators, 2000). Another study reported that vitamin E supplements did not reduce the risk of cardiovascular disease over a 3-year period (Hodis et al., 2002). An additional study reported that 2 months of vitamin E supplementation had no significant effect on protecting fat molecules in cell membranes from oxidative damage (Meagher et al., 2001).

One interesting study reported that vitamin E intake in food (green, leafy vegetables and corn, whole grains, nuts, olives, and vegetable oils) may slow a decline in mental function among older adults, whereas a vitamin E supplement may not (Morris et al., 2002). Another study conducted with 5,395 residents in the Netherlands who were aged 55 and older reported a similar conclusion. Vitamin E intake from food sources may reduce the risk of developing Alzheimer's disease, while vitamin E from supplements may not (Engelhart et al., 2002).

Because most of the studies that supported vitamin E supplementation were observational rather than more rigorous clinical trials (for an examination of potential problems with observational research, see Menopause section in chapter 3, Clinical Preventive Services), two additional explanations emerge: (a) persons taking vitamin E supplements may have also had a diet richer in vitamin E, and this may have accounted for the early positive results; and (b) persons taking vitamin E supplements may also have been more likely to include healthier lifestyle practices in their daily routines.

So what do the experts think? It depends on whom you ask. *Consumer Reports on Health* ("Should You Take," 2001) polled 16 experts on heart health and 13 experts on cancer prevention. Among the heart experts, three recommended vitamin E supplementation, seven believed the jury is still out, and six said no. Among the cancer experts, three recommended supplementation, one said the jury was still out, and nine said no.

The experts might be even more cautious, as has been the general population, since the studies came out in early 2005 that daily vitamin E doses of 400 IU or more can boost the risk of heart failure, and even 150–400 IU/day may have a detrimental effect. U.S. sales of vitamin E supplements, as a consequence, were down 25% in 2005.

For those who choose to continue to take a vitamin E supplement while the research is inconclusive, it is not clear what the recommended amount should be—though 150 IU/day or less seems prudent. Researchers also believe that while the body usually cannot tell the difference between natural and synthetic vitamins, it can with vitamin E. Natural vitamin E (d-alpha tocopherol) is absorbed into the bloodstream about twice as well as the synthetic form (dl-alpha tocopherol; "Is There a Difference," 2000).

One final caution: Vitamin E supplementation is not recommended for individuals on anticoagulant therapy as vitamin E is an anticoagulant in itself.

Vitamin C

For almost 30 years, millions of people followed the lead of Nobel laureate Linus Pauling and consumed vitamin C pills to fight the common cold and cancer. The late Pauling earned his laurels for work in molecular structure, however, not vitamin C, and most scientists rejected his theory that vitamin C is an antioxidant that fights disease-causing free radicals.

Nonetheless, studies on the positive effects of vitamin C appear from time to time. The most promising of these studies suggest that vitamin C supplementation may prevent cataracts. Cataracts are thought to result from the oxidation of lens protein, and vitamin C may prevent this oxidation. One study of long-term vitamin C supplement use among 492 nondiabetic women over a 15-year period was associated with a 60% reduction in the risk of cataracts when compared to no supplement use (A. Taylor et al., 2002).

This study corroborated an earlier report that linked 10 plus years of vitamin C supplements with far fewer cataract surgeries (Jacques et al., 1997). Another study associated the regular use of vitamin C, vitamin E, or multivitamin supplementation for longer than 10 years with a significantly lower risk for developing cataracts (Mares-Perlman et al., 2000).

On the basis of studies like this, the NIH and the National Cancer Institute proposed raising the current RDA for vitamin C from 60 mg/day to up to 200 mg/day (Levine et al., 1999). The advisory board of the *University of California, Berkeley Wellness Letter* recommends a daily supplement of 250–500 mg of vitamin C per day.

Most nutritionists argue that the recommended five daily servings of vitamin C–rich fruits and vegetables would easily meet the minimum recommendation for daily vitamin C. Unfortunately, only 9% of Americans eat the recommended minimum of five daily servings of fruits and vegetables ("Vitamin Report," 1994).

Antioxidant Cocktail

The antioxidant vitamins are vitamin E, vitamin C, and beta-carotene. Many advocates of antioxidant vitamins recommend a cocktail of all three.

Antioxidants stabilize free radicals, which are unstable forms of oxygen. Oxygen is utilized during metabolism to change carbohydrates and fats into energy. During this process, oxygen is converted into stable forms of water and carbon dioxide, but some oxygen (i.e., free radicals) ends up in an unstable form, with a normal proton nucleus but a single unpaired electron. The unpaired electron seeks to steal a second electron from a stable molecule, and in so doing, it damages proteins and lipids, which likely contribute to heart disease, cancer, and other diseases. This chain reaction among unpaired electrons continues until antioxidants help stabilize the free radicals so they will not be as reactive.

Antioxidants are found in food, especially fruits and vegetables. As mentioned, though, few Americans get adequate servings of fruits and vegetables in their daily diets. Thus there are nutritionists who recommend the *antioxidant cocktail* (Cooper, 1994; *University of California, Berkeley Wellness Letter*, 1995). The typical cocktail guidelines range from 250 to 1,000 mg of vitamin C (no more than 500 mg at one time); 200 to 800 IU of vitamin E; and 10,000 to 25,000 IU of beta-carotene.

On the basis of more recent research, the editorial board of the *University of California, Berkeley Wellness Letter* modified their earlier cocktail recommendation and suggested that the beta-carotene be obtained from natural food sources rather than through dietary supplements. This can be accomplished through the consumption of one medium raw carrot, which contains 20,000 IU of beta-carotene. Several well-designed studies have found that beta-carotene supplements offer no protection against cardiovascular disease, and two studies even found an increased risk of lung cancer in smokers who took the supplements ("Beta Carotene Pills," 1997).

However, a modified version of the original cocktail—400 mg of vitamin E, 500 mg of vitamin C, but only 15 mg of beta-carotene—plus 80 mg of zinc (and 2 mg of copper to compensate for depletion caused by zinc) provided the first effective treatment for the leading cause of vision loss among older adults—macular degeneration. Among persons

with macular degeneration who have not yet lost the central portion of their vision from the disease, the cocktail reduced their risk of vision loss by 20% in one study (Jampol et al., 2001) and by 35% in another (van Leeuwen et al., 2005).

HERBS

The medicinal benefits of plants are undeniable. Herbs are the basis for aspirin, morphine, digitalis, and other medicines. Most of the millions of dollars that consumers spend on herbal remedies do not produce effective outcomes, however, and a not insignificant number create health risks. Even among those products that appear to be helpful, the consistency of ingredients is unregulated and uncertain.

The regulation of herbs in Europe, where they are treated almost like drugs, sharply contrasts with America. In Europe, herbal labels warn people with diseases or conditions that might leave them susceptible to bad outcomes. Germany's Commission E of the Federal Department of Health has tested hundreds of herbs, approving those with absolute proof of safety and some proof of efficacy (though nowhere near the research standard for efficacy in the United States). These clearly labeled herbal medicines outsell prescription drugs in most European countries.

In contrast, Americans can access herbs over the counter, but they must rely on books for safety and efficacy information, such as *Tyler's Honest Herbal* (Tyler, 1999)—or they need to contact the nonprofit educational and research organization the American Botanical Council at http://www.herbalgram.org; 512-926-4900.

Ginkgo Biloba

Ginkgo biloba is the best studied and most popular herb in Europe. It is also the most popular herb used by older adults in the United States ("Herbal Hype," 2000) and is believed to be a memory enhancer. Numerous well-controlled studies show that an extract from the leaves of the ginkgo biloba tree dilates blood vessels and can improve blood flow in the brain and the extremities.

A placebo-controlled, double-blind, randomized trial in the United States reported that ginkgo biloba is safe and appears capable of stabilizing, and in some cases improving, the cognitive performance and the social functioning of demented patients for 6 months to 1 year (LeBars et al., 1997). This study, however, was limited by a high dropout rate and small differences between treatment and control groups. A team of Dutch researchers employed the same ginkgo preparation as did the U.S.

study and did not find significant differences between ginkgo recipients and placebo recipients (van Dongen et al., 2000). Although both trials appeared to be methodologically sound, the Dutch trial had a lower dropout rate.

Another randomized, controlled trial with 230 people over age 60 with no signs of memory impairment found that the ginkgo biloba supplement worked no better than a placebo on learning, memory, attention, concentration, naming, and verbal fluency outcomes (Solomon et al., 2002). Despite the absence of well-controlled studies to support the manufacturer's claim that ginkgo biloba improves memory and related cognitive function, sales have steadily increased throughout the world.

The Other Gs

In addition to ginkgo biloba, there are other popular herbs that begin with the letter G—ginseng, garlic, and ginger—that are anticoagulants and can increase the risk of bleeding problems, especially when taken with aspirin, warfarin (Coumadin), and other over-the-counter and prescription blood-thinning medications

Ginseng products are used for energy boosters and to cure a wide range of ills. The few well-designed studies of ginseng do not bear out the claims that it boosts energy (Engels & Wirth, 1997) or enhances psychological well-being (Cardinal & Engels, 2001) when compared with a placebo control group. Another problem is that authentic ginseng in standardized doses is difficult to find. *Consumer Reports* tested 10 ginseng products and found that one contained almost none of the active ingredient and that the remainder varied by 1,000%.

The typical claim for garlic is that it lowers cholesterol level and improves cardiovascular health. A panel of experts reviewed 1,800 studies on the potential health benefits of garlic and found little evidence that it lowers cholesterol, blood pressure, or blood sugar or that it prevents heart attacks, cancer, or blood clots ("Garlic: Case Unclosed," 2000). Commission E, the agency that advises the German public and health professionals on herbal medicines, no longer recommends garlic for cholesterol reduction. The small reductions in cholesterol in some of the short-term studies were no longer evident at 6 months or longer.

Ginger is typically taken to relieve nausea associated with seasickness, motion sickness, and anesthesia. Studies of ginger extract and its effect on the lowering of cholesterol have been promising but have focused on mice (Fuhrman et al., 2000). Ginger, like the other "G" herbs, can exacerbate internal bleeding.

St. John's Wort

St. John's wort is a weed native to the western United States and parts of Europe. This weed is named for St. John the Baptist, whose birthday is celebrated on June 24, about the time the plant puts forth its yellow blooms.

St. John's wort is the second most popular herb (after ginkgo biloba) in the United States but is the most popular antidepressant in Germany, where 66 million daily doses of the herb were prescribed in 1994 and where it outsold Prozac four to one.

St. John's wort was not effective in the treatment of moderate or severe depression in two separate studies (Hypericum Depression Trial Study Group, 2002; Shelton et al., 2001), but there was evidence that it was effective with milder depression in comparison to a prescription antidepressant (Philipp et al., 1999; Woelk et al., 2000). The studies of milder depression, however, have been criticized for the lack of rigor in their study design (Kupfer & Frank, 2002; Spira, 2001).

Prozac costs, on average, $80 a month, and a regimen of St. John's wort costs about $10 a month. Researchers warn, however, that the German studies supporting the efficacy of St. John's wort involved small numbers of patients, the trials were brief, the diagnosis of depression was not standardized, and the potency and dosages were varied.

St. John's wort can interfere with drugs for depression, cancer, heart disease, asthma, and AIDS as well as with antibiotics. Clinicians warn about the adverse effects from stopping prescribed antidepressants on one's own or taking St. John's wort while taking prescription antidepressants like Prozac. Older adults are particularly susceptible to combining the herb with prescription antidepressants and are likely to experience dizziness, confusion, headaches, and anxiety.

Finally, several organizations have analyzed dozens of brands of St. John's wort and found serious deficiencies in a majority of the products ("St. John's Worts and All," 2000).

Saw Palmetto

Extracts of the berries of saw palmetto, a small palm tree native to the southeastern United States, are used widely to improve urinary flow in men with noncancerous enlarged prostate or benign prostatic hypertrophy (BPH). A review of 18 randomized, controlled trials examining saw palmetto extracts for the treatment of BPH was generally positive (Wilt et al., 1998). The U.S. Pharmacopeia (USP), a quasi-governmental agency that sets manufacturing standards for drugs and advises health professionals, reported in April 2000 that there is moderate evidence of effectiveness for saw palmetto in men with BPH (Schardt, 2000b).

In contradiction to these findings, an exceptionally well designed government study found that men randomly assigned to a saw palmetto–taking group did not differ in symptoms, prostate size, urinary flow, or quality of life from placebo takers (Bent et al., 2006). This study lasted 1 year and was carefully blinded—the placebo had a similarly strong taste and smell as those found in saw palmetto, perhaps a weakness in blinding in prior studies. The study also used an extract recommended by alternative medicine experts. Nonetheless, a follow-up study is planned using higher doses, in case that was a factor in the nonsignificant findings.

The potential market for saw palmetto extracts is huge, with half of all men over the age of 50 having enlarged prostates. Moreover, prescription prostate drugs have substantial side effects. Saw palmetto is definitely not a substitute for conventional medical treatment. In fact, it does not actually shrink the prostate, but may relieve the symptoms of enlargement, such as the frequent urge to urinate. Saw palmetto is not effective when the dried berry or extract is made into a tea.

Echinacea

Extracts of the plant echinacea, a purple coneflower, are widely used in the United States and some European countries for the treatment or prevention of common colds (upper respiratory tract infections). A review of 16 randomized and quasi-randomized trials with 3,396 participants suggested that a few echinacea preparations may be better than placebo (Melchart et al., 2000). Subsequent studies, however, have not been supportive of this herb. Compared with a placebo, echinacea provided no detectable benefit in more rigorous randomized trials (Barrett et al., 2002; Sperber et al., 2004; Turner et al., 2005). Despite a growing list of negative clinical studies, echinacea retains its popularity.

Black Cohosh and Other Herbs for Menopausal Symptoms

Since the publication of the results of the Women's Health Initiative on the risks of hormone replacement therapy, many women have sought alternatives for the treatment of menopausal symptoms. As noted by one reviewer, though, dietary supplements for the relief of menopausal symptoms receive little scientific support for their efficacy, despite their popularity (Albertazzi, 2006).

Nonetheless, studies continue in interesting new ways in an attempt to find relief from menopausal symptoms. Pairing up two commonly used herbal medicines, black cohosh and St. John's wort, led to improvement in menopausal symptoms in one study that was similar to hormone replacement therapy (Uebelhack et al., 2006). Most studies, though,

report that black cohosh, soy supplements, ginkgo biloba, ginseng, St. John's wort, and combination herbal remedies are no more effective than placebos at alleviating symptoms, though they all can be perceived to be effective in up to 40% of women. Not surprisingly, two-thirds of current users of these supplements believe they are effective in relieving symptoms, while 70% of former users believe they did not help (Ma et al., 2006).

In the general absence of support for dietary supplements, women who are no longer willing to take hormone replacements may want to consider exercise, relaxation techniques, sleep hygiene, and nutritional improvements. The side effect of these interventions is good health, and additional money does not have to be spent.

For those who persist in using black cohosh and other supplements, two caveats: (a) One study examined 11 black cohosh products in stores and reported that 3 contained no black cohosh at all, and most of the remaining products substituted cheaper versions of the herb (Jiang et al., 2006); and (b) only about half of the women using dietary supplements for alleviation of menopausal symptoms tell their doctors, despite the fact that some of these products have adverse interactions with prescribed medications (Ma et al., 2006).

HORMONE SUPPLEMENTS

Growth Hormone

Growth hormone is a synthetic version of a hormone produced by the pituitary gland. Growth hormone levels begin declining by age 30, along with the body's muscle mass. By age 70, hormone levels are only 25% of the peak reached by most people between the ages of 18 and 30. Injecting growth hormone appears to boost lean body mass and improve physical function.

This hormone has been promoted as an anti-aging remedy that improves strength, energy, and immunity and as a treatment for heart disease, cancer, impotence, and Alzheimer's disease. Although there is preliminary evidence for these claims, there is even more evidence that this hormone supplement can lead to carpal tunnel syndrome, edema, joint and muscle pain, high blood pressure, congestive heart failure, tumor growth, and worsen the effects of arthritis and diabetes. Two studies have associated growth hormone with increased mortality rates (Demling, 1999; Maison et al., 1998).

Growth hormone intervention does not yet translate into improved function for older adults, and the risk of adverse effects is substantial (Cassel, 2002). Researchers concluded that the participation of older

persons in this therapy should be confined to controlled studies (Blackman et al., 2002). Moreover, buying pills or getting shots that can cost up to $15,000 a year and are not covered by insurance is a poor financial investment (Boling, 2000).

Nonetheless, there is a strong and growing black market demand for human growth hormone (HGH), both for older and younger persons. For the former the anti-aging movement and, in particular, the American Academy of Anti-Aging Medicine touts HGH as a way to stop or reverse the aging process. Its appeal has been particularly strong among people aged 40–60. Perhaps the lucky ones are only wasting their money. A recent analysis of products for oral use that claim to contain or release HGH done by ConsumerLab.com reports that only a miniscule amount of this substance can be found in these supplements sold at health food stores or on the Internet.

For young athletes the appeal of HGH was revealed in 2006 when Arizona Diamondbacks pitcher Jason Grimsely was caught using it, and he disclosed that many other major league baseball players were using it as well. The ballplayers were acquiring HGH on the black market, and it was considerably more potent than the brands available to the average consumer through commercial outlets. Baseball's drug testing for steroids began in 2003, but it did not include an effective test for detecting HGH.

On a related note, DHEA (Dehydroepiandrosterone) or testosterone therapy to restore vitality in aging men has also been disappointing (Nair et al., 2006). Testosterone therapy appears to be beneficial only to those with an original deficit in the hormone, regardless of age (Snyder, 2001). From the perspective of the young athlete, however, testosterone is believed to be a performance booster. The short-lived winner of the 2006 Tour de France Floyd Landis tested positive for a high level of a synthetic testosterone that could not have been naturally produced.

Supplemental testosterone replacement may be as risky for men as HRT (Hormone Replacement Therapy) has been shown to be in women (see chapter 3, Clinical Preventive Services). The National Institute on Aging formed a task force to evaluate the benefits and risks of testosterone therapy (for more information, go to http://www.nia.hih.gov). There have been concerns that this therapy increases the risk for stroke and prostate cancer (Rhoden & Morgentaler, 2004).

Melatonin

Melatonin is a hormone produced in the brain by the pineal gland, and it is believed to set the body's sleep cycle. It became the first best-selling hormone supplement, with 20 million new melatonin users in 1995 in the United States. Adults also use melatonin to reduce the effects of jet lag.

These uses of melatonin have not generated much research support. Scientists are not convinced that there is an age-related decline in melatonin levels, nor that sleep problems typical of older people occur because of this hormone (J. Duffy et al., 2002). Melatonin might not be an effective jet lag antidote either. Traveling physicians randomly assigned to a melatonin treatment group or a placebo control group did not report differences in jet lag symptoms after a trip from Norway to New York (Spitzer et al., 1999).

A meta-analysis reviewed 25 controlled trials that tested melatonin against placebos for various kinds of sleep disorders. The review did not provide much support for the use of melatonin for sleep disorders (Buscemi et al., 2006).

For free fact sheets on melatonin, DHEA, human growth hormone, estrogen, and testosterone, call the National Institute on Aging at 800-222-2225.

OTHER DIETARY SUPPLEMENTS

Glucosamine and Chondroitin

Glucosamine and chondroitin in the human body are used to make cartilage and were touted as a way to reverse the effects of arthritis in the best-selling book *The Arthritis Cure* (Theodosakis, 1997). In supplement form these compounds come from crab shells, cow tracheae, and shark cartilage and appear to ease arthritic aches and slow the loss of cartilage.

In one study, persons with mild to moderate knee arthritis who took 1,500 mg of purified, standardized glucosamine once a day for 3 years had 20% to 25% less pain and disability than those taking a placebo pill. Also, X-ray examinations showed that arthritis progressed slowly or not at all in the treatment group, while the placebo group continued to lose cartilage at the expected rate (Reginster et al., 2001).

There is also evidence to suggest that chondroitin is effective in the treatment of osteoarthritis (Leeb et al., 2000; Mazieres et al., 2001). In fact, a meta-analysis of 15 clinical trials of glucoasmine and chontroitin found a moderate treatment effect for glucosamine and a large effect for chondroitin (McAlindon et al., 2000).

Chondroitin, however, is a more expensive supplement, and it is difficult to make. Twelve of 14 glucosamine samples had at least 90% of the ingredient listed on the label, but only 5 of 32 chondroitin samples contained that amount (Schardt, 2000a).

In a long-awaited, multicenter, NIH-supported trial, researchers examined the dietary supplements glucosamine (1,500 mg) and chondroitin (1,200 mg) in 1,583 patients with knee arthritis. Sixty percent of the patients who received the placebo reported at least a 20% reduction in

pain, compared to 65% of patients taking one or the other supplement, or both together (Clegg et al., 2006). The difference was not statistically significant. Only Celebrex (which doubles the risk of heart attack and was taken off the market in 2004), which led to pain relief in 70% of patients, was significantly different from the placebo.

However, when researchers examined people with moderate to severe knee pain (eliminating those with mild pain), 79% taking the supplement combination reported pain relief, a significantly higher percentage than those taking a placebo (54%) or Celebrex (69%). Subgroup analysis can be notoriously unreliable, though, and often not confirmed in follow-up studies.

In 2005, there were worldwide sales of $1.7 billion for glucosamine and chondroitin, half of which was spent in the United States. These supplements typically cost $30–50 a month.

Nutritional Drinks

Ensure, Sustacal, Nutra Start, and Boost are liquid meal supplements touted to increase energy. The supplements were designed for elderly persons who have debilitating health conditions that make it difficult for them to eat or keep their food down. Advertisers are also promoting the products to baby boomers and the young-old who are still in good health but are seeking more vitality, for whom these supplements may be expensive and ineffective. Sometimes the nutrients in these supplements are not fully absorbed by the body and provide only one-third of the calories (about 240 vs. 750) of a meal if used as a substitute.

There are also many protein drinks on the market, some advertised as energy boosters and others as meal replacements. These drinks are two-thirds protein and are useful for the few adults who have a protein deficiency. But they lack some of the vitamins, minerals, fiber, phytonutrients, fat, and carbohydrates found in whole foods. Protein bars are likely to be less healthy than the drinks as they tend to be high in saturated fat. On the basis of tests by ConsumerLab.com, 60% of 30 protein bar products tested failed to meet their labeling claims.

CONSUMERLAB.COM AND DIETARY SUPPLEMENT VERIFICATION PROGRAM

Unlike drugs, dietary supplements are not required to undergo premarket safety testing, which means a brand may not contain the ingredients it claims on the label. In response to this situation, ConsumerLab.com subjects different brands of dietary supplements to laboratory analysis and posts the

results on the Internet. Results appear every 4–6 weeks, and it is not uncommon when 25% or more of products fail to contain the labeled ingredients in the amounts described or fail related tests of disintegration and impurity levels. Two studies, for example, reported that 25% of ginkgo biloba product labels were inaccurate, as were 37% of saw palmetto products.

Typically, when a product fails to contain the designated quantity of labeled ingredients, the amount of ingredients is inadequate—or sometimes even nonexistent. However, a recent review of B vitamin supplements (complexes and single B vitamins) found that 9 of 21 products *exceeded* the established tolerable upper intake levels for adults, above which there is increased risk of side effects with regular use.

The ConsumerLab.com Web site has its detractors. It does not publish the names of failing products. It samples only one batch of a product, and herbal products are notorious for being inconsistent from batch to batch because of the nature of the plants and the processing technique. It does not test for bioavailability, that is, whether the substance will be absorbed and actually utilized by the body. And finally, even if the label is accurate, does the product have any benefit?

The USP launched a Dietary Supplement Verification Program in 2002. The USP mark, which states "Dietary Supplement Verified," refers to the presence, quantity, and purity of a supplement's ingredient. If a bottle of ginseng pills bears the USP seal, it means that the product contains the amount of ginseng listed on the label and that the ingredient is free from contamination.

The USP seal does not verify safety or possible benefits. The bottle of ginseng pills that bears the USP seal therefore does not verify that ginseng provides additional energy or that it is safe. Neither the USP seal nor the accompanying explanation make that distinction clear.

These steps are at least in the right direction, and other organizations, like Consumers Union, are joining in. Unfortunately, the overall efforts to regulate dietary supplements remain woefully inadequate, and caveat emptor—buyer beware—is an inadequate descriptor of the state of events in dietary supplements. Perhaps the situation is best described by the *University of California, Berkeley Wellness Letter* ("Is This the Right Way," 2000): "Not since the early 1900s, when unregulated patent medicines were sold from circus wagons, has there been such a free-for-all."

NUTRACEUTICALS OR FUNCTIONAL FOODS AND DRINKS

Americans have been eating fortified foods since 1924, when manufacturers added iodine to salt to prevent goiters. Since then, we have had

vitamin D–fortified milk, calcium-fortified orange juice, flour enriched with B vitamins and iron, and other useful products.

Nutraceuticals represent a new pathway in the field of functional foods: exploiting nutritionally weak foods and marketing them as health products. Waffles with refined flour and orange drinks with sugar and water are now calcium fortified. Corn chips have kava kava to promote relaxation. Donuts are vitamin fortified and portrayed as healthy. A chocolate chip cookie is laced with 500 mg of calcium and called Calci-cookie. Tortilla chips contain St. John's wort to boost your mood. And potato rings have ginkgo biloba to increase memory and alertness. The function of most functional foods and drinks is to make a profit for the manufacturer. Sales reached $16 billion in 2000 and may triple by 2010.

Not all fortified products are soft drinks, breakfast cereals, and snack chips. Two margarines, Benecol and Take Control, are functional foods with probable benefit. These products, as part of a low-fat diet, can reduce the LDL cholesterol level up to 10%. The FDA allows the manufacturers of these products to claim that these margarines may reduce the risk of heart disease. It is unclear, however, whether there is an unhealthy effect on the body from the unprocessed oils that are also in these products.

Some foods are merely getting image makeovers. Ketchup is now more than a mere condiment, it is the richest dietary source of lycopene, which may ward off prostate cancer (though the evidence is still tentative). So squirt a little ketchup on a super-sized order of French fries and ward off cancer. Milk (calcium), tea (flavonoids), grapes (phenols), carrots (beta-carotene), broccoli (sulforaphane), and beef (linoleic acid) are also undergoing image makeovers (Haney, 1999).

Some products may turn out to be useful, but manufacturers are unwilling to wait for the research to be completed. As previously mentioned, glucosamine is a dietary supplement that has promise in the area of reducing pain from arthritis. Coca-Cola formed a partnership with Procter and Gamble and has been testing a drink called Elations that has 1,500 mg of glucosamine and 1,200 mg of chondroitin added to it. Rather than wait for more definitive research on these supplements, however, the manufacturers decided to get an edge on the competition. The product will soon go nationwide, along with its motto: the drink that brings "Joy for Joints."

The good news is that the herbal supplements added to most functional foods are so miniscule that they are quite safe. The bad news is that you are wasting your money. The additional bad news is that junk foods and drinks with a supplement added are still junk. And the bad news on top of that is that manufacturers could start adding unsafe dosages of herbs without premarket safety testing. Then it will be up to a sufficient number of sick consumers to demonstrate that it was the functional food and not some other factor that caused their health problems.

QUESTIONS FOR DISCUSSION

1. Do you think CAM usage in America is more complementary or alternative? Why?
2. Which category of CAM intrigues you the most? Why?
3. Read the descriptions of diaphragmatic breathing, progressive muscle relaxation, visualization, and meditation or relaxation response at the beginning of this chapter. Supplement your reading on one of these techniques. Then try leading one other person, or a small group, if it is available to you. How did it go?
4. Can you imagine any medical problems that you might acquire in the future for which you would consider paying for the services of a licensed naturopath? Why?
5. An older client asks you what dietary supplements you are taking and whether you recommend taking vitamin E. As a health professional, how do you respond to each of these requests for information?
6. St. John's wort, ginkgo biloba, and ginseng are among the most widely used herbs. What cautions would you recommend with these supplements?
7. If you are taking a dietary supplement, are you convinced of its efficacy? Or are you taking it "just in case"? If you are not taking a dietary supplement, have you given thought to trying one?
8. If you are doing a CAM activity, are you convinced of its efficacy? Or are you doing it for other reasons? If you are not doing a CAM activity, have you thought about trying one?
9. What CAM services or dietary supplements would you like to see generally covered by health insurance? Why?
10. How would you change the Dietary Supplement Health and Education Act so that it maintains as much consumer freedom as possible, while protecting the safety of the public?
11. Because many dietary supplements are naturally occurring substances and cannot be patented, how do you provide incentives to individual manufacturers in the United States to conduct more research?
12. Do you find the author of this book too skeptical about CAM, or not skeptical enough?
13. Examine one other topic in this chapter that you found interesting and has not been explored when answering the previous questions. Why did you find this interesting?

CHAPTER NINE

Selected Health Education Topics

Health professionals and older adults need to be informed about a great many health education topics. In this chapter we will explore a few of these topics: smoking, alcohol, medication usage, injury prevention (fall prevention and motor vehicle and pedestrian safety), and sleep.

SMOKING

Although most health educators proclaim the leading causes of death to be heart disease, cancer, and stroke, others view these diseases as pathological diagnoses rather than as causes (McGinnis, 1992). The latter group cites the leading causes of death as smoking, diet, inactivity, and alcohol. From the perspective of these analysts the number one cause of death is smoking tobacco, and the Americans who are most likely to die as a result of smoking are over the age of 60.

Prevalence

The prevalence of smoking in the United States declined between 1965 and 1990. In the mid-1960s, 44% of American adults smoked; in 1987, 29% smoked; and in 1990, 25.5% smoked (Fiore, 1992). Over the next decade, smoking percentage leveled off in the United States to about 25% of the population through 2000. It then started to decrease again, to 21% in 2005.

The percentage of older adults who smoke (9% in 2005) is less than half that of the adult population in general (21%). The lower rate among older adults is linked to a higher mortality rate among smokers. Smokers

risk shortening their lives up to 13 years. Educational level is also an important influence on smoking status. People without a high school diploma are more than twice as likely to smoke than those with a college degree (32% vs. 13%), and those with a graduate degree have the lowest smoking rate of all (10%).

Tobacco is a worldwide problem, and unlike in the United States, it has been steadily increasing not only over the past half century, but over the past decade as well. An estimated 1.25 billion people currently smoke cigarettes, and more than half of them will die from the habit.

The future also looks bleak. The second edition of the *Tobacco Atlas* came out in 2006 and predicted that tobacco alone will kill a billion people in the 21st century, 10 times the toll it took in the 20th century.

Smoking is a leading cause of premature death in all developed countries (Peto et al., 1992), but it is growing even faster in developing countries. The *Tobacco Atlas* estimates that 70% of the deaths from cigarette smoking in the coming century will occur in developing countries.

Associated Diseases

In May 2004, a 941-page surgeon general's report was produced by a team of 20 scientists at the Centers for Disease Control and Prevention, based on 1,600 research articles. This surgeon general's report, entitled *The Health Consequences of Smoking*, can be accessed at http://www.cdc.gov/tobacco/sgr/sgr_2004.

The panel of scientists concluded that the list of diseases linked to smoking had grown considerably and now included cancers of the lung, larynx, bladder, kidney, esophagus, cervix, pancreas, stomach, and mouth; leukemia; chronic obstructive pulmonary disease (COPD); pneumonia; other respiratory diseases; cardiovascular disease; cerebrovascular disease; osteoporosis; peptic ulcers; reproductive diseases; cataracts; periodontitis; cognitive decline; and abdominal aortic aneurysms (the U.S. Preventive Services Task Force recommended, in 2005, a one-time ultrasound screening for abdominal aortic aneurysms for all 65- to 75-year-old males who had ever smoked). Evidence is still being considered for an association between smoking and colorectal cancer, liver cancer, prostate cancer, and erectile dysfunction.

Cigarette smoke irritates and inflames lungs and air passages and produces excess mucus. Over time, these effects lead to or exacerbate a variety of lung diseases, including cancer and COPD. More deaths occur from lung cancer than from any other type of cancer, yet lung cancer is rare among those who have never smoked. Smokers with a habit of two packs or more per day have lung cancer rates about 20 times greater than those who have never smoked.

Cigarette smoking accounts for more than 60,000 of the 80,000 deaths each year that are due to COPD. Moreover, death from COPD usually is preceded by an extended period of disability due, in most cases, to chronic bronchitis or emphysema. In addition, smokers are about 3 times more vulnerable than nonsmokers to the incidence of coronary heart disease and to the risk of sudden death.

Among the estimated 440,000 people who die from smoking-related diseases each year, about 300,000 of those deaths are of people aged 65 and older.

Quit Ratio

> I phoned my dad to tell him I had stopped smoking. He called me a quitter.
>
> —Steven Pearl

> It's not that difficult to quit. I did it a thousand times.
>
> —Mark Twain

The United States has approximately 48 million smokers, and 48 million people have quit since 1976. In 1991, 34 million people wanted to quit, 17 million attempted to quit, but only 1.3 million did quit (Fiore et al., 1992). However, the quit ratio (the ratio of former smokers to those who have ever smoked) for the United States population increased from just under 30% in 1965, to 45% in 1985 (Kottke et al., 1988), to 49% in 1990 (CDC, 1992).

About 57% of smokers aged 65 and older report a desire to quit, and about 10% of them stop smoking each year. Seniors who try to quit smoking are 50% more likely to succeed than younger age groups, and their relapse rate is a very low 1%. Although it did not reach statistical significance, older participants in one study were more likely to quit smoking after receiving a serious health diagnosis (Whitson et al., 2006). Many seniors now realize that they can reduce their risk of death from heart disease to that of nonsmokers within 2 or 3 years after quitting.

Age

Older smokers have a longer personal history of unsuccessful quit attempts than do younger smokers. Nonetheless, the number of failed attempts in their past appears to be unrelated to success in quitting at a specific point in time (Cohen et al., 1990).

Older smokers, though, contend with a longer smoking history; the tendency to be thoroughly addicted due to a heavy smoking habit; the likelihood of not being exposed to the nonsmoking norms and influences

in the workplace; less knowledge than younger adults about the physical effects of smoking; and less likely to be told by their physician to quit than younger smokers (Rimer, 1988).

Two stereotypical attitudes about smokers who survive into old age are that (a) they must be resistant to the health hazards of smoking and that (b) because of their advanced age, they no longer have time to benefit from a reduction in risk by quitting. In fact, smokers who continue to smoke as older adults continue to increase their risk of morbidity and mortality. Conversely, even 65-year-old men who quit smoking gained 2 additional years of life, and 65-year-old women gained almost 4 years (D. Taylor et al., 2002). Former smokers, even late in life, can improve their physical function and overall health in comparison to those who continue smoking (LaCroix & Omenn, 1992).

Gender

The prevalence of smoking among adults in general has declined over the past 2 decades. This decline, however, has been considerably lower among females; in fact, there has been a slight rise among female smokers who are aged 65 and over. By 2000, the prevalence of older women smokers equaled that of men. The American Cancer Society predicts that women's deaths from smoking-related disease will exceed men in about 2020.

The good news for women is that a study of 17,000 smokers reported that they have a lower rate of fatal outcomes from lung cancer compared to men. The bad news is that women smokers have twice the likelihood of developing lung cancer than men (Henschke et al., 2006). They appear to have increased susceptibility to tobacco carcinogens.

Lung cancer death rates are estimated to climb rapidly about 20–30 years after a large increase in the incidence of smoking. Men began smoking in large numbers after the turn of the century, and their death rate from smoking peaked during the first half of the century. Women's rapid rise in smoking began in the 1950s, and by 1986, lung cancer had surpassed breast cancer as the leading cause of cancer death among women (Brown & Kessler, 1988).

In 1991, 45% of women who had ever smoked had quit versus 52% of men. Researchers believe that it is more difficult for women to quit smoking because they depend on cigarettes to control their weight. In fact, a nationwide survey of adults over age 35 revealed that women who gave up smoking gained an average of 11 pounds, and men 10 pounds (Flegal et al., 1995). Although from a health perspective a modest weight gain is much more desirable than continued cigarette smoking, it is a difficult trade-off for many female American

smokers to make because of the perceived stigma associated with additional weight. One study, though, reported that women who exercise while trying to quit smoking are twice as likely to quit—and only gain half as much weight—as those who did not exercise (Marcus et al., 1999).

Physician, Nurse, and Telephone Interventions

About 70% of all adult smokers visit a physician each year, with almost 80% of the heavy smokers claiming that they would stop smoking if their doctors urged them to do so (American Cancer Society, 1994). Only half of all smokers, however, report having heard an antitobacco admonition from their physicians (Morain, 1994). One problem is with the training of physicians: A majority of U.S. medical school graduates are not adequately trained to treat tobacco dependence (Ferry et al., 1999).

Even when physicians give patients a prescription for nicotine replacement therapy, the physicians provide very low levels of any form of smoking cessation assistance beyond how to use the replacement therapy (Solberg et al., 2005). Less than one-fourth of patients surveyed (n = 1,035) reported that their physicians followed up with their smoking cessation therapy.

When client readiness is combined with the authority of the physician, even *brief* smoking cessation counseling by primary care physicians—especially when reinforced by follow-up visits or telephone calls during the first 4–8 weeks—is effective in getting clients to quit (Davis, 1988; Kottke et al., 1988). An attempt to quit is at least twice as likely to occur among smokers who receive nonsmoking advice from their physicians compared with those who are not advised to quit (Glynn, 1990; Milch et al., 2004).

Physicians either overestimate the percentage of smoking patients that they counsel to stop smoking on a regular basis, or their patients do not hear them (NCHS, 1988). In one study, only 40% of smokers reported that they received counseling from a physician, although the great majority of physicians reported that they counsel smokers on a regular basis (Horton, 1986). Other studies show that most physicians report that they routinely inquire about patients' smoking habits, but only 25% (Taylor et al., 1982) to 50% (Marcus & Crane, 1987) of smokers say their physicians have told them to quit.

Physicians are more likely to communicate effectively with smoking clients if they are well prepared for the task (Cohen et al., 1989). One simple but effective smoking cessation intervention consists of asking whether patients smoke, motivating them to quit, setting a date, providing a written reminder or prescription, and using either a nicotine

patch or gum as a supplement. These principles have been incorporated into the Doctors Helping Smokers (DHS) system, which was developed in 1989 by Minnesota physicians Thomas Kottke, MD, a cardiologist, and Leif Solberg, MD, a family physician. The system was implemented in 31 Minnesota clinics and reimbursed through Blue Plus, a health maintenance organization.

DHS is based on the 4 As—in 2000, expanded to 5 As: *ask* if patients smoke; *advise* them that smoking is harmful; *assess* their readiness; *assist* them by providing self-help guides, education, and counseling; and *arrange* for a follow-up visit, mailing, or telephone call as the proposed quit date nears. Nurses and receptionists assist the physician in counseling and follow-up duties. In addition, follow-up audits allow the team to devise ways to improve the system.

Nursing interventions for smoking cessation appear to be effective, based on a meta-analysis of 16 studies. There were significant increases in patients' quitting rates due to nursing intervention, when compared to a control group or usual care (Rice & Stead, 2002). Moreover, there was no evidence that interventions classified as intensive had a larger effect on patients than less intensive ones, such as the offering of brief advice. If the latter finding even partially holds up, it could make it less challenging to incorporate smoking cessation interventions by nurses as part of the standard practice in hospitals, clinics, and other settings.

Since the nation's 3 million nurses represent the largest group of clinicians in the country, and they can be effective in helping people stop smoking, the government has developed a free guide entitled *Helping Smokers Quit: A Guide for Nurses*. It can be accessed through http://www.ahrq.gov/about/nursing/hlpsmksqt.htm.

Telephone counseling services that offer smoking cessation counseling, that is, quitlines, appear to be effective. More than 3,000 smokers were given self-help materials and randomized to a treatment group that received up to seven telephone counseling sessions or to a control group that did not. Abstinence rates were doubled over a 1-year period for those who received the counseling (Zhu et al., 2002). Thirty-three states have established quitlines for smokers, including 10 state quitlines that the American Cancer Society coordinates from Austin, Texas.

It should be noted that more than 90% of successful quitters do not participate in organized smoking cessation programs. Nevertheless, some evidence suggests that those who smoke more heavily and more addicted smokers may be the best candidates for formal smoking cessation programs (Fiore et al., 1990). If every primary care provider offered a smoking cessation intervention to smokers, it is estimated that an additional

1 million would quit each year (Hypertension Detection and Follow-Up Program Cooperative Group, 1988).

The Patch

It is estimated that more than 80% of smokers relapse after their first attempt to quit (Zajac, 1992). Withdrawal symptoms, such as irritability, anxiety, restlessness, and a craving for nicotine, are the major cause of relapse. Nicotine is the psychoactive drug that is primarily responsible for the addictive nature of tobacco use.

The nicotine transdermal delivery system, commonly referred to as the nicotine patch, was developed to combat withdrawal symptoms. In late 1991, the Food and Drug Administration (FDA) approved three nicotine patches: Nicoderm, Habitrol, and ProStep. Nicoderm has been the best-selling patch and employs a weaning process that releases 21 mg of nicotine a day, then drops to 14 mg, followed by 7 mg over an 8- or 10-week period.

In 1996, Nicoderm became available over the counter as NicoDerm CQ and soon thereafter increased its sales to about one-half of the smoking cessation aids market. Nicorette gum—which was Food and Drug Administration approved in 1984 and was the first nioctone replacement aid—controlled 40% of the market, followed by Nicotrol, another patch, at 10%.

Both the patch and gum manufacturers highly recommend that their aids be used as a component of a behavior modification and support group program. These educational programs typically include self-monitoring of daily living habits to determine which habits need to be changed to support a lifestyle without cigarette use. Other program components usually include a combination of breathing and other stress management exercises, nutrition education, assertiveness training, exercise, peer support, and tips for relapse prevention.

After reviewing all placebo-controlled, double-blind nicotine patch studies with at least 6 months follow-up, Fiore and colleagues (1992) concluded that nicotine patches produced 6-month abstinence rates of 22% to 42%—higher percentages representing patches combined with education and support—while placebo patches produced quit rates of 5% to 28%. Thus education and support, in addition to the nicotine patches, appear to be significant factors in the long-term success of those who stop smoking. One study reported that 75% of nicotine patch users relapsed over an 8-year period (Yudkin et al., 2003). Many of these nicotine replacement users who relapsed used their replacement aid for too short a time and would probably have benefited from extended education and social support.

In addition to the nicotine patches and nicotine gum, there are over-the-counter nicotine-containing lozenges, prescription inhalers, nasal sprays, and tablets—Zyban, initially marketed as an antidepressant. In 2006, a nicotine-free antismoking pill, Chantix, was FDA approved after 22% remained smoke-free after 1 year of a clinical trial (Klesges et al., 2006). Chantix is taken twice a day and has the effect of making smoking unpleasant while reducing withdrawal symptoms. Most stop-smoking drugs like Chantix, however, fare better in clinical trials than in the real world, where the general population is less healthy and less able to remain on a strict regimen than people in drug trials.

Combining Interventions

The most effective behavior management strategy for smoking cessation employs a combination of approaches (USPSTF, 1996). One study reported that a patch followed by a nasal spray was more effective than a patch alone (Blondal et al., 1999), and the antidepressant Zyban combined with a patch was more effective than a patch alone (Jorenby et al., 1999). Given the risk of nicotine overdosing, the combined strategies require a physician's supervision and careful monitoring of blood pressure.

Combining a nicotine replacement aid with a behavioral strategy is a frequent intervention. The Medicare Stop Smoking Program, sponsored by the Centers for Medicare & Medicaid Services (CMS), was a demonstration project that compared reimbursement for provider counseling alone; provider counseling and nicotine replacement therapy; a telephone quitline and nicotine replacement therapy; and a smoking cessation information control group. Results of the study are still being analyzed but have contributed to the CMS decision in 2006 to cover tobacco-counseling services under Medicare (described later).

A health contract is an example of a behavioral strategy that can incorporate several techniques such as social support, contingency reinforcement, record keeping, problem-solving skills, and the involvement of a physician who prescribes a patch and signs the health contract.

Another popular behavioral strategy is to have clients prepare ahead for smoking cessation. Clients dispose of extra cigarettes gradually and remove paraphernalia (ashtrays, lighters) from the home; self-monitor how much they smoke, when, and in which mood states and eliminate the cigarettes that are easiest to omit; announce a quit date to their physician, family members, and friends; stock up on cigarette substitutes (celery and carrot sticks); spend less time with smokers; and avoid smoking situations.

Other behavioral strategies include the following: (a) solicit a wide range of social support among your physician, spouse, friends, and support group; (b) employ response substitution—instead of smoking after dinner, quickly clean your mouth by brushing your teeth, take a shower (where smoking will be difficult at best), and substitute a celery stalk or carrot stick for a cigarette; and (c) activate a stress management routine. Perhaps implement a daily deep-breathing regimen or progressive muscle relaxation.

Regardless of the combination of techniques utilized, it is wise to acknowledge the likelihood of relapses and not to exaggerate or overgeneralize the implications of a failure or associate it with future attempts. Estimates of relapses within a year after stopping vary from 50% to 80% (Brownell et al., 1986). Techniques that were successful in initially helping an individual quit should be reapplied following a relapse. Because it is unusual for smokers to achieve success the first time they attempt to quit, they should be urged to consider their failed attempts as learning experiences and be encouraged to try again. Clients who are not ready to quit smoking can be moved toward greater readiness (Glynn, 1990).

Taxes

In 1988, a California state referendum increasing cigarette taxes by 25 cents per pack required that 20% of the tax money be used for smoking cessation programs, especially for an antismoking television campaign. The state of Nevada also adopted a 25 cents per pack cigarette tax but did not institute a smoking cessation campaign. The result? The reduction rate in cigarette smoking almost quadrupled in California but was not significantly affected in Nevada (*American Medical News*, 1993). The decision to quit smoking, at least in Nevada, is not made on economic grounds alone.

Since the California Tobacco Control Program was initiated in 1988, the Centers for Disease Control and Prevention reported a 14% decrease in lung cancer in that state over the following decade, compared to only 2.7% in the rest of the country ("Tough Anti-tobacco," 2000). The tobacco control program was also associated with lower rates of death from heart disease during this same time period (Fichtenberg & Glantz, 2000).

Smokers will do what it takes to minimize economic disincentives. A study of the effects of taxes on cigarette consumption from 1955 through 1994 reported that state taxes are less effective than federal taxes because smokers will bootleg cigarettes across state lines to avoid state taxes (Meier & Licari, 1997). Children, however, have had fewer options in this regard. California raised its excise tax on cigarettes by

50 cents on January 1, 1999, and sales went down 29% over the next 6 months—particularly among children—compared with the previous year ("California Cigarette Sales," 1999).

In New York City, where the price of cigarettes escalated to $8 a pack and to $65 a carton in 2006, just 11% of public high school students smoked, compared to 23% in 1999. The biggest decline in youth smoking occurred among African American and Hispanic students, who were considerably poorer than White students, of whom 29% smoked.

Many states struggling with budget deficits raised their cigarette taxes substantially, mostly for the purpose of raising revenue. As a consequence of the steep price increases, smokers became a lot more creative at dodging them. Popular strategies included buying on American Indian reservations, in low-tax states like Virginia and Kentucky, from illegal sources, and over the Internet. To fight the avoidance of state taxes through online cigarette purchases, states have attempted to outlaw these purchases, or they have obtained the customer lists of Internet cigarette vendors and sent tax bills to residents who purchased online. The black market in contraband cigarettes appeared to be a lot more robust than it was in 1999 after the 50 cent cigarette tax increase in California resulted in only 5% of cigarette buyers turning to low-tax or no-tax sources.

Secondhand Smoke and Attacking the Tobacco Industry

In January 1993, an Environmental Protection Agency (EPA) report that was widely publicized in the media declared that passive tobacco smoke is a human carcinogen responsible for 3,000 lung cancer deaths annually among U.S. *nonsmokers* and that there is an increased risk of cancer, lower respiratory tract infection, and severe asthma symptoms among children. Subsequent research has also documented the link between secondhand smoke and lung cancer (Bennett et al., 1999; Kreuzer et al., 2000), heart disease (Kawachi et al., 1997), stroke (Bonita et al., 1999), and respiratory symptoms (Janson et al., 2001). Mortality is about 15% higher among nonsmokers who are exposed to smoke at home than among those not exposed (Hill et al., 2004).

With the accompanying media attention, the 1993 report contributed to the implementation of smoking restrictions in the community. Restaurants and other public places imposed restrictions in response to the fear of legal action by patrons and employees. Excise taxes on tobacco were raised to fund educational programs for the public, especially ones targeted to children and the spouses of smokers about the dangers of secondhand tobacco smoke.

About the same time, Michael T. Lewis, a personal injury lawyer from Clarksdale, Mississippi, developed a strategy for attacking the

tobacco industry on the basis of secondhand tobacco smoke and tobacco-related illnesses. Realizing that smokers as plaintiffs had had little success winning conventional lawsuits (after all, the argument goes, it is a free country to do what you want), this small-town lawyer convinced the Mississippi attorney general to sue the tobacco companies to recover money the state spent in *Medicaid bills* for cigarette-related illnesses. By April 1997, 25 states had filed copycat suits against the tobacco industry.

Also during the 1990s, FDA commissioner David Kessler, MD, became convinced that the smoking industry deliberately relied on nicotine to hook smokers and also that they intentionally marketed to minors. In 1996, in fact, daily smoking among 12th graders had reached its highest level (21.6%) since 1979. Dr. Kessler unveiled a proposal to restrict the sale and marketing of cigarettes to minors, and in 1996, President Clinton, realizing that smoking curbs on young persons would be politically viable, allowed the FDA to enforce it.

In 1998, California became the first state to extend a smoking ban to bars, casinos, and even private clubs. The main motivator was not a clamor from the public but the state's legal liability to waitstaff and bartenders who were forced to inhale secondhand smoke during the workday. After the ban took place, the respiratory health of bartenders improved dramatically with the establishment of smoke-free environments. Respiratory irritations to eyes, nose, and throat decreased from 77% to 19% among bartenders, and coughing, wheezing, shortness of breath, and phlegm symptoms decreased from 74% to 32% (Eisner et al., 1998).

Attacked on economic, legal, and political fronts, the tobacco industry, in 1998, paid a $246 billion legal settlement for the Medicaid expenses associated with smoking-related illnesses. Other features of the settlement included FDA regulation of nicotine content; advertising and labeling restrictions, especially as they related to minors; and tobacco company financial penalties if youth smoking rates did not decrease. In exchange, the tobacco industry received immunity from lawsuits for punitive damage that their products cause and a cap on other damages.

In turn, the tobacco companies raised the price of cigarettes 44% over the next 2 years and increased their marketing budget by 33% in 2000. They also shifted more attention to exporting tobacco products to overseas markets. Finally, they surreptitiously increased the addictive nicotine content of cigarettes by 10% between 1998 and 2004, according to a Massachusetts Department of Public Health Report.

In addition, only 5% of tobacco settlement money has been spent by state governments on smoking control. North Carolina spent 75% of its tobacco settlement money to provide assistance to tobacco producers, including a tobacco auction house and a video history of tobacco

cultivation. Michigan, which spends no money on tobacco prevention or cessation, spends its settlement monies on education. New York used some of its money to buy golf carts.

On June 27, 2006, the surgeon general issued a report on secondhand smoke entitled *The Health Consequences of Involuntary Exposure to Tobacco Smoke*, accessed at http://www.surgeongeneral.gov/library/secondhandsmoke. The report states that secondhand smoke is not a mere annoyance but a serious health hazard. Surgeon General Richard Carmona declared that smoking sections with the best ventilation systems are not safe and advocated for completely smoke-free buildings and public places throughout the United States.

The 670-page study reports that there is "overwhelming scientific evidence that secondhand smoke causes heart disease, lung cancer, and many other illnesses." The report is likely to accelerate an already growing movement toward statewide smoking bans in public spaces.

Smoking Bans

In 2006, New Jersey became the 11th state to impose a comprehensive ban on smoking in indoor public places like restaurants and bars. Six other states have less comprehensive public smoking bans. The smoking restrictions have been the culmination of 3 decades of conflict between the antismoking advocates and the once-powerful tobacco lobby. That same year, Westin Hotels & Resorts became the first chain of hotels to ban smoking in guest rooms and public areas.

The ban was taken one step further by the city of Calabasas, California. Their smoking ordinance prohibits smoking in all public places, indoors or outdoors. The ban includes outdoor cafes, bus stops, soccer fields, condominium pool decks, parks, and sidewalks. If you are going to smoke in your car in Calabasas, you need to close the windows if anyone is nearby. California has always been in the vanguard when it comes to ratcheting up smoking bans, beginning with a statewide ban on smoking in restaurants, workplaces, and many public venues in 1995. In 2003, smoking was prohibited on most southern California beaches and piers. In 2006, California officially declared secondhand smoke a toxic air pollutant.

Whole countries are now banning indoor smoking. Ireland began the trend in 2004, followed by Norway, New Zealand, England, Scotland, Puerto Rico, and others. In 2006, Latin Americans joined in when Uruguay banned smoking in the workplace, shopping malls, and many other public spaces. The president of Uruguay, who promoted the ban, also happened to be a practicing oncologist. In Cuba, you cannot even smoke a legendary Cuban cigar in most public places. In cigarette-friendly

France, a ban on smoking in schools, offices, and other public buildings began in 2007, to be followed in 2008 by a ban in restaurants, dance clubs, and some bars.

In China, however, the trend is going in the opposite direction. Two-thirds of Chinese men are smokers, including 60% of physicians. Smoking even takes place in hospitals, and hospital shops sell cigarettes. There are 360 million smokers in China, and thanks to China becoming a member of the World Trade Organization, Western tobacco companies are eagerly attempting to break into this lucrative market.

What is happening in China? There is a state-owned tobacco monopoly that provides 60 million jobs and 10% of national tax revenue. The official Web site of the tobacco monopoly advertises cigarettes as a miracle drug: They prevent ulcers, reduce the risk of Parkinson's disease, relieve schizophrenia, boost brain cells, speed up thinking, improve reaction time, eliminate loneliness and depression, and increase work efficiency. A 2005 survey reported that 90% of the Chinese population believes that smoking has little effect on their health or is good for them.

Bloody Mouths

When it comes to truth in advertising, American tobacco companies thought they had it bad in the mid-1960s when they had to make space on cigarette packs for a warning that cigarette smoking is a health hazard. In 2001, the Canadian government went one giant step further: Over 50% of each cigarette pack had to be adorned by a graphic warning of what those health hazards look like. Among the 16 designs they may choose from are bloody mouths in acute periodontal distress, cancerous lungs, stroke-clotted brains, and damaged hearts. Ireland, Belgium, and other countries of the European Union are considering doing the same as smokers constitute one-third of the population in Europe. Among their pictures are a grisly photograph of a man with a cancerous growth on his neck and a picture of a drooping cigarette meant to represent impotency. It remains to be seen if this strategy will be more effective than the United States' warnings on cigarette packs, which appear to have slipped out of the consciousness of most Americans.

Medicare Smoking Cessation Coverage

In 2005, Medicare covered smoking cessation counseling for beneficiaries who have tobacco-related diseases (e.g., cardiovascular, cancer, respiratory, gastrointestinal, osteoporosis, cataracts, blood clots) or are on drug regimens that are adversely affected by smoking (e.g., insulin,

hypertensive medicine, blood clots, depression). The CMS estimate that 4 million seniors fit this profile. Two quit attempts are covered per year, each consisting of up to four counseling sessions. The CMS encourage clinicians to become appropriately trained until a consensus on national credentialing emerges.

Medicare's prescription drug benefit covers smoking cessation treatments prescribed by a physician but does not cover the cost of over-the-counter nicotine patches, gum, or other products. There is also a national quitline available to smokers at 1-800-QUITNOW and a national network of smoking cessation quitlines accessed through http://www.smokefree.gov.

Additional Programs and Materials

Fresh Start is a group smoking cessation program that is offered by many local chapters of the American Cancer Society. To locate your local chapter or to obtain free publications on smoking cessation, contact the American Cancer Society, 1599 Clifton Road, Atlanta, GA 30329; 800-227-2345 (information service); http://www.cancer.org.

Two booklets, *Clearing the Air—A Guide to Quitting Smoking* and *Guide to Quit Smoking for Your Health and Your Family* (the latter available in Spanish as well), offer strategies and suggestions for quitting and staying a nonsmoker. These booklets (up to 200 copies free) are available from the Office of Cancer Communications, National Cancer Institute, Building 31, Room 10A24, Bethesda, MD 20892; 800-422-6237; http://www.cancer.gov.

Freedom From Smoking is offered by local affiliates of the American Lung Association. To locate your local chapter or to obtain manuals, audiotapes, videotapes, films, posters, and buttons, contact the American Lung Association, 1720 Broadway, New York, NY 10019-4374; 800-586-4872; http://www.lungusa.org.

The *Smoking and Health Bulletin*, a free guide entitled *Out of the Ashes: Choosing a Method to Quit Smoking*, a free bibliography on smoking and health, and materials on smoking cessation techniques are available from the Office on Smoking and Health, Park Building, Room 1-16, 5600 Fishers Lane, Rockville, MD 20857; 301-443-5287. Smoking cessation kits are available from the American Academy of Family Physicians at 800-944-0000 (www.aafp.org).

Interested in quitting? Try one of these online resources: Smoking Cessation Resources from the National Library of Medicine (http://www.americanheart.org/presenter.jhtml?identifier=3019598 as well as http://www.nlm.nih.gov/medlineplus/smokingcessation.html);

"Smoking Cessation: You Can Quit Smoking Now" (http://www.surgeongeneral.gov/tobacco); "How to Quit: Resources to Quit Smoking" (http://www.cdc.gov/tobacco/how2quit.htm); or call the toll-free New York State Smokers' Quitline at 888-609-6292.

ALCOHOL

Definition

No consensus exists among alcohol researchers and other experts regarding what constitutes moderate drinking and what constitutes alcoholism (Dufour et al., 1992). The U.S. Department of Agriculture (1990) somewhat arbitrarily defined moderate drinking as no more than two drinks a day for men and one drink a day for women, with a drink defined as approximately 12 ounces of beer, 5 ounces of wine, or 1.5 ounces of spirits.

Dufour and colleagues (1992) conclude, however, that "given the dramatic increase in the proportion of body fat with aging and the concomitant decrease in volume of total body water," a maximum of one drink a day is advised for older men.

It may be best when attempting to define alcoholism to avoid associating it with a specific number of drinks. One definition states that alcoholism is "impaired control over drinking, preoccupation with the drug alcohol, use of alcohol despite adverse consequences, and distortions in thinking, most notably denial" (Morse & Flavin, 1992).

The diagnostic criteria for alcohol dependence used in the *DSM–IV* (American Psychiatric Association, 1994) is the persistence, for 1 month or more, of three or more of the following nine criteria:

1. drinking more or over a longer period than previously
2. persistent desire or unsuccessful efforts to cut down or control use
3. considerable time spent in obtaining, drinking, or recovering from the effects of alcohol
4. intoxication or withdrawal when expected to fulfill major obligations
5. important activities given up or reduced because of drinking
6. continued use despite knowledge of having persistent or recurrent psychological or physical problems related to alcohol
7. marked tolerance
8. withdrawal symptoms
9. drinking to relieve or avoid withdrawal symptoms.

Types

About one-third of elderly alcoholics are late-onset, reactive problem drinkers. Late-onset alcoholics are likely to be the product of a life cycle crisis, such as the death of a spouse or the loss of a physical function. Once the precipitating event is identified and therapy is pursued, the condition may be reversible. A return to moderate drinking may be viable for late-onset alcoholics. Early-onset drinkers have had a drinking problem for many years and have either avoided, or have undergone unsuccessful, treatment. While the prognosis for successful treatment of chronic, lifelong problem drinkers is poor, it is not impossible to treat.

Assessment

The U.S. Preventive Services Task Force recommended in 2004 that all adults be screened for alcohol misuse, with referral for counseling, if necessary. During the early stages of alcoholism, no physical signs or symptoms signal the shift from health to disease. Often, behavioral problems, such as repetitive accidents or injuries or ongoing work and family problems, accompany alcohol misuse.

It may be especially difficult to detect alcohol problems among retired persons who have few opportunities to experience problems in the work or community setting. It appears to be particularly difficult for physicians to detect. When presented with early symptoms of alcoholism, only 6% of 462 physicians mentioned substance abuse as a possible diagnosis (Schmid, 2000). It is estimated that physicians make the correct diagnosis of alcoholism in older adults in only 22% to 37% of actual cases seen in emergency departments or during hospitalizations ("AMA Reports," 1995).

Even when alcoholism is recognized, the physician is less likely to initiate or recommend treatment for older clients than for younger clients (Curtis et al., 1989). Some physicians believe it is too late in their older patients' lives to do anything about the problem of alcoholism (Butler et al., 1998). Other physicians believe it is too difficult and time consuming to accurately assess. One qualitative study of 14 primary care physicians at a Veterans Affairs General Internal Medicine Clinic revealed that providers often did not pursue disclosures from older patients about alcohol problems, or provided advice that was typically vague and tentative—particularly in contrast to smoking-related advice (McCormick et al., 2006).

One of the most popular assessment tools for busy health professionals, and one that has been tested with older clients, is the CAGE

questionnaire. It has good sensitivity and specificity for alcohol abuse in general, though it is less sensitive to early problem or heavy drinking (USPSTF, 1996). The four questions in the CAGE ask the following:

Have you ever:

Thought about	*Cutting* down?
Felt	*Annoyed* when others criticize your drinking?
Felt	*Guilty* about drinking?
Used alcohol as an	*Eye* opener?

Two or more affirmative responses to the above questions suggest an alcohol problem.

Although the CAGE instrument is practical for the busy health care professional, more sensitivity and specificity can be obtained with longer questionnaires, especially the 25-item Michigan Alcohol Screening Test (MAST) that has been tested with older adults (Schonfeld, 1993). The MAST, however, is too lengthy for routine screening.

There is a brief version of the MAST, but it and the CAGE lose sensitivity when used in a community where the base rate of alcoholism is low (Crowe et al., 1997). Moreover, a study comparing the short version of the MAST and the CAGE concluded that they were capturing different aspects of unsafe drinking, and perhaps both instruments need to be used (Moore et al., 2002).

A third commonly used assessment tool is the Alcohol Use Disorders Identification Test (AUDIT). The value of the AUDIT is that it incorporates questions about quantity, frequency, and binge behavior (USPSTF, 1996). The AUDIT focuses on drinking during the previous year and is less sensitive for past drinking problems that can help the clinician distinguish between late-onset versus long-term drinking problems.

Another assessment option is a biochemical test for diagnosing alcohol abuse. The carbohydrate-deficient transferrin test, approved by the FDA, improved upon the specificity and sensitivity of previous biochemical tests and could help break through the denial and rationalization of a patient.

Prevalence

Estimates of the percentage of older Americans who are problem drinkers vary widely, from 2% to more than 10% (Butler et al., 1998). The National Health and Nutrition Examination Survey reports that 7% of older adults are heavy drinkers of alcohol (Moore et al., 1999). About

10% of patients who go to an emergency room with an alcohol-related problem are over age 60 ("Measuring Alcohol's Effect," 1996), though the prevalence of alcohol-related hospitalizations declines with age for both men and women (Adams et al., 1993).

It is not easy to estimate the scope of problem drinking in late life because much of it may take place out of the glare of work and community life. It is easier to predict that alcohol abuse and dependence are likely to increase in the coming decades due to baby boomers having a history of greater alcohol consumption than current cohorts of older adults (Reid & Anderson, 1997).

Associated Diseases and Problems

Although problem drinking in late life is less than for younger adults, the risks of alcohol abuse for older drinkers are elevated in terms of falls and accidents, dementias, medical problems, reaction time, memory, and interactions with prescription and over-the-counter drugs (Butler et al., 1998; Schonfeld, 1993). Nutritional deficiencies, particularly vitamin and protein deficiencies, are more common among older alcohol drinkers as well because of the increased inhibition of the absorption of many nutrients.

With age the body absorbs a higher percentage of the alcohol consumed. This occurs because alcohol is soluble in water and not in fat; and as we age, lean body mass that is high in water content decreases and body fat that is low in water content increases. Thus alcohol reaches a higher concentration in the blood of an older person. Also, as we age, there is a decline in the stomach enzyme—alcohol dehydrogenase—that can break down alcohol before it reaches the bloodstream. This further increases the blood alcohol level and places an extra burden on the liver, where most alcohol metabolism takes place.

Moreover, as we age, blood flow through the liver declines, as does kidney function, which means that alcohol is eliminated more slowly from the blood. Consuming the same amount of alcohol as a younger person, the older person will have a blood alcohol level that is 30% to 40% higher.

Although alcohol adds calories to the diet, it adds almost no nutrients; therefore malnutrition becomes a problem as well. Other problems of excess alcohol consumption are an increased risk of injury or accident, especially when driving, and, along with excess caffeine and medications, an adverse effect on sleep.

At least 100 of the most commonly prescribed medications interact negatively with alcohol. This interaction effect, along with the increased

vulnerability of older adults to alcohol abuse, accounts for the fact that older adults are hospitalized as often for alcohol-related problems as for heart attacks (Adams et al., 1993).

Intervention and Referral

Most patients with suspected drinking problems receive no counseling from primary care physicians. One study cited that about one-third of physicians report having counseled patients on alcohol abuse (Rosen et al., 1984). However, the percentage is likely to appear much lower when patient records are examined. One study of patient records, in fact, revealed that only 18% of patients were counseled by physicians (Hayward et al., 1987). When physicians do offer problem drinkers advice and additional workbook materials, problem drinking may be reduced and maintained for at least a year (Fleming et al., 2000). One study reported that physician referral—regardless of whether it was completed—was associated with less drinking (Crawford et al., 2004).

Older adults often drink in response to depression and loneliness, whereas younger adults are likely to use multiple substances to assuage their anger, frustration, tension, interpersonal conflicts, and social pressure (Schonfeld et al., 1992). If interventions are to be effective, most older adults with alcohol abuse problems will need to be referred by their health professionals to groups or specialists who recognize the different needs of older versus younger persons. Only 18% of 13,749 substance abuse programs nationwide offer specialized treatment for elders.

Some evidence indicates that persons referred to age-specific support groups remain in treatment longer and complete treatment more often than those in age-mixed groups (Kofoed et al., 1987). Problems such as widowhood and retirement, which are not of universal concern, may be particularly difficult for older people to share in support groups of mixed ages (Schonfeld, 1993). Borkman (1982) reports that older adults might also be reluctant to air their problems in Alcoholics Anonymous (AA) groups with predominantly younger members.

About one-third of those who attend AA meetings are over age 50, and many communities launch groups specifically for older adults. The geriatrician Robert Butler, MD, suggests, “Because of the magnitude of drinking problems among older people, it would be useful to have AA programs set up especially for them—perhaps called Ala-elder” (Butler et al., 1998, p. 178).

Treatment Alternatives

Detoxification programs focus on the drying-out process, providing medical supervision to addicted persons who are going through periods of withdrawal. Because withdrawal symptoms can be severe, most, but not all, detoxification programs are affiliated with hospitals and are under the supervision of a physician.

AA employs a strategy that encourages public confession, intense social support, contrition, and a spiritual or philosophical awakening (Robertson, 1988). Founded in the 1930s, AA today has about 89,000 groups around the world and about 1.8 million members (Butler et al., 1998). Companion organizations have been set up for the spouses (Al-Anon), teenaged children of alcoholics (Alateen), and adult children of alcoholics.

The anonymous nature of membership in AA makes it difficult to evaluate this type of intervention. Even if researchers could randomly assign alcoholics to an AA group or to an alternative intervention, that research design would eliminate one of the most important elements of joining a group, namely the ability to seek the intervention voluntarily. Also, older alcoholics may raise a unique set of research issues when evaluating the effectiveness of AA groups. Are older adults prepared for the openness that characterizes these types of support groups? Do older adults have access to a support group with other older alcoholics to whom they can relate?

Professionally led programs should be viewed as complementary to AA and other peer support groups, rather than as being in competition with them. Professionally run treatment programs may be more effective than AA groups for some older individuals, but they have disadvantages as well. They are typically costly and time bound, in comparison to support groups that can and do meet frequently (sometimes several times a week) and that continue on an ongoing basis.

The self-management strategies outlined under smoking cessation and the vulnerability to relapse are applicable to alcohol addiction as well. Behavior management techniques may need to be reapplied on multiple occasions.

Positive Effects

Two studies found that individuals who consume moderate amounts of alcohol reduce their risk of heart failure; and if a heart attack occurs, these individuals are more likely to survive it in comparison to teetotalers or heavy drinkers (Abramson et al., 2001; Mukamal et al., 2001). Moderate alcohol consumption also appears to have a protective effect on ischemic stroke (Sacco et al., 1999). People who drank only one or two

drinks daily had a 45% lower risk of stroke caused by insufficient blood flow to the brain. It is not clear why moderate drinking appears to have a positive effect on health, but it may act to lower blood pressure, raise protective HDL cholesterol, or reduce the likelihood of blood clots.

A survey of 490,000 adults, ranging in age from 30 to 104, concluded that taking one alcoholic drink a day provides a slight edge in longevity compared to nondrinkers (Thun et al., 1997). People who drank a small amount of alcohol on a daily basis reduced their incidence of heart disease and stroke, which modestly outweighed the increased risks associated with regular drinking, that is, death from cancer (especially breast cancer) and accidents. The study authors were not touting alcohol as the preventive therapy of choice because limiting oneself to one drink of alcohol daily is not the drinking pattern of many Americans.

"Reasonably small and controlled alcohol intake may be of benefit to the elderly, as it may stimulate appetite, increase socialization, and may play a 'protective' role against coronary artery disease" (Lamy, 1988). Nursing homes may be one type of facility where the introduction of controlled alcohol intake can be an effective preventive therapy. Research findings indicate that moderate alcohol drinking in nursing home institutions improves mental health and physical functioning, although the effects of an increased opportunity for socialization and increased personal control may be contributing to the positive outcomes as well.

Resources

For written material and other resources on alcohol abuse, contact the following:

Alcoholics Anonymous, 475 Riverside Drive, 11th floor, New York, NY 10115; or the Web site http://www.aa.org; or the local chapter of Alcoholics Anonymous, Al-Anon, and Adult Children of Alcoholics, listed in area phone books; or on the Web site http://www.al-anon-alateen.org.

National Clearinghouse for Alcohol and Drug Abuse Information, P.O. Box 2345, Rockville, MD 20852; 800-729-6686; http://www.health.org.

Hazelden's brochure "How to Talk to an Older Person Who Has a Problem With Alcohol or Medications" and other materials; call 800-257-7810, or go to the Web site http://www.hazelden.org.

Smart Recovery provides online and other types of support groups for abstaining from alcohol addictive behavior. It can be accessed at 7537 Mentor Avenue, #306, Mentor, OH 44060; 866-951-5357 (toll-free); http://www.smartrecovery.org.

National Institute on Alcohol Abuse and Alcoholism (http://www.niaaa.nih.gov).

MEDICATION USAGE

More than 10,000 prescription drugs are currently available to Americans, and over a billion prescriptions are dispensed per year. There are also 300,000 over-the-counter medications, including 600 that would have required a prescription just a few years ago. It is not unreasonable to suggest that most Americans consider taking medications a normal part of life.

Because vulnerability to chronic disease increases over time, medication usage becomes more typical with age. Although adults aged 65 and over comprised 12.4% of the population, they accounted for 34% of outpatient prescription medications and nearly half of those purchased over the counter ("Protecting Yourself," 1996). Older persons rely on drugs to alleviate pain and discomfort and to give them a sense of security and control in sometimes frightening health situations. Drugs, however, can make matters worse as well as better. The potential for serious adverse drug reactions is great.

Misuse

About 50% of prescriptions are not taken properly, and according to the National Council on Patient Information and Education, an estimated 125,000 Americans die each year from prescription drug misuse. In fact, there are more deaths from prescription medication than from accidents, pneumonia, or diabetes (Lazarou et al., 1998).

On an outpatient basis, about 5% of Medicare patients are made ill by their medications during the course of a year, leading to as many as 1.9 million drug-related injuries (Gurwitz et al., 2003). More than half of these adverse drug events are preventable, ranging from mistakes made by physicians to failure of patients to adhere to medication instructions.

In 2006, the Institute of Medicine reported that drug errors injure more than 1.5 million yearly. This conservative figure only includes drug errors in hospitals, nursing homes, and among Medicare outpatients. It does not include mistakes in physician offices or those made by patients themselves. The institute recommends that electronic prescriptions be standard by 2010 and that patients be strongly encouraged to carry complete listings of their prescriptions to every doctor's visit.

About 15% to 20% of hospital and nursing home admissions are the result of adverse drug reactions ("Protecting Yourself," 1996), and about 11% of emergency department visits by older adults are due to adverse drug reactions (Hohl et al., 2001). These percentages are probably underestimated because medical personnel are not enthusiastic about filing the additional reports required by the FDA (Lazarou et al., 1998). Adverse drug reactions probably affect older adults 3 times as often as the general population (Sloan, 1986).

To avoid adverse drug reactions, patients need to comply with their medication regimens, report unexpected side effects, and exercise caution with over-the-counter medications. They also need to know more about their medications. Only 15% of elderly patients who visited an emergency department were able to accurately report on their medications, dosages, frequencies, and indications—patients who were disoriented or medically unstable were excluded from this study (Chung & Barfield, 2002). Audiotaped office visits from 185 outpatient encounters revealed that physicians addressed adverse effects of new medications, and how long to take them, only one-third of the time (Tarn et al., 2006).

Physicians need to take a good drug history, carefully assess dosage, communicate the rationale for the drug treatment and the expected response and common side effects, and monitor patient reactions. The aging process complicates this course of action because it affects the absorption, distribution, metabolism, and excretion of medications (Pollock & Mulsant, 1995).

Physicians also need to know which medications are inappropriate for older persons. About 1 million older patients were prescribed 1 of 11 medicines that a panel of geriatric medicine and pharmacy experts had agreed should always be avoided by older adults (Zhan et al., 2001). Five percent of older HMO members received at least 1 of these 11 drugs, and 13% received a medication classified as rarely appropriate (Simon et al., 2005). In one study of 162,000 elderly outpatients, 21% filled a prescription for a drug that should be avoided by older persons (Curtis et al., 2004).

Overprescribing is common as well: "Even when non-pharmacological treatments are suitable for a given condition, physicians often prescribe medications. Predictably, the greater the number of drugs prescribed, the greater the risk of inadvertent or intentional misuse of drugs by the patient or caregiver" (Montamat & Cusack, 1992).

Polypharmacy is the use of more medications than are clinically indicated. Older adults are particularly vulnerable to polypharmacy because most of the chronic conditions associated with aging are potentially

responsive to medications. This leads to the increased risk of multiple drug use among older adults, complicated by the fact that many older patients see more than one health care provider. With more than one provider, prescription and over-the-counter drug usage may not be coordinated, and older clients are vulnerable to potential interactions—drug–drug, drug–allergy, drug–food, drug–drink, and drug–disease—and therapeutic duplication.

This challenge has been met, to some extent, by the fact that almost all pharmacies in this country are using computers. Nonetheless, many pharmacies do not have complete computer records of all the medication usage of their clients.

On the basis of an article by Montamat and Cusack (1992), 10 patient-related and physician-related factors may contribute to polypharmacy and other types of drug misuse:

Patient-Related Drug Misuse Factors

1. Expectation of physician to prescribe medication.
2. Inadequate reporting of current medications being taken.
3. Failure to complain about medication-related symptoms.
4. Use of multiple, automatic refills without visiting a physician.
5. Hoarding and using prior medications.
6. Use of multiple pharmacies or multiple physicians.
7. Borrowing medications from family members or friends.
8. Self-medication with over-the-counter drugs.
9. Impaired cognition or vision.
10. Underuse of medications due to side effects and cost considerations.

Physician-Related Drug Misuse Factors

1. Presuming that patients expect a prescription.
2. Treatment of symptoms with drugs without sufficient clinical evaluation.
3. Treatment of conditions without setting therapy goals.
4. Communicating instructions in an unclear, complex, or incomplete manner.
5. Failure to review medications and their possible adverse effects at regular intervals.
6. Use of automatic refills without adequate follow-up.
7. Lack of knowledge of geriatric clinical pharmacology, leading to inappropriate prescribing practices.
8. Failure to caution about medication interactions.
9. Failure to simplify drug regimens as often as possible.

10. Failure to identify and adequately communicate the equivalency of cost-effective generics.

Prevention

One of the most effective prevention strategies is to avoid unnecessary medication. Many Americans unthinkingly take pills to alleviate constipation, insomnia, indigestion, headache, and other types of pain or discomfort. Diet, exercise, and stress management, however, may be effective alternatives that avoid the danger of medication side effects.

Elderly clients with high blood pressure are susceptible to severe adverse drug reactions (Potter & Haigh, 1990). Treating some patients with modestly high blood pressure with nonpharmacological alternatives may therefore be appropriate. Older adults can be responsive to a reduction in sodium intake (Horwath, 1991), and exercise can reduce the risk of elevating blood pressure levels (Evans et al., 1991).

"Physician and patient must have an understanding of the … degree to which [the other] favors chemical or psychological coping devices" (Taylor et al., 1982, p. 299). Many patients, and some physicians, believe that a productive medical encounter requires the writing of a prescription. In support of this assertion, about 75% of all physician visits result in the prescription of a drug (Kemper et al., 1985). Along with unnecessary prescriptions, older clients are more likely to be inadequately knowledgeable about the drugs prescribed for them (American Board of Family Practice, 1987).

If prescriptions become the treatment of choice, more patients may be willing to participate actively in choosing among medication alternatives (type, dosage, and schedules) than the physician feels comfortable with (American Board of Family Practice, 1987). Yet active participation in choosing drugs is likely to lead to better compliance (Taylor et al., 1982).

Advice From Pharmacists

Since January 1993, pharmacists have been required to give Medicaid patients advice about their prescription drugs. When the federal Health Care Financing Administration implemented these rules, some state boards of pharmacies expanded them to cover all patients.

In addition to informing patients verbally and in writing, pharmacies must maintain files of patient information (including a list of the medicines and health care devices being used by the patient). The pharmacist must provide specific information about each medication, its

common side effects, potential interactions, and contraindications, and must instruct patients on monitoring their responses, explaining what to do if a dose is missed and how to store the medicine. Since 1995, pharmacies have been required to provide an area suitable for confidential patient counseling. It is not uncommon for some of these regulations to be ignored.

The consumer who is most disadvantaged, especially in monitoring potential interaction effects, is the one who pharmacy-hops for either financial purposes or convenience. It is not unusual for a patient to obtain prescription drugs from multiple sources, such as a community pharmacy, a hospital pharmacy, a mail-order pharmacy, and directly from the physician. To offset this inconsistency, it would be useful for a credit card system to be implemented to enable patients to carry prescription records with them wherever they go.

A Physician's Experience

> Recently, I spoke to a group of older people. I told them that as a young doctor I had spent most of my time putting patients on drugs. But now that I'm an old doctor, I spend a lot of my time taking patients off drugs. I thought the remark might elicit a few smiles or chuckles. Instead, they rose as a body, cheering and clapping. (Morgan, 1993)

Advertising

Only the United States and New Zealand permit advertising of prescription medicines to consumers. As the number of advertisements continues to rise, along with consumer spending on advertised prescription medications, this practice becomes increasingly controversial. The 50 most advertised prescription medicines in 2000 contributed an additional $10 billion in spending on medications. The television messages are almost irresistible: After taking a medication, people with allergies are now able to romp happily in an open field, or those with painful heartburn are now able to scarf down a pepperoni pizza.

Merck & Company spent $161 million on Vioxx, an arthritis drug, in 2000, and sales of that one drug alone increased more than $1 billion. (Vioxx was voluntarily withdrawn from the market in 2004 because of its association with increased risk for heart attacks and stroke.) The amount of advertising for Vioxx that year was more than PepsiCo spent to advertise Pepsi or Budweiser spent to advertise beer. Besides prescription arthritis drugs, the most heavily advertised medications were cholesterol-lowering drugs, antidepressants, allergy medicine, and heartburn medicine (Petersen, 2001).

Greater exposure to prescription drug advertising was significantly associated with a higher probability of a patient request for an advertised drug. Physicians grant about 75% of these requests for advertised drugs, and about half of these encounters result in drug prescriptions that physicians would not choose again for a similar patient with the same condition (Mintzes et al., 2003).

As geriatrician John Morley, MD, noted, "Nancy Reagan's 'Just say no to drugs' campaign may have been more effective if it had been aimed at adults rather than teenagers" (2002).

Resources

Many readily available booklets on medication are good consumer safety tools for today's cohort of older adults. These booklets remind consumers of important questions to ask their physicians and pharmacists, offer several ideas to improve daily compliance in taking medications, provide a listing of generic equivalencies, note commonly reported side effects of particular medications, and offer blank charts for listing all prescriptions and over-the-counter medications prior to visiting a physician.

Consumers who are vulnerable to psychological and emotional factors that may affect their use of medications can obtain free copies of a booklet entitled *So Many Pills and I Still Don't Feel Good: Suggestions for Preventing Problems With Medications*. The booklet helps individuals recognize times when they may be at risk for misuse of medications, suggests ways to manage medications, lists questions to ask the doctor or pharmacist about medications, and suggests things to do if there is a problem with medication usage. Up to 50 free copies are available from AARP Fulfillment, 601 E Street, NW, Washington, DC 20049; order PF 4767 (1091) D14581 (no telephone orders).

Two other booklets are provided free by AARP: *The Smart Consumer's Guide to Prescription Drugs* (PF 4297(389)-D13579) and *Using Your Medicines Wisely: A Guide for the Elderly* (PF 1436(1185)-D317). Contact AARP Publications, Program Resources, 601 E Street, NW, Washington, DC 20049.

To get answers about the drug approval process, drug reactions, and new and approved medications, contact the Food and Drug Administration, Center for Drug Evaluation and Research, CDER Executive Secretariat (HFD-8), 5600 Fishers Lane, Rockville, MD 29857; 301-827-4570; or go to the Food and Drug Administration Web site at http://www.fda.gov and click on "Information for Consumers" and then on "D" for drug interactions.

To learn about AARP's Check Up on Your Prescriptions campaign and to find links to other useful sites, go to http://www.aarp.org/wiseuse. AARP's mail-order pharmacy is for members of AARP (who are aged 50 and older and pay a small annual membership fee). This network of regional pharmacies provides information on common prescription drugs, their side effects, and cost differences between brand names and generic drugs: AARP Pharmacy Services, 500 Montgomery Street, Alexandria, VA 22314; 800-456-2277.

Three sources of free information on older persons and medications are the Elder Health Program, School of Pharmacy, University of Maryland at Baltimore, 20 North Pine Street, Baltimore, MD 21201, 410-706-2434; the National Institutes on Aging, P.O. Box 8057, Gaithersburg, MD 20898-8057, 800-222-2225; and for taking prescriptions safely, go to http://www.prescriptionforsafety.com.

Finally, contact the National Council on Patient Information and Education for free booklets and other information on prescriptions. For the free booklet "Prescription Medicines and You," call 800-358-9295. For additional information, go to http://www.talkaboutrx.org. To find out about nonprescription products, go to http://www.bemedwise.org.

INJURY PREVENTION

Unintentional injuries were the fifth leading cause of death in the United States in 2002, accounting for 106,740 deaths. And while the percentage of deaths from unintentional injuries was lower among persons aged 65 and older, the mortality rate from injuries for older adults was more than twice that of other age groups.

Among older adults, some injury problems appear to be getting worse. During the decade of the 1990s, the *Healthy People 2000 Final Review* reported that among people 65 years of age and older, the hospitalization rate for hip fractures increased from 714 to 863 hospitalizations per 100,000 persons.

Two of the main antecedents of injuries are falls and motor vehicles. A number of physical and environmental factors associated with age contribute to the greater frequencies and severity of injuries from falls and motor vehicles: diminished vision and hearing, poor coordination and balance, slower reaction time, and arthritis and neurological disease. In addition, medication use, which increases with age, can produce drowsiness, confusion, and depression and increase the probability of accidents (Spirduso, 1995).

Other factors are extrinsic to the increased incidence of falls among older people. Homes age along with people; uneven floor surfaces and the absence of safety equipment (such as grab bars for bathtubs and showers) in older homes contribute to accidents. Other environmental culprits are throw rugs, inadequate lighting, steep stairs, and lack of railings on stairs.

Accidents can also increase as road repairs and improvements and law enforcement fail to keep pace with the increased demands of automobile traffic. Transportation systems and cars are not designed with older people's capacities in mind, and few cities acknowledge the need to lengthen the duration of walk signals at crosswalks to accommodate older pedestrians.

Fall Prevention

Approximately 60% of persons who die from falls are aged 65 or older, and about half of the older adults who are hospitalized from a fall do not live more than 1 year (Rivara et al., 1997; Spirduso, 1995). People aged 75 and older account for 59% of fall deaths, even though they are only 5% of the population ("Accidents Don't Just Happen," 1995).

A majority of older adults who have serious hip fractures never regain their previous function. Falls result not only in decreased physical functioning, but also in decreased confidence and the fear of falling. The fear of falling can then lead to a cycle of social isolation, further functional decline, and depression (Rubenstein et al., 1994; Tinetti et al., 1994).

The primary risk factors for falling are balance abnormalities, muscular weakness, visual disorders, gait abnormalities, cardiovascular disease, cognitive impairment, medication usage, and environmental hazards (Spirduso, 1995). Many of these risks are preventable. Tai Chi, for instance, improves balance and reduces falls (Wolf et al., 1996; Wolfson et al., 1996). Weight-bearing and other types of exercise reduce the risk of hip fracture and falls (Campbell et al., 1997; Robertson et al., 2001; Rubenstein et al., 2000; Tinetti et al., 1993).

Persons with osteoporosis—which can lead to falls—can be helped by treatment with medications that increase bone density (Morley, 2001). Footwear is important in the reduction of falls, with sneakers associated with the lowest risk of a fall, and going barefoot or in stockings associated with the highest risk (Koepsell et al., 2004). Environmental changes, for example, night-lights, placement of objects and furniture, removal of tripping hazards, use of nonslip floor mats, and installation of grab bars

in the bathroom, can lead to a reduction in the incidence of falls by older adults.

Regarding environmental hazards, up to 40% of older adults living in the community fall each year, and 75% of these falls occur within the home. It therefore behooves the health professional to recommend a home assessment to identify conditions that increase the risk for falling, to suggest environmental changes, and to educate their clients to reduce the risks.

An environmental assessment of the homes of 1,000 persons aged 72 and older was conducted in Connecticut, and the prevalence of environmental hazards was high. Two or more hazards were found in 59% of the bathrooms and in 23% to 42% of the remaining rooms (Gill et al., 1999).

Two-thirds of all deaths due to falls in the home are preventable (Ferrini & Ferrini, 1989). The following is a list of 10 simple precautions that can reduce the risk of falls within the home:

1. Provide proper illumination and convenient light switches—by the bed, at the end of the hall, and at the top and bottom of stairs. Older persons generally need 2–3 times as much illumination as younger persons do.
2. Install handrails and place nonslip treads in strategic locations.
3. Tack down or remove loose throw rugs and repair torn carpet.
4. Install grab bars and use adhesive strips in the shower and bath. Only about 6% of the dwelling units of older persons have grab bars in their bathrooms.
5. Eliminate such hazards as trailing electrical cords, sharp corners, slippery floors, and household items that require a step stool to reach.
6. Lower bed height for ease in getting in and out.
7. Wear footwear that provides adequate traction, such as supportive, rubber-soled, low-heeled shoes.
8. Exercise to improve balance, flexibility, strength, and coordination.
9. Avoid the misuse of medications and alcohol.
10. Limit fluids after dinner, which can reduce nighttime trips to the bathroom.

Several health conditions place older individuals at risk for falling. Some of these conditions are dizzy spells, osteoporosis, arthritis, alcoholism, structural diseases of the feet, stroke, visual or hearing impairments,

gait and balance disorders, physical weakness, and the use of medications that impair coordination and balance or result in frequent trips to the bathroom at night. A multidisciplinary geriatric assessment can identify those at risk and help to prevent serious injuries from falls.

An increasing number of departments of internal medicine and family medicine at university medical schools as well as private practitioners provide multidisciplinary geriatric assessments. Teams invariably include a physician and nurse, and those with enhanced benefit to consumers include several of the following health professionals: occupational therapist, physical therapist, counselor, social worker, health educator, pharmacist, and dentist.

There are several innovations to protect older adults at risk of falls. A telephone emergency alert system, for instance, has a signaling device that is worn around the neck or on the belt of older adults who have a tendency to fall. Anatomically designed external hip protectors can reduce the risk of hip fracture among frail elderly adults (Kannus et al., 2000).

Universal design is an architectural philosophy for new homes, or the modification of existing ones, to make them safer for older persons and those with disabilities. Universally designed homes may include grab bars that look like towel racks, counters with stripes around the edge to create definition for people with poor vision, showers with pull-down seats, entrances with no steps, doorways that are wider to accommodate wheelchairs, and bedrooms and bathrooms on the same level as the main entrance so that stairs will not bar access. For more ideas on applying universal design to a home, contact AARP via their Web site (http://www.aarp.org/universalhome).

A guide that includes summaries of innovative programs to prevent falls, short descriptions of research findings on the topic, a home safety and fall prevention assessment tool, and educational strategies is provided by AARP. For a copy of *The Perfect Fit: Creative Ideas for a Safe and Livable Home* or the *Fall Prevention Guide*, contact AARP/Program Resources, 601 E Street, NW, Washington, DC 20049.

Motor Vehicle Safety

On July 16, 2003, an 86-year-old driver killed 10 people and injured 45 more when he drove into a crowded farmer's market in Santa Monica, California. Despite widely publicized tragedies like this one, older drivers kill fewer motorists and pedestrians than any other age group and have the lowest crash rates per licensed driver (Swoboda, 2001). Experts attribute this decline to self-imposed limitations such as driving fewer miles and avoiding night driving, bad weather driving, and rush hour traffic.

As older drivers increase, however—there were 18 million registered drivers over age 70 in 2001, and 40 million are expected by the year 2020—they will account for an increasing share of the motor vehicle accidents each year. And once having reached age 75 or older, collision risk is nearly equal to younger drivers aged 16–24. For older adults in a collision, however, the risk of serious injury and death is much higher.

A number of physiological changes affect the driving of older adults. Arthritis makes it difficult to turn one's head and directly observe cars coming up from behind. Slower reflexes make emergencies more dangerous to contend with. Susceptibility to glare, poor adaptation to dark, and the need for additional light make night driving riskier. Cognitive impairment rises with age and has been linked to higher motor vehicle crash rates in elderly individuals (Retchin & Anapolle, 1993). Medical conditions, and comorbidity, in particular, are correlated with decreased driving amount and driving cessation (Forrest et al., 1997).

Driving in late life is not necessarily an all-or-nothing proposition. Older adults who find driving an automobile increasingly difficult can restrict their driving to areas with little traffic, avoid rush hours, and abstain from driving at night. In addition, older adults may need to be vigilant about restricting their driving to those periods of time when their medications are not slowing their reaction times or compromising their vision.

Some measures to prevent motor vehicle accidents follow:

1. Enroll in a driver safety class designed for midlife and older motorists, such as a course through AARP 55 Alive or the state motor vehicle department.
2. Adjust to hearing and vision losses, that is, keep radio, air conditioner, and heater noise low; crack windows open to hear warning signals; wear good-quality sunglasses; and keep windows clean inside and out.
3. Time trips to minimize the effects of medications.
4. Stop frequently to stretch muscles and rest eyes.
5. Limit driving to the safest times of day and to familiar areas.
6. Use seat belts all the time, even on short trips and in cars with airbags, in order to prevent injury from side collision.
7. Keep the car in good working condition.
8. Avoid drinking while driving.
9. Lobby for state policies that are more responsive to the functional abilities of older drivers.
10. Lobby for state policies that require physicians to report motorists who have health problems that could affect their driving ability.

In regard to advocating for more responsive state policies (measure 9), selected states have begun to make the following traffic improvements: wider highway lanes, larger road signs with larger letters and numbers, more reflective pavement markers to better illuminate roads at night, and street names displayed well in advance of intersections.

In regard to advocating for more responsible physician reporting (measure 10), six states—California, Delaware, Nevada, New Jersey, Oregon, and Pennsylvania—require physicians to report motorists who have health problems that could affect their driving ability. In the District of Columbia, physician certification of physical and mental driving competency, a vision test, and a possible reaction test are required at the renewal of a driver's license at age 75 and older.

In one study using a convenience sample of older patients at a medical clinic in Hawaii, 24% of older adults with poor brain function said they currently drove. This poor cognitive performance was often unrecognized by their physicians. Doctors identified mental problems in only 5% of the older adults with intermediate impairment and 11% of older adults with poor mental performance (Valcour et al., 2002).

The stakes are high for those who give up driving and do not find innovative transportation alternatives. One study reported that older adults who give up driving are more likely to enter a nursing home or assisted living facility (Freeman et al., 2006). For those who want to remain in their homes a researcher reported that older adults will live up to 10 years after they stop driving. During this time they will need to rely on other forms of transportation (Foley et al., 2002).

An innovative response to the challenge for older adults who give up driving is the Independent Transportation Network. Older adults who agree to stop driving trade in their cars, and the value is booked into an account from which they can draw to receive rides. About $8 is deducted for each car ride given by a paid driver, less when scheduling rides in advance or for sharing a ride.

The Independent Transportation Network program was started by Katherine Freund, whose son was hit by an elderly driver in Portland, Maine. Pilot programs are being started in several cities. For more information, contact http://www.itnportland.org.

If you want a booklet on how to talk to an older family member who may need to consider giving up the driving privilege, contact The Hartford, Family Conversations With Older Drivers, 200 Executive Boulevard, Southington, CT 06489. In the same way that people prepare for retirement, older adults will also need to plan ahead for the resources they will need after they stop driving. If attention is not paid to this challenge, social isolation and depression may result.

There is little guidance for older adults on when to stop driving. Charges of age discrimination, and the millions in additional costs to test older drivers, have served as deterrents to states attempting to propose bills to require additional testing for older drivers. In 2006, 27 states required accelerated renewal for older drivers. The earliest age for renewal begins at 61 years in Colorado, the latest age at 81 in Illinois. Illinois, however, has the most frequent renewal cycle: every 2 years between ages 81 and 86 and every year for age 87 and older. States that mandate in-person license renewal had a 17% lower death rate among drivers 85 years and older than those states without such laws (Grabowski et al., 2004).

There are two states, Illinois and New Hampshire, and the District of Columbia, that require road tests for older drivers. On the other side of the ledger, one state, Tennessee, has legislated that licenses issued to drivers over age 65 do not expire and that no renewal is necessary.

Pedestrian Safety

On February 15, 2006, Mayvis Coyle, age 82, was given a $114 ticket for taking too long to cross a Los Angeles street. Ms. Coyle, who uses a cane, was unable to make it to the other side of the street before the light turned green for oncoming traffic. While Ms. Coyle was fighting city hall for receiving what she deemed to be an "outrageous" ticket, city council members acknowledged the error of their ways and lengthened the walk light at the intersection.

Older adults are more likely than members of any other age group to be injured by motor vehicles while crossing a street and experience the highest death rate from pedestrian accidents (USDHHS, 1985). A study of 1,249 residents aged 72 or older from New Haven, Connecticut, revealed that fewer than 1% of these pedestrians had a normal walking speed sufficient to cross the street in the time typically allotted at signalized intersections (Langlois et al., 1997).

Crosswalk markings at sites with no traffic signal or stop sign are particularly hazardous to older pedestrians (Koepsell et al., 2002). Motor vehicles struck and killed 4,882 pedestrians in the United States in the year 2001, with older pedestrians at especially high risk. People aged 70 and older accounted for nearly 20% of all pedestrian deaths in 2001, nearly double what would have been expected on the basis of age-related pedestrian statistics.

Some measures to avoid pedestrian accidents follow:

1. Wear highly visible clothing, preferably of light-colored or even fluorescent material.
2. Do not assume that drivers in moving vehicles see pedestrians.

3. Do not return to the curb if the "Don't Walk" sign begins to flash. Continue to walk at maximum comfortable speed, moving your arms to be more visible.
4. Lobby local officials to install properly timed pedestrian traffic signals.

Resources

AARP's 55 Alive/Mature Driving Program was launched in 1979 and is available around the country. It is an 8-hour, classroom-based (no actual driving), driver education refresher course for persons 50 and older, and it is taught by instructors who are also 50 and older. Almost 600,000 older drivers enrolled in AARP's classes in 2000, an increase of 60% over the 1990 figure. In some states, drivers who complete the course are eligible for a discount on automobile insurance. For more information, contact AARP, either toll-free at 888-227-7669, or via the Internet (http://www.aarp.org/55alive).

A CD-ROM is available at AAA branches entitled "Roadwise Review: A Tool to Help Seniors Drive Safely Longer." This assessment tool measures physical and mental abilities that predict crash risk, such as leg strength and mobility; neck flexibility; high and low contrast visual acuity; and working memory. This CD-ROM is available at Community Safety Services, AAA Michigan, 1 Auto Club Drive, Dearborn, MI 48126.

For tips on driving safety for older adults, the AAA Foundation launched a traffic safety Web site (http://www.seniordrivers.org). Other useful Web sites are the National Highway Traffic Safety Administration (http://www.nhtsa.gov) and the Insurance Institute for Highway Safety (http://www.highwaysafety.org). For a free, comprehensive guide "Assessing and Counseling Older Drivers," contact Catherine Kosinski, Older Drivers Project, American Medical Association, at 312-464-4179; http://www.ama-assn.org/go/olderdrivers. For a free guide on Alzheimer's disease, dementia, and driving, contact http://www.thehartford.com/alzheimers.

SLEEP

Although the diagnosis of chronic, primary insomnia in older adults is estimated at 5% to 10% (Ohayon et al., 1996), as many as 40% of older adults complain about sleep problems (Vitiello, 1997). Significant sleep disturbance is likely to impact on quality of life. Insomniacs are 2.5 times more likely to have accidents than other drivers; are more likely to

be anxious, depressed or forgetful; and may recover more slowly from an illness (Mestel, 1997b). Inadequate sleep has also been associated with hypertension (Gangwisch et al., 2006) and weight gain (Gangwisch et al., 2005).

A national survey conducted by the National Sleep Foundation reported that 56% of Americans experienced one or more symptoms of insomnia, including difficulty falling asleep, waking up during the night, waking up too early, and waking up feeling fatigued (Shelton, 1999). Forty percent of the adults in this survey were so sleepy during the day that they reported it interfered with their daily activities. Yet only 4% were seeing a health care provider for advice or treatment.

Interventions

Identifying the cause of sleeplessness can be rather complicated. Insomnia can result from arthritis, a hyperactive thyroid, sleep apnea, restless leg syndrome, too much caffeine, poor circulation, inadequate sleep hygiene, anxiety, and too little exercise. The first line of attack is lifestyle change, such as restricting caffeine, keeping a regular schedule of going to bed and waking up, using relaxation techniques, limiting or eliminating daytime napping, avoiding reading and watching television in the bedroom, limiting drinking—particularly alcohol—after dinner, avoiding heavy meals late in the evening, and getting more exercise.

Regarding exercise, older adults with moderate sleep complaints slept almost an hour longer and cut in half the amount of time it normally took to fall asleep as a consequence of participating in a low-impact aerobic program (King et al., 1997). Even a sample of healthy older adult caregivers who were without initially reported sleep complaints reported improvements in sleep quality after completing a moderate-intensity exercise program (King et al., 2002).

After 8 weeks of an insomnia study, it was reported that behavioral therapy was slightly more effective than drug therapy. Follow-up assessments up to 14 months indicated that only behavioral therapy led to sustained benefits (Morin et al., 1999). Sleeping medication may be almost as effective as behavioral therapy in the short run, but in the long run, individuals build up tolerance; the dosage must be raised; and the risk for memory impairment, hypertension, and more frequent accidents is increased. Another study reported similar results: Older patients with insomnia who implemented cognitive behavioral therapy had greater improvement in their sleep than patients who received the sleep medication zopicione (Sivertsen et al., 2006).

Another study reported that two different behavior programs significantly improved sleep patterns among older adults with chronic illnesses

who had trouble sleeping. The cognitive behavioral program consisted of group education sessions. The home audio relaxation treatment consisted of audiotapes that instructed listeners in muscle, breathing, and cognitive relaxation techniques. The audiotapes included techniques similar to the ones taught in the cognitive behavioral program.

Fifty-four percent of participants in the cognitive behavior program, 39% of persons in the home audio relaxation treatment, and 6% of the members in the control group significantly improved their sleep efficiency, the time awake after sleep onset, and total time in bed (Rybarczyk et al., 2002). The authors concluded that older adults with chronic illness are able to make substantial improvements in their sleep patterns without resorting to medication. This is particularly important among older persons who already take other drugs for existing chronic medical conditions.

Seventy-five patients (mean age 55) with persistent primary sleep disorder for an average of 13 years were randomly assigned to cognitive behavioral therapy (change in attitude and bedtime habits), relaxation techniques, or a placebo. After 6 weeks, the cognitive behavioral group reduced wake time once asleep by 54%, the relaxation group by 16%, and the placebo group by 12% (Edinger et al., 2001). These improvements persisted 6 months later.

Although data on the United States is not available, the median amount of time spent on sleep-related issues in medical training in the United Kingdom is 5 min (Stores & Crawford, 1998). Not surprisingly, the typical treatment for chronic insomnia by physicians is to prescribe benzodiazepines, which have known side effects, rather than cognitive behavioral interventions (Montgomery, 2002).

Many herbs are reputed to act as sedatives, such as chamomile, exotic passionflower, and valerian extract (Mestel, 1997b), but their effectiveness is not supported by randomized, controlled research studies. The same holds true for the popular hormone melatonin, which is found in most health food stores and drugstores. There has been little controlled research that supports its use as a sleeping aid, and prolonged use may be unsafe.

One widespread approach to sleep problems, and one that is gaining even more popularity, is the use of sleeping pills. About 42 million sleeping pill prescriptions were filled in 2005, up nearly 60% since 2000. Over the past several years, a new generation of sleep aids that reduce neural activity in brain neurotransmitters (products like Ambien and Lunesta) began to advertise heavily. Not surprisingly, this has led to substantially more users of sleeping pills. In older patients, however, sedative medications are more than twice as likely to produce an adverse effect as they are to help gain a better quality of sleep, according to a meta-analysis of 24 randomized, controlled trials (Glass et al., 2005).

There are interesting sleep aid alternatives that do not involve dietary supplements or drugs. Sixty people aged 60–83 who had difficulty in sleeping listened to music tapes before bedtime. Sleep improved over a 3-week period in terms of duration, efficiency, latency, and perceived sleep quality (Lai & Good, 2006). Another sleep aid may be Tai Chi. Older adults with moderate sleep complaints improved self-rated sleep quality through a 6-month, low- to moderate-intensity Tai Chi program (Li et al., 2004).

Resources

The American Sleep Association links people interested in sleep health and sleep disorders and is a complete source of sleep information communication (http://www.americansleepassociation.org).

The National Sleep Foundation posts research and lists sleep treatment centers (http://www.sleepfoundation.org).

To access the June 13–15, 2005, Recommendations of the National Institutes of Health State-of-the-Science Panel of Adult Chronic Insomnia, contact http://consensus.nih.gov.

QUESTIONS FOR DISCUSSION

1. Do you think raising cigarette taxes in your state would lead to lower consumption rates? Why?
2. Any ideas on how we can better detect problems with alcohol among older adults?
3. An alcohol abuse specialist and a smoking cessation specialist, both of whom have focused their practices exclusively on young adults, are being confronted for the first time with older clients. What advice would you give to help each of them become more responsive to the needs and interests of older clients?
4. Think about your classroom space, your neighborhood, and your home. What steps can you take to reduce the chances that an older person will have an accident in these locations?
5. If you wanted to reduce polypharmacy and drug misuse through a grant proposal and could only focus on one group—older persons, physicians, or pharmacists—which one would it be? Why? What strategies would you recommend?
6. The author criticizes direct-to-consumer television advertising of medications. Can you make the case that, with sufficient regulation, it could be more useful than detrimental? Explain what these regulations might consist of.

7. What do you think is the single best way to prevent older pedestrians from getting killed?
8. An older adult has voluntarily given up driving, and you want to reduce her chances of becoming isolated and depressed. What ideas can you suggest that might enhance the older adult's ability to continue to be connected to the world?
9. Prepare an outline for a presentation to older adults at a senior center on improving sleep hygiene. Make sure it is an interactive presentation. What kinds of questions will you ask them in order to generate discussion?
10. Examine one other topic in this chapter that you found interesting and has not been explored when answering the previous questions. Why did you find this interesting?

CHAPTER TEN

Social Support

> You need an experience with at least one person who cares about you. It doesn't matter at what age this person appears. If you didn't have a close relationship when younger, and you now have one close person in your life, that makes up for the early deficiency. That person can appear at any time in the life cycle, even on the day of death. One does not need to make up for lost time.
>
> —Weininger and Menkin (1978)

I was struck by the simplicity and elegance of this quotation and its contrast to the somewhat pedantic quality of the rest of this chapter. What it says to me is that, at this moment in life—whether it is among our last moments or not—we need to believe that someone cares about us. The benefits that accrue from believing that we have the support of another person will be the subject of this chapter.

DEFINITION OF SOCIAL SUPPORT

Social support can be defined as the perceived caring, esteem, and assistance that people receive from others. Support can come from spouses, family members, friends, neighbors, colleagues, health professionals, or pets. The literature is rife with elaborate taxonomies of social support (Eng & Young, 1992), yet it can be reduced to three basic types:

1. *Emotional support* provides people with a sense of love, reassurance, and belonging. When individuals feel they are being listened to, and valued, they develop a healthy sense of self-worth. Emotional support has a strong and consistent relationship to health status (Israel & Schurman, 1990).

2. *Instrumental support* refers to the provision of tangible aid and services that directly assist people who are in need. Examples are financial help and household maintenance. Good instrumental support has been correlated with a decrease in psychosomatic and emotional distress and with greater life satisfaction (Revicki & Mitchell, 1990).
3. *Informational support* is the provision of advice, feedback, and suggestions to help a person address problems.

Social networks, unlike social support, are defined in terms of structural characteristics: the number of social linkages, the frequency of contacts, and so on. Although the characteristics of people's social networks do not correlate with the quality of their social support, they do correlate with positive health outcomes.

There is a tendency, however, for social networks to shrink with age—older adults have about half as many friends and associates as younger people—because older persons cease relating to people who are less close or less important to them. With older adults the quantity of relationships may decrease over time, but the quality of social relationships may be better, and lives may be more satisfying (Lang, 2001).

Social support appears to boost the immune system, reduce the likelihood of illness, speed up the recovery process, diminish the need for medication, reduce psychological strain and cognitive impairment, and lower the risk of death from heart disease (Bassuk et al., 1999; Eng et al., 2002; Fratiglioni et al., 2000; Koenig et al., 1997; Larson, 1995; Sarafino, 1990). Cohen and colleagues (1997) gave nasal drops containing viruses to a large sample of participants and discovered that those with more diverse social networks had greater resistance to upper respiratory illness. A population study of social and productive activities that involved little or no physical activity among older Americans reported that these nonphysical social activities are as important as fitness activities when it comes to impacting on mortality (Glass et al., 1999).

Unfortunately, people who provide social support can also set bad examples and offer poor advice. The correlation of negative relationships, such as those characterized by hassles and mistrust, with poor mental health is stronger than the association of social support with good mental health (Israel & Schurman, 1990).

FAMILY, FRIENDS, CHURCH, AND OTHERS

Large-scale epidemiological studies have shown that membership in a social network of family, friends, church, and other support structures

is correlated with lower mortality risk. The classic research endeavor in this area, led by the epidemiologist Lisa Berkman, was a study of 7,000 residents of Alameda County, California. The research team found that residents who were married, had ample contact with extended family and friends, belonged to a church, and had other group affiliations were half as likely to die over the course of the 9-year study as those with less adequate social supports (Berkman, 1983).

The results of research on the relationship between social support and mortality have been replicated in other large studies of both healthy and sick adults (Goodwin et al., 1987; House et al., 1988; Williams et al., 1992), most of which have controlled for other factors that might affect mortality, such as lifestyle, socioeconomic status, age, race, and access to health care. House and colleagues (1988) have shown that social isolation has as strong an effect on mortality as does smoking or high cholesterol levels. Another study reported that loneliness in people over age 50 greatly increases their risk of high blood pressure, comparable to being overweight or inactive (Hawkley et al., 2006).

Studies report the importance of a spouse or supportive family in helping people adopt or sustain good health habits. One study, for instance, reported that lifestyle interventions targeted at men and women as couples rather than as individuals resulted in a greater reduction in cardiovascular risk factors like cigarette smoking, systolic blood pressure, and cholesterol level (Pyke et al., 1997). The authors reported that targeting the couple may strengthen outcomes through the mutual reinforcement of lifestyle changes.

Another study reported that women on insulin treatment were found to be more likely to experience metabolic control (i.e., a normal fasting blood glucose level) if they were part of a supportive family (Cardenas et al., 1987). Supportive families were also found to be important in reinforcing eating behaviors, sustaining regular exercise, and helping individuals sustain weight loss (Murphy et al., 1982; Stuart & Davis, 1972; Zimmerman & Connor, 1989). Men with supportive wives were twice as likely at those whose wives had neutral or negative attitudes to continue in a physical activity program (Heinzelmann & Bagley, 1970).

An interesting study reported that the greater the marital strain, the steeper the decline in health over time for both men and women. When the researchers separated study participants into three age groups—those age 30, 50, and 70—only the oldest group showed negative health effects (Umberson et al., 2006). The researchers speculated that there may be a cumulative effect over time, combined with age-related declines in immune function and a higher rate of health problems such as heart disease.

Spouses as a source of support, however, are increasingly less available with age, particularly among older women. Although 84% of males and 67% of females live with their spouses during late middle age, the percentages drop to 65% of males and 21% of females at age 75 and over. Fortunately, older women living independently manage pretty well psychologically and may fare even better than women living with a spouse, provided they have supportive relationships from other relatives and from friends (Michael et al., 2001).

Adult children can be a primary source of social support for older adults, though their support for parents often has to compete for time and energy with their own needs and those of their children. Because of the limitations of spousal and child support, friendships take on increasing importance in late life (Wykle & Musil, 1993). In one study, support from friends was found to be more important for preventing depression than support from children (Dean et al., 1990). In another study of 1,500 Australians aged 70 and older, friends, rather than children or other relatives, were most important in lengthening survival (Giles et al., 2005).

In 1995, Robert Putnam published an article entitled "Bowling Alone: American's Declining Social Capital," and then followed up subsequent criticism of his article with a book, *Bowling Alone: The Collapse and Revival of American Community* (Putnam, 2000). Putnam argued that both television and a generation that is less civically engaged than their parents have created more social isolation—to the detriment of themselves and society. His conclusion generated much discussion, including from those who argued that there has only been a change in *type* of social support (e.g., cyberspace, nontraditional small groups like book clubs and support groups, and prayer fellowship) in contemporary America, rather than the quantity or quality of social involvement.

The question of whether there is a trend toward less social support or to different types of social support in American society remains unanswered. But Putnam's writing has emphasized the importance of monitoring social activity in America, and it has stimulated discussion on what we should do to sustain or improve it.

LAY SUPPORT

"Professionals do not take the time to first gauge the ways that ordinary people help one another and then try to strengthen the helping processes that work for them" (Gottlieb, 1985). Different terms and definitions are used to describe lay support, but the commonalties tend to crosscut these differences. One such definition is that of lay health advisors, referring to "people to whom others naturally turn for advice, emotional support,

and tangible aid. They provide informal, spontaneous assistance, which is so much a part of everyday life that its value is often not recognized" (Israel, 1985). A concept similar to lay health advisors is *natural neighbor*, coined by Collins and Pancoast (1976), which refers to people who are prompted by empathy or a desire to help others. Many do volunteer work at churches or community organizations.

Some lay health advisors or natural neighbors may not be as "natural" or as skillful as others but are willing to participate in paraprofessional training programs to increase their skills and to better identify persons who are in need of support. Two such programs, sponsored by the federal government, are the Senior Companion Program, in which low-income persons, aged 60 and over, receive a small stipend (below minimum wage) to provide companionship to peers in need; and the Foster Grandparent Program, in which low-income persons, aged 60 and over, receive a small stipend to provide companionship and guidance to children with exceptional needs, especially in hospitals, centers for those with mental retardation, correctional facilities, and other institutions that serve children. Studies of these programs report that, in addition to providing benefits to the young and the old in need, the older volunteers improve their *own* mental and physical health (ACTION, 1984, 1985).

ONLINE SUPPORT

There are thousands of different self-help groups available online. With appropriate cautions, clinicians may find these services to be a useful adjunct to their care. The *American Self-Help Clearinghouse's Self-Help Group Sourcebook Online* (White & Madara, 2002) provides information on more than 1,000 national and international self-help support groups for addictions, bereavement, physical health, mental health, disabilities, caregiving, and other stressful life situations. Information on starting and sustaining a group is also provided. The sourcebook can be accessed at http://www.mentalhelp.net/selfhelp.

Patients are forming online support groups on a daily basis. One way to access a disease-specific support group is by going to a search engine and typing in the key words "support group" and the particular condition. Or an individual can check Web directory pages under the category of health and the subcategory of support groups. Once one group has been located, individuals can ask the members for names of similar online support groups.

When facing a serious illness, there are issues relating to sex, incontinence, death, and other sensitive topics that may be hard to share with family members. Online support gives one the freedom to be more

anonymous and therefore more candid. On the downside, chat rooms and bulletin boards are not monitored or professionally facilitated. On the Internet, there is rarely a professional available to intervene when bad advice, faulty information, or inappropriate support is being given.

Also, online support does not permit a warm embrace when you need it. And it is not uncommon to spend an excessive amount of time on the Internet to the exclusion of being with people who are important to you or meeting other significant responsibilities. Ironic as it might seem, there are Internet addiction support groups on the Internet to help people with such afflictions.

There are Internet sites that are national in scope, but locally oriented, and help people connect to each other on more than just medical or health concerns. One Internet company that makes a business out of connecting people to each other is Meetup.com (http://www.meetup.com). This organization helps people set up face-to-face meetings anywhere in the country, to discuss politics, environment, caregiving, hobbies, and so forth. In its first 2 years, 2002–2004, Meetup.com signed up 2 million users. I-Neighbors.org (http://www.I-Neighbors.org) helps Internet users set up neighborhood Web sites. This nonprofit initiative has helped 5,900 neighborhoods share information about local services, events, and personal interests.

Two of the fastest growing Web sites for social networking are Myspace.com (http://www.myspace.com), which reopened in July 2003 and has attracted close to 50 million users, and Facebook.com (http://www.facebook.com), which started in February 2004 and has attracted 8 million users, mostly college and high school students. These types of social networking sites will continue to grow and include adults age 50-plus as well.

During the summer of 2006, a "MySpace" for the boomers was created by Eons (http://www.eons.com). To offset enormous, largely irrelevant results from major search engines, Eons built in a vetting process that can be billed as the first age-relevant search engine. Quickly, 800 affinity groups, with interests that include gardening, travel to Italy, and antiquing formed. Registered users can trade text, images, and audio—ranging from total anonymity to photo-accompanied attribution.

PET SUPPORT

It is estimated that between one-third and one-half of all households in the English-speaking world contain pets, yet there has been limited empirical research on the effects of animal companionship (Siegel, 1993). Though meager, and not rigorous, the research results that do

get published suggest that the effects of pet ownership on human health should be taken seriously (McNicholas et al., 2005). Many of the studies have focused on older persons, who are believed to have the greatest need for companionship.

Pet ownership, adjusting for other variables, was associated with less deterioration of physical function among older adults over a 1-year period (Raina et al., 1999). Pet therapy in long-term care facilities reduced loneliness in comparison to older residents in a control group (Banks & Banks, 2002). A Medicare study revealed that pet owners demonstrated lower levels of stress and less utilization of health services for nonserious medical problems than did those who were not pet owners ("Health and Fitness," 1991). Pet owners with heart disease had a significantly higher 1-year survival rate than did those who did not own pets (Friedmann et al., 1980).

One interesting study teamed up mildly to moderately depressed patients with dolphins at a marine science institute in Honduras (Antonioli & Reveley, 2005). Compared to a control group who got the same relaxation regimen, minus the dolphins, the intervention group enjoyed relief from their depression symptoms. The mental health improvements were still evident three months later. The researchers reported that no side effects are likely with this intervention, though accidental injuries may occur. Conservationists argue that these programs may not be so benign for the dolphins.

The majority of the evaluations of pet intervention programs have not been rigorous—even to the extent of including control groups. Also, the positive effects of pet companionship have not been separated out from the fact that many community interventions incorporate pets as part of a novel or intriguing activity. Many such pet support programs involve children and young adults. Nonetheless, the evidence to date has been generally positive and suggests that it would be desirable if "more community and volunteer organizations would play a constructive role in facilitating pet ownership among people who wish to own pets" (Siegel, 1993).

The Eden Alternative and Green House

Pet therapy and pet visitation programs with older adults in institutionalized settings appear to result in a variety of mental health benefits, though most of these programs were limited to temporary contact with pets, which restricts the bonding potential (Boldt & Dellmann-Jenkins, 1992). Unlike most previous pet therapy programs, however, dogs, cats, and other pets live *permanently* with residents in long-term care facilities through the Eden Alternative. The basic premise of the Eden Alternative

is that nursing homes should treat residents as people who need attentive care in a homelike setting. To accomplish this goal, nursing homes need to contain not only pets, but also plants, children, and other amenities that make life worth living (see Figure 10.1).

The Eden Alternative was initiated by William Thomas, MD, in 1991, when he was medical director at a nursing home in New York. Since then, it has been replicated at least partially by more than 300 nursing homes nationwide. Studies that support the benefits of the program—lower mortality rates, urinary tract infections, respiratory infections, staff turnover, resident depression, and medication costs—are reported in Thomas's (1996) book *The Eden Alternative*.

An Eden Alternative Train the Trainer Program was launched in 1996. The 3-day program demonstrates how to create a long-term care

FIGURE 10.1 The author's son visiting a resident in a nursing home (1984).

environment that supports residents emotionally and spiritually as well as physically. To find out about the training, or where there are Eden Alternative sites in your state, go to the Eden Alternative Web site (http://www.edenalternative.com).

In 2003, William Thomas moved on from the Eden Alternative to create the Green House Project. The first of 12 small (10-person) "green houses" was erected to serve persons with skilled nursing needs who desired an alternative to the larger nursing home institution and the medical model. The Green House Project (http://www.thegreenhouseproject.com) refers to homes—not homelike institutions, but homes—that will be "filled with the laughter of children, the growth of green plants, and the presence of animals." Dr. Thomas and colleagues have implemented both architectural innovations in these group homes as well as innovative ideas for staff empowerment that help to reduce staff turnover (see chapter 15, Glimpse Into the Future, for more details).

With $10 million in financial support for the period 2006–2010 from the Robert Wood Johnson Foundation, at least 30 green houses will be built around the country. There will also be up to $125,000 in predevelopment loans to replicate the green house model in each state.

Other Pet Support Options

In contrast to the Eden Alternative is the uniquely bad idea (based on this author's personal opinion) developed by two researchers from the veterinary school at Purdue University. They pilot-tested robotic dogs with older adults in retirement homes and reported that they observed positive psychological effects on the older residents. The researchers noted that the older adults not only responded well to the robot dogs, but also, they did not have to worry about remembering to feed them or about being fit enough to walk them (Eisenberg, 2002). The downside of this experiment might be the novelty of the situation producing immediate results that do not survive more than a few encounters and the less-than-ideal tactile sensation that the robot dog provides.

Although much less common than nursing home and retirement home programs, pet therapy programs based in hospital units under the leadership of nurses have been implemented as well. One nurse manager evaluated a hospital-based pet therapy program by reporting that the staff appeared to be smiling more and laughing more with the patients, and everyone seemed to work much more as a team while the pets were on the unit (Willis, 1997).

There are organizations that promote pet ownership and visitation on a national basis, some of which—like Jeff's Companion Animal Shelter, which

provided isolated older adults with companion dogs—survive only a few years. The Delta Society, however, has been in existence for more than a decade. It is an international, not-for-profit organization that provides training for volunteers and animals in visiting and therapy programs. Its program, Pet Partners, brings volunteers and their pets to nursing homes, hospitals, and schools. The society sponsors an annual conference and publishes a bimonthly magazine. For more information, contact the Delta Society, 875 124th Avenue NE, Suite 101, Bellevue, WA 98005; 425-226-7357; http://www.deltasociety.org. To observe the effects of one visiting dog, see Figure 10.2.

Another national program, called *Home for Life*, provides a sanctuary for pets if an older pet owner has to move into a nursing home or another residence that does not allow pets, or if the pet owner dies. The animal is guaranteed a home for life in this pet sanctuary. This program not only provides a safe and affordable residence for pets, but can arrange for travel to the sanctuary. Contact them at http://www.homeforlife.org.

FIGURE 10.2 Dog from a pet companion program visiting an older adult in the author's community health education class.

RELIGIOUS OR SPIRITUAL SUPPORT

During the 1990s, there was considerable research supporting the idea that people who engage in religious or spiritual activity are more likely to live longer or in better health. *Religious* and *spiritual* activities are often used as interchangeable terms and, when used in research, tend to be measured by way of religious beliefs or practices (Koenig, 2000). When a distinction is made, religious activity is considered to be more organizationally based and more traditional in its manifestation.

Religious or spiritual people not only live longer, they also have stronger immune systems, are physically healthier, and are less depressed than those who are not (Koenig et al., 1997, 1999; Larson, 1995). The relationship between religious activities and good health remains even when researchers control for potentially confounding variables, such as chronic illnesses, functional abilities, age, race, and other health and social factors.

Explanations for the positive relationship between religion and health range from the impact of religion on healthy lifestyles (e.g., less addiction to smoking and drinking); positive and supportive social relationships; positive ideologies and prayer, which lower harmful stress hormones; and more stable marriages (Idler, 1994; Strawbridge et al., 1997; "Studies Suggest," 1996).

Although church attendance decreases with age, a shift to such personal practices as Bible reading and listening to religious radio programs increases. Reduced attendance at religious services is due primarily to decreased mobility and transportation problems rather than to declining interest.

One interesting study on the effect of religious involvement on health status reported that Christians and Jews tended to die less frequently in the month before their own group's religious holidays (Idler & Kasl, 1992). Another remarkable—and considerably more controversial—study reported that intercessory prayer (praying long distance for others) was an effective adjunct to standard medical care, when analyzed as part of a randomized, controlled, double-blind, prospective, parallel-group trial—in other words, as part of an allegedly rigorous study (Harris et al., 1999).

Patients in the coronary care unit treatment group, that is, the ones who received intercessory prayer, had lower overall adverse outcomes than control group patients. Even more startling, the patients in this study were unaware that they were being prayed for, and those who did the praying did not know and never met the patients for whom they were praying.

A less controversial study on prayer reported that people who engage in private prayer before surgery are more optimistic on the day before

surgery than those who do not; and people who are optimistic before surgery for coronary heart disease recover from surgery more effectively than those who are not (Ai et al., 2002). Conversely, sick patients who are pessimistic about their religious faith had a higher risk of mortality within 2 years (Pargament et al., 2001).

In one sample of outpatients, 94% agreed with the statement that, in times of medical crisis, physicians should ask them whether they have beliefs in prayer and other religious and spiritual practices (Ehman et al., 1999). Apparently, a substantial number of medical schools are aware of this need. About 70 medical schools offer instruction in how to address patients' religious beliefs (Duenwald, 2002).

Harold Koenig, a physician and leading researcher on religion, spirituality, and medicine, reviewed 350 studies on the impact of religious involvement on physical health and reported that the majority of the studies support the finding that religious people are physically healthier and require fewer health services. Moreover, an additional 850 studies examined the relationship between religion, spirituality, and mental health, and about 70% of these studies reported that people experience better mental health and adapt more successfully to stress if they are religious (Koenig, 2000).

And Now for the Rest of the Story

Led by two psychologists from Columbia University, there are researchers who state that there is no compelling evidence of a relationship between religious or spiritual activity and health and longevity. The psychologists reviewed all 266 articles published during the year 2000 on religion and medicine and reported that only a few demonstrated the beneficial effects of religious involvement on health (Sloan & Bagiella, 2002).

One of the common mistakes made by the researchers in the studies they reviewed—including the one on intercessory prayer (Harris et al., 1999)—is the failure to control for multiple comparisons, commonly referred to in research as a fishing expedition. In other words, if you examine enough variables, you will find some of them significant on the basis of chance alone. When the studies with multiple dependent variables are statistically corrected for—a standard practice in statistical analysis when examining multiple comparisons—the significance levels of these variables disappear (Sloan & Bagiella, 2002).

The psychologists also noted that many studies were correlational rather than causal and that religious behavior can be the product of good health, rather than its cause; and the lack of religious behavior can be the product of poor health, rather than its cause. In other studies that were examined the analysts reported that improved physical and mental health

functioning was based solely on self-report, with no independent assessment; that researchers were not blinded to the data collection process, which can compromise objectivity; and that an analysis of covariates that might explain the relationship between religion and health were omitted (Sloan & Bagiella, 2002).

One study that supported these contentions was a 14-year longitudinal analysis that carefully controlled for potentially confounding covariates. Over this length of time, religious activity no longer had predictive value in terms of physical health or psychological well-being (Atchley, 1998).

There was a follow-up study on intercessory prayer that focused on cardiac bypass patients. This research took almost a decade to complete, involved 1,800 patients at six hospitals, cost $2.4 million in funding, and was rigorously conducted. The result: Prayers offered by strangers had no effect on the recovery of people who were undergoing heart surgery (Benson et al., 2006). In fact, patients who knew they were being prayed for had a higher rate of postoperative complications. This result may have been a chance finding, suggested the researchers, or perhaps it was due to the heightened awareness and anxiety over the realization that their condition needed to be prayed for.

The research battles wage on, and there is no declared winner or loser as yet on whether religious and spiritual activities improve physical health or extend longevity. In the meantime, perhaps it is reasonable to endorse the idea that health professionals who work with older clients should be sensitive to their religious and spiritual needs and provide the time to listen to, and empathize with, their concerns. In addition, health professionals can strengthen the belief systems of their clients by finding out whether they have an interest in, and access to, a pastor, rabbi, or religious study group. If the patient is primarily homebound, the health professional can encourage the patient to inquire about receiving visits from volunteers at their previously attended religious institution.

Also, it should be noted that religious activity may not affect all older adults equally. It may, for instance, be especially important as a source of social support for African American elders. Holding strong religious or spiritual beliefs seems to protect elderly African Americans from contemplating or committing suicide (Cook et al., 2002). Involvement in religious activity correlated with greater self-esteem and personal control in a sample of older African Americans (Krause & Van Tran, 1989). African American caregivers were found to be more likely than White caregivers to use religion as a means of coping (Wykle & Segal, 1991). And the effects of religious consolation or religious comfort are stronger among African American than White church members who are faced with adversity (Ferraro & Koch, 1994). Finally, a national sample of 1,500

older adults, equally divided between African Americans and Whites, concluded that "older Black people are more likely than older White people to reap the health-related benefits of religion" (Krause, 2002).

Aging and Spirituality Resources

Health professionals seeking innovative ideas or wanting to identify model programs in the area of spiritual health and the older adult can subscribe to *Aging and Spirituality*, published by the American Society on Aging's Forum on Religion, Spirituality, and Aging. To receive a copy, contact the American Society on Aging, 833 Market Street, Suite 511, San Francisco, CA 94103; 800-537-9728; http://www.asaging.org. Another publication is the *Journal of Religious Gerontology*, a quarterly publication of the National Interfaith Coalition on Aging (NICA), which is affiliated with the National Council on the Aging (NCOA). Contact NCOA/NICA at the National Council on the Aging, 300 D Street, SW, Washington, DC 20024; 202-479-0735; http://www.ncoa.org.

At the time that I wrote the third edition of this book in 2003, there were two model programs on spirituality and aging—neither of which seems to have survived into the fourth edition (based on my best efforts to locate them). Perhaps these two programs will evolve into new organizational manifestations in the future, but in the meantime, a brief description of each program reveals how innovative they were:

1. Naropa University in Boulder, Colorado, housed a master's degree program in gerontology. This unique gerontology program focused on infusing future administrators of elder programs and long-term care facilities with the capacity for compassionate care. This program not only paid attention to the knowledge and skills required to be an effective professional, but to the student's inner development and his or her attitude of service toward older adults. Alongside coursework, gerontology students engaged in contemplative practices like meditation and yoga.
2. The Spiritual Eldering Institute, which was also located in Boulder, Colorado, was a multifaith organization that focused on the spiritual dimensions of aging and provided a variety of workshops and other educational opportunities on this topic. The institute sponsored a training program to help produce leadership in spiritual eldering. The impetus for this program had emerged from a book written by its founder and president, Rabbi Zalman Schachter-Shalomi (1995), entitled *From Age-ing to Sage-ing: A Profound New Vision on Growing Older*.

Another reading suggestion for those interested in the spiritual aspects of aging is *Still Here: Embracing Aging, Changing, and Dying* by Ram Dass (2000). Ram Dass, a well-known spiritual leader and former Harvard professor, suffered a crippling stroke while in the midst of writing this book, and the septuagenarian managed eloquently to include this experience into his writing. As he notes in his book, "These days I'm the advance scout for the experiences of aging, and I've come … to bring good news. The good news is that the spirit is more powerful than the vicissitudes of aging" (Ram Dass, 2000, p. 204).

CAREGIVING, SEXUALITY, AND OTHER TYPES OF INTIMATE SUPPORT

Caregiving for an older adult often has a negative impact on health, personal freedom, employment, privacy, finances, and social relationships (Hooyman & Kiyak, 2005). Yet even this onerous task has its intimate qualities. One study of older caregivers reported that more than 70% of the caregivers had positive feelings toward at least one aspect of caregiving for an older adult (C. Cohen et al., 2002). Some of the positive aspects included companionship, fulfillment, enjoyment, and the satisfaction of meeting an obligation. In addition, caregivers are typically not isolated in their role. One study reported that 88% of caregivers had social support from others who helped them with their caregiving role (Penrod et al., 1995).

Older adults can share intimate support in many ways other than caregiving. Some older adults, for instance, cherish playing with grandchildren, watching a sunset, feeding ducks by a pond, walking in the woods, and enjoying sexual intimacy. Playing, watching, feeding, and walking, however, are not problematic for most older adults, but sexual intimacy may present a problem.

According to studies by the Duke University Center for the Study of Aging and Human Development, the majority of older couples remain sexually active between the ages of 65 and 75. Nevertheless, sexuality increasingly focuses on warmth, sharing, touching, and intimate communication. As consumers of research, we might find it useful to pay more attention to the studies that report on individual perceptions and experiences than to those that emphasize physiological parameters and statistical frequencies on intercourse (Starr, 1985).

In one study of 800 people between the ages of 60 and 91, 36% reported that sex grew better over time, whereas only 25% said it was worse (Starr & Weiner, 1981). The sexual expression of some aging Americans, however, can get waylaid by psychological factors, such as depression, guilt, monotony, performance anxiety, and anger. Young and

old alike can be hampered by negative attitudes that reveal hostility toward the expression of sexuality in late life.

Physical limitations are yet another cause of sexual dysfunction. Arthritic pains, cardiovascular disorders, respiratory conditions, hormonal imbalances, and neurological disorders can interfere with sexual performance. In addition, various medications can lead to sexual dysfunction (Ebersole & Hess, 1990).

But the most significant cause of sexual inactivity, particularly after age 75, is widowhood or lack of opportunity. This problem is exacerbated in older adults who are not accepting of alternative intimacy practices. Family members might try to expand the options of an older adult by arranging to have a respected health professional prescribe the reading of *The Joy of Sex* (Comfort, 1972), in which the physician-author, Dr. Alex Comfort, presents a wide variety of ideas on sex and intimacy for the open-minded.

A survey conducted by AARP reported that women aged 45–59 are more tolerant about their attitudes toward sex, which should hold them in good stead as they age. These women are much more likely to approve of sex between unmarried partners and to engage in oral sex and masturbation (Jacoby, 1999).

Intimacy for older adults, however, is often as simple as touching. The importance of touching was clearly demonstrated to me when a yoga class, which had been enthusiastically received by older adults at senior centers and congregate living facilities (Haber, 1983b, 1986), was presented at 10 nursing homes (Haber, 1988a). After unsuccessful attempts to engage these nursing home residents were made during the first three classes, we decided to begin each class with massage—mostly instructor-to-resident massage (with help from student assistants), but also resident-to-resident and self-massage (see Figure 10.3).

As a consequence of this innovation, we witnessed a dramatic increase in—there are no other words that come to mind—*fun and intimacy*. The nursing home residents enthusiastically awaited the remaining classes.

This demonstration of the need for touch and intimacy brought to mind a passage from a book by Ebersole and Hess (1990): "When a group of Boy Scouts completed their performance for [a group of nursing home] residents, [an old woman] beckoned to the scout leader and said, 'Do you suppose I could hug one of those little boys?'"

TERMINALLY ILL

Initial research efforts reported that not only did peer social support improve quality of life among seriously ill persons in comparison with

FIGURE 10.3 Massage (*Easy Does It Yoga for Older People*).

persons in control groups, but also that survival rates improved as well (Fawzy et al., 1995; Spiegel et al., 1989). Subsequent research has not supported these findings (Spiegel, 2001). Peer support groups, for instance, did not prolong survival in women with metastatic breast cancer, but it did improve mood and the perception of pain (Goodwin et al., 2001).

David Spiegel is the physician whose initial research on peer support had caused the stir about prolonging survival (Spiegel et al., 1989). In response to the current wave of research studies that are less supportive of a survival extension benefit, he reminds us that, in addition to the research question not being definitively answered, there is consistent evidence of a mental health benefit. As he aptly states, "Curing cancer may not be a question of mind over matter, but mind does matter" (Spiegel, 2001, p. 1768).

Hospice Support

The philosopher Woody Allen once said, "I don't mind dying. I just don't want to be there when it happens." This sentiment may be shared by many Americans. For those who *are* willing to be there and who want an open acknowledgment of the experience surrounded by family, friends, and compassionate caregivers, there is hospice.

St. Christopher's Hospice, near London, was established in 1967 by the physician Cicely Saunders, who wrote about her experiences launching a hospice (Saunders, 1977). The St. Christopher's Hospice prototype was an independent institution that provided inpatient care for dying patients. The first American hospice, Connecticut Hospice in New Haven, was founded a few years later in 1974 and was modeled after the London exemplar.

The growth of the hospice movement since then has been tremendous. By 1990, the number of hospice programs in America had increased to 1,800; the number of terminally ill persons served, to 210,000. Six years later, in 1996, the number of hospice programs increased to 3,000, and the number of clients served almost doubled—to 400,000. In 2004, 797,000 patients had received services in one of 2,884 Medicare-certified hospices.

Hospice programs have also expanded their service sites, providing not only inpatient care, but care in private homes, nursing homes, and other settings. Hospice has evolved into a type of care, rather than the site of care. Its distinguishing characteristic is the emphasis on psychosocial and spiritual support over medical procedures. By focusing on psychosocial and spiritual support, hospice attempts to improve the mental health and quality of life of clients, even as their physical bodies deteriorate.

About 30% of Americans die in hospice settings, compared to the 70% who die in hospitals or nursing homes without hospice support. This is a significant rise in hospice-supported deaths since the early 1980s, but the statistic is also a bit deceptive. The majority of hospice patients die within 2 or 3 weeks of enrollment, and many receive services for only 2 or 3 days. This means that hospice, despite its growing usage, is lagging behind in acceptance. Hospice is being thought of by many as a place of very last resort.

There are several barriers to why more persons do not receive hospice care, or more time in hospice care. First, many physicians are still reluctant to refer patients to hospice, seeing it as an admission of defeat. Many family members also see it in the same negative way. Second, most insurance companies, including Medicare, require that the physician certify that the patient has less than 6 months to live. The problem is that only late-stage cancer tends to be that predictable. Emphysema, congestive heart failure, Parkinson's disease, and other conditions are not as predictable. Third, minority older adults are less likely to use hospice services due to fewer minority staff and volunteers, less trust of the health care system, and cultural beliefs that discourage the use of hospice care (Haber, 1999).

Finally, a major difficulty facing hospice clients and their families in the future may be the lack of a sufficient number of caregivers, especially for clients who choose to stay at home. Seventy-three percent of hospice clients are over the age of 65, and 83% are living in a private residence (Haupt, 1997). Their spouses and their adult children are often elderly themselves and physically unable to bear the exhausting burden of supporting the terminally ill in conjunction with hospice support. It is problematic whether we will be able to find sufficient numbers of volunteers and paid staff to help meet the additional social support needs of the terminally ill elderly that hospice does not provide.

Inadequate social support not only prevents some older adults from participating in hospice, but it may also characterize the situation of those who die in a hospital setting. Dying in a hospital largely means dying by oneself. According to one hospital study that used video cameras taped to patient doorways, seriously ill hospital patients were spending 75% of their day alone. Patients received an average of only 321 min a day of visits from hospital staff and family members combined (Sulmasy & Rahn, 2001).

Since 1983, Medicare has covered hospice care provided by Medicare-approved agencies or facilities for terminally ill older persons who elect it in lieu of standard hospital treatment. Most private health insurance plans and some state Medicaid programs also pay for hospice care. For more information on hospice, including where to locate the one

closest to you, contact the National Hospice and Palliative Care Organization, 1700 Diagonal Road, Suite 625, Alexandria, VA 22314; 703-837-1500; http://www.hospiceinfo.org. Another good source of hospice information is the Hospice Foundation of America, 1621 Connecticut Avenue, NW, #300, Washington, DC 20009; 800-854-3402; http://www.hospicefoundation.org.

PEER SUPPORT

Growing older presents the challenge, for many people, of coping with chronic conditions—either their own or those of loved ones. A significant number of these people are discovering the rewards of belonging to a peer support group. Such groups unite people with common concerns so that they can share their ideas and feelings, exchange practical information, and benefit from knowing they are not alone. In short, they attempt to help members learn to live as fully as possible, despite the limitations that accrue with age.

A peer support group can be organized around a health-promoting theme (e.g., weight reduction, exercise, alcohol restraint, or smoking cessation), or it can exist to cope with almost any chronic health condition—Alzheimer's, Parkinson's, cancer, arthritis, heart disease, lung disease, stroke, hearing or visual impairment, and others. One study reported that support seeking is a higher priority for persons with stigmatizing illnesses, such as alcoholism, breast cancer, and depression, than it is for less stigmatizing conditions like heart disease (Davison et al., 2000). Some peer support groups are organized around specific activities, like caregiving, or life cycle events, like widowhood.

Besides the obvious mental health focus of group activities, group members—even if organized around a specific disease—typically exchange health-promoting ideas on nutrition, exercise, stress management, smoking cessation, and moderating alcohol patterns.

Peer support groups have certain commonalties: most operate informally, meet regularly, and do not charge fees. Most distribute leadership responsibilities among their peer members, and many involve health professionals in a significant way. Peer support groups, however, can differ widely in the way they operate. Most Alzheimer's groups, for example, focus primarily on the emotional needs of caregiving members. Other groups may emphasize education, while others focus on health advocacy in the legislative arena. Some groups meet in an institutional setting with strong professional leadership that differs markedly from groups that meet in a home or church and do not include professional involvement.

Regardless of how they operate, research suggests that peer support groups benefit most members (Lieberman & Borman, 1979). This research focus may be selective, however, in that good groups may draw researchers to them. I have personally visited groups that appeared to me to be effective, but also those that appeared to be ineffective. An example of an ineffective group that I attended was when the peer leader made inappropriate comments regarding medical care and about what constitutes good coping practices.

By any standard, the self-help group movement is a phenomenon to be reckoned with. By as far back as 1979, there were an estimated 15 million participants in 500,000 different groups, and growth has been steady since then. In 1983, on the basis of a probability sample of over 3,000 households, self-help groups were the number one source of assistance to persons with mental health problems. More individuals participated in self-help groups (5.8%) than sought help from mental health professionals (5.6%) or consulted with clergy or pastoral sources (5%; Mellinger & Balter, 1983).

Fitzhugh Mullan (1992), a physician and former director of the Bureau of Health Professions, suggests to newly diagnosed patients, "Instead of simply going to that white-coated doctor and medical establishment [go] to people who have already 'been there' in some way… people who have already had the condition, or who are coping with it."

Empowerment Theories

There are a wide variety of untested theories on how peer support empowers its participants. One way is through the helper principle: Helping others brings mental health benefits upon oneself (Wheeler et al., 1998). Another way is through modeling behaviors: Giving encouragement and advice to others may help us clarify our ideas and become increasingly conscientious about our own health behaviors. Yet another way that peer support groups may empower is through the exchange of information about community resources, assistance with transportation needs, and encouragement to be assertive with health care professionals and within the health care system.

Support group members may also empower each other by validating their feelings in a sympathetic environment and by developing new behaviors, attitudes, and identities. Support group members with medical disabilities, for example, may view outsiders as temporarily able-bodied or as potential victims of future disability, thereby diminishing the superiority of others and enhancing one's own self-image and ability to accept adversity.

The peer support group may also empower its members by providing them opportunities to participate voluntarily in group advocacy activities, to share leadership functions, and to work for causes that are larger than themselves. For example, one support group in New York City, Friends and Relatives of the Institutionalized Aged, blocked the New York State Health Department's attempt to relax standards for nursing home care and pressured the New York State Department of Social Services into revising regulations to allow more residents access to nursing home beds following hospitalization.

Another example of advocacy in peer support groups was initiated by a member of the Self-Help Group for the Hard of Hearing in Omaha, Nebraska. One older man expressed frustration with a recalcitrant hearing aid provider who refused to stand behind his promise of "satisfaction guaranteed." The subsequent threat of picketing this provider's establishment by a dozen support group peers quickly led to the successful resolution of the hearing aid consumer's problem.

Age-Related Peer Support Groups

Evidence indicates that peer support groups may be especially appropriate for aging persons who need chronic care and their caregivers. Age-related peer support groups may prosper because of the declining ability to depend on younger family support persons. Declining birth rates beginning with the baby boom generation mean that fewer children and grandchildren are available to serve as support persons. Job mobility, retirement relocation, and neighborhood growth and renewal result in the dispersion of family, friends, and neighbors. And an increasing percentage of women—who constitute most of the 13 million caregivers in America—entering the workforce reduces the number of caregiving hours available to frail older adults.

Butler and colleagues (1998) also noted that older persons tended to be reluctant to seek help from mental health professionals due to a perceived stigma and a distaste for large, impersonal, and highly bureaucratic organizational structures. Conversely, some mental health professionals perceive mental health problems as irreversible in old age and are less enthusiastic about treating older adults.

In response to these societal factors I have built a peer support group component into most of my research and demonstration grants that focus on health promotion, health education, and caregiving training programs for older adults. Some participants in these peer support groups continued to provide social support and practical assistance to each other for years after the funded project—and the participation of health professionals—was terminated (Haber, 1983a, 1984, 1986, 1989, 1992b; Haber & Lacy, 1993).

April 1

Dear David,

You might already know - but the outgrowth of your classes is a continuation of socialization among nearly 20 persons. The "Prime Timers" are going strong - we meet once a month.

We are never at a loss for agenda! April 24, we will meet at Kountz Memorial Church for Fred Aliano's famous spaghetti, and a relaxation tape to improve our mental health.

Everyone sends love and we miss you. From your friends....

Jackie Devaney, secretary for the day

FIGURE 10.4 Dear Dr. Haber letter.

One health promotion class, for instance, continued to meet a decade later as a monthly peer support group. A member of the group sent me the letter that appears in Figure 10.4.

Peer support groups may be especially important for the mental health of widowed older persons. Studies have reported that widows in support groups adjust better to bereavement and undergo reductions in their depression, anxiety, social maladjustment, somatic symptoms, alcohol use, psychotropic medications, and time needed to recover former activities and develop new relationships (Constantino, 1988; Lieberman & Videka-Sherman, 1986; Vachon et al., 1980) compared to widows who do not utilize support groups. The impact of self-help groups is comparable to that of psychotherapy intervention with bereaved older adults (Marmar et al., 1988). Lieberman and Borman (1979) also noted that support groups for older widows may be underutilized. Although half the widows in the general population were over age 60, widows over age 60 represented only 20% of those who joined widowhood support groups.

Health Professionals and Peer Support

In its early years the peer support movement met with resistance from many health professionals. The groups were labeled nonprofessional or antiprofessional and were accused of potentially causing harm by "practicing medicine without a license." Although these attitudes have subsided—indeed, many professionals now initiate or are actively involved in self-help groups—they have not disappeared altogether.

Peer support groups are best labeled as *nonprofessional*, as are most family members who comprise them. Although nonprofessional, peer

support groups are rarely antiprofessional. The role of the groups is to complement the services of health professionals. A few self-helpers may rail against professionals, but the overwhelming majority do not. Self-help group members are just as likely as those who do not join self-help groups to seek, or to encourage other people to seek, professional assistance (Lieberman & Borman, 1979).

Peer support group members may help health professionals by meeting existing service gaps, uncovering new knowledge, providing the ongoing social and emotional support that health professionals cannot provide, and helping to identify individuals who need a referral to a health professional. Health professionals may aid peer support groups by improving their effectiveness through training in facilitation skills, providing current research knowledge or resource materials, providing feedback through evaluation studies, and making referrals to existing support groups or starting new groups or peer pairings (Haber, 1989).

Many health science students come into contact with mutual help groups during their educational process. Students who visit a single group, though, need to be concerned about whether they are adequately informed about groups in general. Groups differ in the unique personalities of their members, how they are run, where they are located, and so forth. What can health professionals do to educate themselves about peer support groups?

1. Visit different types of groups, especially those that represent problems that are typical of their clientele. Most groups welcome observers who want to educate themselves.
2. Volunteer to make presentations to some of these groups, allowing plenty of time for questions.
3. Refer clients to these groups, and get feedback from them on the groups' effectiveness.
4. Start a specific group if none exist currently, or arrange for peer support between two willing patients. A person who has effectively coped with a health problem for a long time may find it satisfying to advise a newly diagnosed patient; and the newly diagnosed person may appreciate firsthand experience from someone who has successfully incorporated his or her health problem into a satisfying life.

Peer Support Organizations

To find a peer support group in your community, contact your local area agency on aging. If you cannot locate your area agency on aging (because there are 655 of them, and few, if any, have "area agency on aging" as

part of their name), contact the Eldercare Locator, National Association of Area Agencies on Aging, at 800-677-1116, for assistance. Another way to locate your local area agency on aging is to access the Web site http://www.eldercare.gov., click on step 1—yourself; step 2—zip code; step 3—general information and assistance; and information on your local area agency on aging will appear.

Professional associations relating to cancer, arthritis, and a number of other medical conditions are another source of information on local peer support groups (see national professional associations in chapter 12, Community Health). One such professional association is the Arthritis Foundation, for people with arthritis and their family members who wish to meet with peers for mutual assistance in satisfying common needs and overcoming common problems. Knowledgeable professionals are readily available to assist lay leaders, who have been trained to be positive role models. Generally, groups meet monthly with sessions that include films, lectures, panel presentations, or group discussions. For individuals who prefer one-to-one support over group support, PALS, or volunteers from local Arthritis Foundation chapters, will call or visit. For additional information on support options as well as other activities and locations of local groups, contact the Arthritis Foundation, P.O. Box 7669, Atlanta, GA 30357; 800-568-4045; http://www.arthritis.org.

Some older adults may be more willing to seek counseling support from their peers than from professional counselors. Peer counseling is affordable and can provide positive role models for older adults. Santa Monica's Senior Health and Peer Counseling program is a model training and service program that has been replicated at sites throughout California. Since its establishment in 1978, many volunteer counselors aged 55 and over have been trained to provide counseling services to their peers. For more information, contact Evelyn Freeman at 310-576-2550; http://www.cchealth.org/topics/volunteer/senior_counselor.php.

Volunteers Involved for the Emotional Well-being of Seniors, another model peer counseling program, provides training to older peers to prepare them to conduct home visits to elders in need and provide additional counseling by telephone. In addition to one-to-one counseling, there are a half dozen peer-led groups. For more information, contact Cascadia Behavioral Health Care, Mt. Hood Community Mental Health Center, 400 NE 7th Street, Gresham, OR 97030; 503-661-5455.

INTERGENERATIONAL SUPPORT

Generations often live far away from one another. Grandparents and grandchildren may be both geographically and emotionally separated

from each other. If personal interactions occur infrequently, they can at least be memorable. Two travel companies specialize in intergenerational bonding: Generations Touring Company (888-415-9100; http://www.generationstouringcompany.com) and Grandtravel (800-247-7651; http://www.grandtrvl.com).

Travel experts report that the best age for traveling with a grandchild is when he or she is between 11 and 14 years old. A grandchild at that age is old enough not only to appreciate the trip but to be responsible as well. The child is also not too old to be set in his or her ways or to be totally into their own thing.

Older adults can also be a tremendous source of support to children who are unrelated to them. The Foster Grandparent Program is a national program that trains volunteers aged 60 and over to serve 20 hours a week with children in hospitals, shelters, and special-care facilities. Low-income volunteers receive a small stipend. For more information, contact the Foster Grandparent Program, Senior Corps, 1201 New York Avenue, NW, Washington, DC 20525; 202-606-5000; http://www.seniorcorps.org.

The Off Our Rockers program is a model program that I visited and was very impressed with. It trains volunteers aged 50 and over to visit for 1 hour with kindergarten through third-grade students in Dallas area schools (see Figure 10.5). For more information, contact Ann Liberty, Senior Citizens of Greater Dallas, 1215 Skiles Street, Dallas, TX 75204; 214-823-5700.

FIGURE 10.5 Off Our Rockers program.

For information and ideas about intergenerational programs and projects, contact the Center for Intergenerational Learning at Temple University. The center has a tool kit for intergenerational program planners entitled "Connecting Generations, Strengthening Communities." The tool kit consists of a handbook, video/DVD, and CD-ROM. Contact the Center for Intergenerational Learning, Temple University, 1601 North Broad Street, Philadelphia, PA 19122; 215-204-6970; http://www.templecil.org.

To order a free copy of the *Intergenerational Projects Idea Book*, contact AARP Fulfillment, 601 E Street, NW, Washington, DC 20049, and request stock number D15087.

PHYSICIAN SUPPORT

Nearly 80% of the American population visits their physician at least once a year. Older adults, however, visit or consult with a physician more than any other age group—about 13 times during the preceding year (Federal Interagency Forum on Aging-Related Statistics, 2000). Because of their unusual degree of access to the older adult population, and the fact that 85% of adults say a doctor's recommendation would motivate them to get more involved in positive health practices (Harris et al., 1989), physicians are in a unique position to occupy a key role in promoting the health of older patients.

The physicians' potential for providing targeted social support to older patients and helping them change their health behavior is not being realized (Haber, 1993a; Maheux et al., 1989; Wechsler et al., 1996; Wheeler et al., 1989). A national survey of 2,250 primary care physicians revealed several barriers to counseling patients on health topics and providing them support, including the lack of time, training, teaching materials, knowledge, and reimbursement (Kearney, 1998a; Kushner, 1995). With older patients, physicians are even less likely to discuss changing a health behavior habit than they are with younger patients (E. Callahan et al., 2000).

The Council of Scientific Affairs of the American Medical Association (*Journal of the American Medical Association*, 1990) has concluded that although physicians are well situated to play a leadership role in health promotion, they either do not act on these opportunities or are ineffectual in their daily practices. The council has therefore suggested that physician involvement with patient education should be embedded in a cost-effective framework "by using allied health personnel and providing advice in small-group settings to reduce per capita costs" (USPSTF, 1996).

There is research support for the council's recommendations to use allied health personnel and to provide advice in small-group settings. Physician counseling to change the health behaviors of older patients has demonstrated more effectiveness when supplemented by cost-effective allied health personnel (Calfas et al., 1996; Goldstein et al., 1999). Patients with similar chronic diseases who attended a group outpatient visit reported positive health outcomes (Beck et al., 1997; Clancy et al., 2003).

Using specially made physician prescription forms to refer older patients to community exercise classes that I have organized, I have involved physicians in community programs led by health education students, gerontology students, and clinical practitioners-in-training. This type of partnership has consistently led to positive health behavior change on the part of older patients (Haber & Lacy, 1993; Haber et al., 1997, 2000).

QUESTIONS FOR DISCUSSION

1. What is the difference between social support and social network? How are they similar?
2. Robert Putnam has argued that there is more social isolation in America today than in generations past. What is your opinion about this assertion, and on what is it based?
3. What are two major advantages and two disadvantages of online social support for older adults?
4. Visit a peer support group with which you have not had previous experience. Then describe your experience in neutral terms—respecting the anonymity of the participants—to an older adult who has never attended a peer support group. What is the older adult's opinion of such a group, and does it agree with your own?
5. Think about an older adult you know—a family member, friend, client—who could benefit from a strengthened social support network. What new sources of social support could be relevant to this person? How could you effectively communicate these suggestions to this person?
6. Do you think it is likely that in 15 years the majority of Americans will die with hospice support? What would it take for this to happen?
7. What are three reasons that a nursing home administrator might offer in resistance to the idea of converting his home into an Eden Alternative? How would you address each of these barriers and help change the mind of this administrator?

8. Do you believe that health professionals should concern themselves with the religious beliefs and practices of clients? If so, to what extent and how? If not, why?
9. Are you undecided on whether religious activity promotes physical health and extends longevity? Or do you think the research findings, as presented in this chapter, are persuasive in one direction or the other? Support your answer.
10. What is the single most significant barrier to sexual activity among older males? Among older females?
11. The anecdote on the importance of touch should probably have included a cautionary note: What would that be?
12. Examine one other topic in this chapter that you found interesting and has not been explored when answering the previous questions. Why did you find this interesting?

CHAPTER ELEVEN

Mental Health

> This life is only a test. If this were an actual life, you would have been given better instructions.
>
> —Myrna Neims

Of course, if it does turn out that this is our actual life, it is not surprising that, given the lack of instructions, maintaining mental health can be such a challenge.

MENTAL HEALTH AND MENTAL ILLNESS

Mental health is a multifaceted concept and difficult to define. It may include such ideas and terms as life satisfaction, the statistically normal, the ability to cope, positive functioning, finding meaning and purpose in life, self-actualization, and so forth. If mental health is defined as life satisfaction, researchers consistently report that the vast majority (about 85%) of older adults are satisfied with their lives and that older adults are at least as satisfied with their lives as middle-aged and younger adults (George, 1986). Several recent research studies support the contention that older adults may be better at maintaining good mental health than younger adults (Birditt et al., 2005; Cappeliez & O'Rourke, 2006; Carstensen et al., 2000; Kennedy et al., 2004; Mather et al., 2004; Mroczek & Spiro, 2005; Thomas, 2004).

Neither the average 50% reduction in income at retirement, nor the increases in emotional losses, physical losses, and caregiving responsibilities in later life, result in the persistent reduction in life satisfaction among most older adults. As sociologist Linda George (1986) notes, "Older adults are apparently masters of the art of lowering aspirations to meet realities" (p. 7). (Carstensen et al., 2000) adds that as time is perceived

as more finite, older adults regulate their emotional state in the present more effectively than younger adults do.

Although we need to acknowledge the mental health resiliency of older adults, we should also attach importance to the 15% to 20% of older adults who contend with mental disorders. A review of the mental health literature in the clinical and research arenas, though, leads one to believe that we pay a disproportionate amount of attention to mental *disorders,* rather than to mental *health,* perhaps because there is more of a scientific framework associated with it. Operational definitions of mental illnesses usually follow the specific criteria of the *DSM–IV–TR* (American Psychiatric Association, 2000).

Clinicians and researchers refer to the *DSM–IV–TR* guidelines or state how they are deviating from them. Critics of the guidelines argue, however, that the number of clinical characteristics that identify a mental illness, and the time parameters that are employed, are arbitrary. Nonetheless, there are no classification systems or guidelines for the components of mental health.

This chapter reflects a combination of the two perspectives: mental health and mental illness. As is true of most of the literature, I have organized chapter subheadings largely around mental illness terms. But I have also attempted to focus at least as much attention on mental health content as on mental illness. Thus in addition to examining a topic like depression, I explore life reviews; and in addition to examining Alzheimer's disease, I explore cognitive fitness. Additional mental health content is provided in other chapters, like social support in chapter 10 and community involvement in chapter 12.

One source of material on the mental disorders component of this chapter was chapter 5 of the 1999 *Surgeon General's Report on Mental Health*. The Public Health Reports of the surgeon general can be accessed through the Web site http://www.surgeongeneral.gov.

DEPRESSION

The most likely causes of depression in later life are the emotional losses of a spouse or other family support; chronic medical conditions and pain; loss of functional independence; and difficulty adapting to changing circumstances within the home, family, or living situation (Lantz, 2002). These emotional and physical losses can not only lead to depression, but depression, in turn, can lead to more physical decline (Penninx et al., 1998b).

Though the mechanism is not understood, depression increases the likelihood of mortality from cancer (Penninx et al., 1998a) and heart

disease (Frasure-Smith et al., 1995). The mortality rate for depressed patients with cardiovascular disease is twice that of those without depression (Lantz, 2002). Even mild depression can weaken the immune system in older persons if it goes on long enough (McGuire et al., 2002).

Depression also plays a significant role in suicidal behaviors, and older persons have the highest suicide rate of any age group. Older adults account for 25% of all suicide deaths, though they make up only about 13% of the general population. This elevated suicide rate, however, is largely accounted for by White men aged 85 and older. The suicide rate of this age/gender category is 6 times higher than the overall national rate (CDC, 1999).

Depression in older adults often goes undetected until it is too late. Between 63% (Rabins, 1996) and 90% (Katon et al., 1992) of depressed older patients go untreated or receive inadequate treatment. One retrospective study of older adults who had committed suicide revealed that 51 of the 97 patients studied had seen their primary care physicians within 1 month of their suicide dates. Of these 51, only 19 were even offered treatment, and only 2 of the 51 patients studied were provided adequate treatment (Caine et al., 1996).

A substantial proportion of depressed older patients receive inadequate treatment from physicians in primary care settings. And yet, according to the surgeon general's report, up to 37% of older adults in the primary care setting (and between 8% and 20% in the community) suffer from depressive symptoms. These figures are higher than those reported elsewhere (see chapter 3, Clinical Preventive Services), and some of this discrepancy may have to do with the definition of major depressive disorder versus depressive symptoms of lesser scope or intensity.

Older adults are *less* likely than younger adults to report feelings of dysphoria—sadness, unhappiness, or irritability (Gallo et al., 1994)—which is part of the standard criteria for depression in the *DSM–IV–TR*. Older adults are *more* likely to report depressive symptoms—such as the loss of interest or pleasure in activities, weight change, sleep disturbance, agitation or fatigue, feelings of worthlessness, loss of concentration, and recurrent thoughts of death or suicide—but not the scope or intensity of symptoms that qualifies them for a full-fledged major depression. And although these reported symptoms, also referred to as mild depression, are not recognized by *DSM–IV–TR*, they nonetheless are a major clinical concern for older adults and interfere with their performance of social roles and quality of life (George, 1993).

Barry Lebowitz (1995) of the National Institute of Mental Health estimated that 15% of Americans aged 65 and over suffered from serious and persistent symptoms of depression, but only 3% were reported to be suffering from the clinical diagnosis of major depression as defined by the *DSM–IV–TR*. In other words, though depressive disorders that fulfill

rigorous diagnostic criteria are relatively rare, subthreshold disorders are considerably more common, infrequently diagnosed or treated with prescribed antidepressants, and because they usually go untreated, they are likely to become chronic conditions (Beekman et al., 2002).

Detection of depression is hampered not only by the underreporting of symptoms by older patients, but by biases on the part of physicians and family members. In one study, 75% of physicians thought that depression was understandable in older persons, that is, a normal facet of old age (Gallo et al., 1999). Family members may also view the signs and symptoms of depression as so-called normal aging, when, in fact, the persistence of depressive symptoms is not normal.

Treatments for Depression

There are many modalities for the treatment of depression among older adults, including medication, cognitive-behavioral therapy, other forms of counseling, exercise, life review, and social support/pet therapy (see chapter 10, Social Support).

The treatment of depression by medication is effective for up to 80% of older adults (Schneider, 1996), a rate that is comparable to younger adults. Older adults had more frequent and serious adverse reactions than younger adults did to the earlier generation of tricyclic antidepressants (Alexopoulos & Salzman, 1998). The newer generation of antidepressants, selective serotonin reuptake inhibitors (SSRIs), have produced fewer side effects among older adults (Small & Salzman, 1998). Moreover, combining SSRIs with cognitive-behavioral therapy appears to be superior to either treatment modality by itself (Keller et al., 2000).

Cognitive-behavioral therapy is designed to modify thoughts, improve skills, and alter emotional states that contribute to mental disorders. In a 2-year follow-up study of cognitive-behavioral therapy, 70% of formerly depressed older patients no longer met the criteria for major depression and maintained treatment gains (Gallagher-Thompson et al., 1990). A study of group cognitive therapy found this treatment to be more effective with older depressed patients than with those who were randomly assigned to medication alone or to the placebo control group (Beutler et al., 1987). The addition of telephone-administered cognitive-behavioral therapy significantly improves recovery rate for depressed patients (Simon et al., 2004).

Because depression is a relapsing disease and maintenance antidepressant medication often reduces the rate of relapse, it is of interest to find out if cognitive therapy can prevent relapse as well. One study applied cognitive therapy over a 2-year period, and depression relapse was significantly reduced (Jarrett et al., 2001).

Another technique, problem-solving social skills, was taught to depressed older persons and significantly reduced symptoms of major depression (Arean et al., 1993; Ciechanowski et al., 2004). A study employing problem-solving therapy reported that it was as effective as antidepressant medication, with over 50% of patients in both groups recovering from depression (Mynors-Wallis et al., 1995).

Interpersonal psychotherapy, which focuses on grief, role disputes, role transitions, and interpersonal failings, also has been effective in the treatment of depression in older adults (Pasternak et al., 1997; Reynolds et al., 1994; Schneider, 1995). Psychodynamic therapy, which focuses on the mourning of lost capacities, promoting acceptance of losses, and addressing fears of dependency, has been successful with older depressed patients as well (Gallagher-Thompson et al., 1990; Lazarus & Sadavoy, 1996).

As noted in chapter 5 on exercise, physical activity, aerobics, and weight lifting can be effective treatments for depression, or can reduce the risk of becoming depressed, among older adults (Blumenthal et al., 1999; Lawlor & Hopker, 2001; Singh et al., 2001; Strawbridge et al., 2002). The most common form of physical activity in these studies—walking—reveals that neither high-intensity exercise nor elaborate equipment is necessary for significant results.

Many of these interventions are nonmedical in nature, and a national survey reported that between 1957 and 1996, Americans increasingly relied on nonmedical mental health interventions for mental health problems. Individuals relied more on informal social supports (chapter 10), exercise (chapter 5), and psychosocial treatments than on their primary care physicians for their mental health concerns (Swindle et al., 2000).

The Life Review Process

A life review refers to an autobiographical effort that can be preserved in print, by tape recording, or on videotape. The review is guided by a series of questions in specific life domains, such as work and family, and by memories further stimulated through a family photo album, other memorabilia, a genealogy, musical selections from an earlier time, or a trek back to an important place in one's past. It can be conducted by oneself, in a dyad, or as part of a group process. A life review is more likely to be conducted by or with an older adult who is relatively content with his or her life and not seeking therapy than it is to be used therapeutically with an older adult. Nonetheless, life reviews are believed to have therapeutic powers, and they are incorporated into a wide variety of counseling modalities (Haber, 2006).

The psychiatrist Robert Butler first extolled the benefits of the life review process to his colleagues and the public as early as 1961 as a way of incorporating reminiscence in the aged as part of a normal aging process. Dr. Butler described the life review as more comprehensive and systematic than spontaneous reminiscing, and perhaps more important in old age, when there may be a need to put one's life in order and to come to an acceptance of present circumstances (Butler, 1995).

The review of positive and negative past life experiences by older adults has enabled them to overcome feelings of depression and despair (Butler, 1974; Butler et al., 1991; Watt & Cappeliez, 2000). Another study of the life review process with older adults reported positive outcomes in terms of stronger life satisfaction, psychological well-being, self-esteem, and less depression (Haight et al., 1998).

Although life reviews are usually helpful for improving the mental health of most older adults who are seeking meaning, resolution, reconciliation, direction, and atonement, physicians and other clinic personnel find that it is too time consuming to listen to the reminiscences of older clients in this era of medical care. Health professionals can, however, provide a key role in referring older clients to appropriate forums or helping them obtain relevant life review materials.

One book, *Aging and Biography*, by the psychologist James Birren and colleagues (1996), helps guide and provide structure for the life review process by suggesting a focus on several themes, such as love, money, work, and family. Birren also suggests in another book, *Telling the Stories of Life Through Guided Autobiography Groups*, that incorporating life reviews into a small-group format can help in the retrieval of memories as well as with the acceptance of memories (Birren & Cochran, 2001).

With careful monitoring Birren noted that in his years of experience he has not had a group member report becoming depressed as a result of a life review (Birren & Deutchman, 1991). He warned, however, that persons who are already depressed or otherwise needing therapy should be under the supervision of a qualified professional.

An *ethical will* can be a component of a life review. Unlike traditional wills that transfer worldly possessions, ethical wills bequeath values through heartfelt words. Though ethical wills were first described 3,000 years ago in the Hebrew Bible, they have become increasingly popular in contemporary America among Jews and non-Jews alike. Ethical wills document the essential lessons one has learned in a lifetime or one's hopes and dreams for the future. They can be as brief or as long as one likes. Here is my ethical will, succinctly stated: I hope you cultivate and enjoy the wisdom that aging can bring.

ALZHEIMER'S DISEASE

There are no biological markers for Alzheimer's disease, except to examine by biopsy or autopsy the neurofibrillary tangles inside cells and the neuritic plaques deposited outside cells. Thus it is a disease that is difficult to diagnose. One researcher reported that only 3% of patients with mild cognitive impairment were identified as early Alzheimer's disease by general practitioners, and only 24% of those with moderate dementia (Callahan et al., 1995). Identification of Alzheimer's disease becomes easier over time. The duration of this illness, from onset of symptoms to death, averages 8–12 years.

The most common symptom in early Alzheimer's disease and other types of dementia is diminished short-term memory. Word-finding becomes difficult and may be accompanied by personality changes, emotional lability, and poor judgment (Beers & Berkow, 2000). As persons progress to intermediate dementia, their ability to dress, bathe, toilet, and perform other activities of daily living becomes impaired. Persons with severe dementia are totally dependent on others, and the ability to recognize even close family members may be lost.

Alzheimer's disease is the most common form of dementia affecting older adults, accounting for two-thirds of cases. Other types of dementia include vascular dementia, alcohol-associated dementia, infection-related dementia, and so forth. There are also reversible conditions that mimic dementia, such as hypothyroidism, depression, and vitamin B_{12} deficiency.

About 8% to 15% of adults over the age of 65 have Alzheimer's disease (Ritchie & Kildea, 1995), and the prevalence appears to double every 5 years: 1% of persons aged 60–64; 2% of 65–69; 4% of 70–74; 8% of 75–79; 16% of 80–84; and 30% to 45% of those persons aged 85 and above (Evans et al., 1989; Jorm et al., 1987). In addition to a strong correlation with age, Alzheimer's disease may be correlated with educational level: the higher the level, the lower the susceptibility (Fritsch et al., 2001).

Pharmacological therapies are not particularly effective for the management of psychiatric symptoms of dementia such as agitation, aggression, delusions, and repetitive vocalizations. Researchers suggest trying music therapy, aromatherapy, and pet therapy before prescribing drugs (Sink et al., 2005). Arlene Astell, a researcher at the University of St. Andrews in Scotland, has had good success with improving the mental health of dementia patients in institutional, community, and home settings by showing them familiar movies and photographs or by playing familiar musical selections. On the basis of the principles used in Montessori schools for children, a training program for older persons with

early-stage dementia helps them to better perform simple, but meaningful, tasks (Camp & Skrajner, 2004).

Cognitive Fitness

Warner Schaie (1997) suggests that the "use it or lose it" principle applies not only to muscles, but to brains as well. He reports that by 80 years of age, virtually everybody has some decline in mental function, but how much you slip in your 60s and 70s depends, in part, on mental stimulation. A higher level of education or greater engagement with cognitively stimulating activities over the life cycle may delay the onset of mental decline (Del Ser et al., 1999; Friedland et al., 2001; Fritsch et al., 2001; Wilson et al., 2002).

Older adults who were trained to perceive greater control over their cognitive functioning improved memory performance (Lachman & Andreoletti, 2006). A 2-week program of memory exercises, stress reduction, healthy diet, and physical exercise led to improved cognitive function (Small et al., 2006). Learning tasks, such as reading aloud and arithmetic calculation, were used successfully for cognitive improvement in dementia patients (Kawashima et al., 2005).

Older persons in Japan need no additional convincing that they can do something to improve their brain function. Nintendo came out with a video game in Japan called Brain Training for Adults in May 2005, produced a sequel in December, and by March 2006, 3.3 million copies had been sold to eager consumers. Video game players are given performance grades ranging from an optimal score of 20 to a troublesome 80.

The research studies most widely publicized in the popular media on the factors that may delay the effects of Alzheimer's disease were conducted by Snowdon and colleagues (2000) and were referred to as the Nun Study. The Nun Study has been longitudinal in design and began with the analysis of handwritten autobiographies of 678 Catholic sisters from seven Notre Dame convents across the country. From a research perspective, these types of religious groups provide the advantage of relatively uniform backgrounds to study and fewer variations in lifestyle to confound the data.

The participating sisters agreed not only to allow researchers access to their autobiographies that had been written before they took their religious vows, but to annual mental and physical examinations as well as to brain donation after death. The researchers found that lower linguistic ability in terms of ideas and sentence structure (Snowdon et al., 2000) and greater negative emotional content (Danner et al., 2001) in early life writings had a strong association with dementia and premature death in late life.

Another study of 801 older Catholic nuns and priests without dementia at baseline rated their frequency of participation in cognitively stimulating activities. The study results reported that the higher the participation in cognitively stimulating activities, the lower the risk of contracting Alzheimer's disease (Wilson et al., 2002).

In addition to a possible association between mental fitness and Alzheimer's disease, there is evidence to support a relationship between physical fitness and dementia. Dr. Marilyn Albert of Harvard Medical School and her colleagues (1995) conducted interviews with 1,192 people aged 70–79 and concluded that not only mental stimulation—crossword puzzles, reading, and discussion (vs. passive television entertainment, idle chit-chat, and doing things from rote)—may help stave off dementia and memory loss, but physical stimulation may as well. They reported that physical activities may affect the blood flow to the brain and help sustain mental faculties.

Other researchers also report a connection between physical and mental fitness. Psychologist Robert Dustman (1996) reported that after 4 months, sedentary people over age 55 who increased their aerobic capacity also increased their mental acuity. People who have been physically active between the ages of 20 and 60 demonstrated a lower risk for Alzheimer's disease in later life (Friedland et al., 2001). A study of 2,200 people over age 65 reported an association between being physically fit and delaying the onset of dementia or cognitive decline (Wang et al., 2006).

However, as noted in chapter 3, Clinical Preventive Services, cause and effect are difficult to identify from population studies that are unable to employ random assignment to treatment and control groups. It is possible, for instance, that some of the persons studied were already in the earliest stage of Alzheimer's disease—before symptoms were detectable—and that this accounted for the association with reduced linguistic ability, the negative emotional content, the lack of participation in cognitively stimulating activities, and the reduced level of physical fitness, rather than the reverse.

In addition, these types of observational studies are still without a good biological explanation as to why increased mental or physical activity may impede the development of Alzheimer's disease.

Caregiving for Dementia

Owing to the protracted period of decline with Alzheimer's disease, Alzheimer's patients are at risk for abuse by caregivers (Coyne et al., 1993), and caregivers, in turn, are at risk for depression, anxiety, and somatic problems (Light & Lebowitz, 1991). Behavioral therapy, which

helps caregivers identify, plan, and increase pleasant activities for the patient, improves the mood and depressive symptoms of Alzheimer's caregivers and care recipients alike (Teri & Gallagher-Thompson, 1991; Teri et al., 1997).

A meta-analysis of 18 studies reported that a variety of interventions reduced caregiver burden and dysphoria, including education, support, cognitive-behavioral therapy, and self-help (Knight et al., 1993). Counseling and support group participation, for instance, can alleviate the depression of spouses caring for an Alzheimer's patient (Mittelman et al., 2004). Adult day care can provide respite for caregivers of persons with dementia and reduce caregiver stress and depression (Zarit et al., 1998). Support for caregivers can delay the institutionalization of patients with dementia by almost a year (Mittelman et al., 1996).

There is a reciprocal relationship between the health of the patient, particularly the demented patient, and the health of the caregiver. The more debilitating the patient's disease, especially the demented patient who is hospitalized, the greater the mortality risk of the caregiver (Christakis & Allison, 2006). Conversely, when the caregiver of a demented patient gets increasingly depressed, it increases the psychiatric symptoms of the demented person (Sink et al., 2006). Caregiver depression is not alleviated when the patient is institutionalized (Schulz et al., 2004).

OTHER MENTAL DISORDERS

Anxiety disorder is associated with at least three of the following symptoms: restlessness or edginess, fatigue, difficulty concentrating, irritability, muscle tension, and sleep disturbance. It is a difficult mental disorder to assess in those who are elderly, and psychological testing is rarely of benefit. The most common anxiety disorders, in order of prevalence, are generalized anxiety disorder, phobia, panic disorder, obsessive-compulsive disorder, and posttraumatic stress disorder (PTSD). PTSD is expected to increase in prevalence among older adults as Vietnam veterans age.

About 11% of adults aged 55 and older meet the criteria for an anxiety disorder (Flint, 1994; Pontillo et al., 2002), and an additional 8% of older adults may have anxiety symptoms that do not fulfill the criteria for a specific anxiety disorder (Himmelfarb & Murrell, 1984). It should be noted, however, that these types of prevalence rates for anxiety disorders vary greatly and have been the source of controversy (Smyer & Qualls, 1999).

Treatment with medications for anxiety disorders tends to be similar between older and younger patients. Benzodiazepines and other anxiety medications, however, are marginally effective in treating chronic anxiety

in older patients. For anxiety associated with depression, an antidepressant is often effective. For anxiety associated with mild dementia, a more structured environment may alleviate symptoms. For anxiety associated with bereavement, cognitive behavioral therapy or an exercise program may be of benefit.

Schizophrenia, characterized by delusions, hallucinations, paranoia, disorganized speech, catatonic behavior, and affective flattening, can extend into or first appear in later life. Prevalence of schizophrenia among older adults, however, is only 0.6%, about half the rate for the population aged 18–54. Pharmacological treatment of schizophrenia in late life is challenging as the previous generation of antipsychotic medications have had a high risk of persistent and disabling side effects. The newer generation of antipsychotics, like clozapine and risperidone, may be somewhat more effective with older adults than the earlier neuroleptics.

Alcohol abuse and misuse of medications are also considered to be in the category of mental disorders, but these two topics are examined in chapter 9, Selected Health Education Topics. A related mental disorder, illicit drug abuse, rarely occurs among older adults, affecting less than 0.1% (Regier et al., 1988).

Finally, there are compulsive behaviors that are being labeled as mental disorders and treated with the new generation of antidepressants: SSRIs. These behaviors include such activities as gambling addiction, kleptomania, shopping addiction, and social phobia. Some argue that these are legitimate mental disorders that should be treated medically. Others contend that these behaviors are everyday maladies that are escalated into medical problems by drug company marketing.

With the advent of Prozac, the most popular SSRI, the threshold has been lowered for what constitutes an emotional disorder that needs medication. Prescriptions for the new generation of antidepressants tripled during the 1990s, and sales for these types of drugs doubled between 2000 and 2005. An increasing percentage of SSRI drugs are directed toward compulsive behaviors.

INSURANCE COVERAGE

Unequal Medicare coverage is provided for mental illness versus physical illness. Medicare patients pay 50% of Medicare-approved amounts for most outpatient mental health care but only 20% for medical services for physical conditions. Medicare also imposes a 190-day lifetime limit on inpatient psychiatric hospital care but no cap on care in a general hospital. In addition, Medicare carriers automatically flag any claims for Alzheimer's disease as subject to the 50% out-of-pocket policy, even

when the care warrants 80% coverage. A government memorandum to correct this bias against Alzheimer's disease did not seem to be working (Aston, 2002).

Medicare's Part D coverage of outpatient medication is especially useful for the treatment of mental illness, given the effectiveness of SSRI drugs and their significantly higher cost due to patent protection. The importance of being able to afford mental health medications is apparent when you consider that the treatment of choice for mental illness has shifted from counseling to medications. Between 1987 and 1997, for instance, the proportion of depressed individuals who were treated with antidepressant medications increased from 37% to 75%, whereas the proportion that received psychotherapy declined from 71% to 60% (Olfson et al., 2002).

Older Americans account for only 7% of all inpatient mental health services, 6% of community-based mental health services, and 9% of private psychiatric care (Persky, 1998). Clearly there are patient and provider barriers to this care, most notably the mistaken belief that mental health problems such as depression are natural or inevitable conditions of older age. Equally clear is that Medicare's lower reimbursement for mental health conditions is a barrier for older Americans in terms of access to mental health services.

Moreover, the disparity in Medicare reimbursement between physical and mental treatments serves to further the stigma surrounding mental illness in older adults, particularly among older men and minority groups (Unutzer et al., 2003). The disparity also fuels the misperception that mental illness cannot be treated as effectively as physical conditions in older adults. However, as noted by the *Surgeon General's Report on Mental Health*, when properly diagnosed and treated, 65% to 80% of depressed older adults improve with medication, psychotherapy, or a combination of both—a success rate higher than many current common medical treatments for nonpsychiatric illnesses.

CHRONIC STRESS

Harvard physiologist Walter Cannon coined two terms, *homeostasis* and *fight or flight*. Homeostasis refers to the body's attempt to preserve the constancy of its internal environment. When cold, for instance, the body shivers to generate heat, and when hot, it sweats to reduce heat.

When a challenge produces fear, homeostasis is disrupted, and the organism prepares for flight or fight. Adrenaline is released, and there is an increase in heart rate, respiratory rate, blood pressure, and blood flow to the brain and large muscles of the extremities.

Fight or flight, in response to a physical challenge, prepares the organism to move more quickly, see better, think better, and reduce blood loss. In modern times, however, stress is more likely to be emotional than the reaction to a physical threat. Fighting or running away is often inappropriate. If we are pressed for time and trapped in big-city traffic, for instance, there is nothing to fight and no way to flee. The fight or flight response can be harmful, both physically and emotionally.

Stress research began with Hans Selye. His *general adaptation syndrome* consisted of three stages: (a) an alarm reaction, which mobilizes the body's resources; (b) a stage of resistance, in which the body tries to adapt to the stressor; and (c) a state of exhaustion. The trapped commuter, who can neither fight nor flee, is vulnerable to being in a prolonged state of resistance. This prolonged stress response, which is harmful to health, may produce pathologic changes, including hypertension, heart disease, arthritis, asthma, and peptic ulcers.

Chronic stress contributes to depression and anxiety disorders and, with aging, will interfere with normal memory processing (Small, 2002). Several days of exposure to high levels of the stress hormone cortisol leads to memory and learning impairment (Newcomer et al., 1999).

Measurement

Perhaps the most widely known stress measurement tool is the Social Readjustment Rating Scale (SRRS) developed by Thomas Holmes and Richard Rahe (1967) at the University of Washington School of Medicine. The SRRS ranked 43 life-change events according to a score derived from more than 5,000 interviews over 2 decades.

Men and women of different socioeconomic status, age, and marital status were asked to assign numeric values higher or lower than an arbitrary score of 50 for marriage. Ten of the top 15 scores related to the family, with death of a spouse receiving the top score of 100. Surprisingly, the ratings of events were consistent across ethnicities (African Americans and Mexican Americans) and countries (Europe and Japan).

Holmes and Rahe (1967) correlated the ratings of life-change events over a 12-month period with health risk. Thirty-seven percent of the individuals who scored under 200 underwent an appreciable change of health, compared to 79% of those who scored over 300.

An interesting facet of the SRRS scale is its validity despite its mechanistic approach to life events. The instrument does not, for instance, determine whether the individual's perception of a life event is stressful or not. Thus the death of a cantankerous and burdensome spouse may be met with relief, while a codependent spouse may experience hysteria.

Researchers have been looking for ways to make stress-measuring instruments more precise and powerful by weighing individual perceptions of stressful events. Lazarus and Folkman (1984) have focused on daily hassles (e.g., weight gain, rising prices, losing things) and have found stronger statistical associations with health outcomes than those obtained by merely counting life events.

Over the past decade, it has also become clear that the Holmes and Rahe (1967) scale is not responsive to the life events of the later years and that many of the items included in the scale are unlikely to occur in late life. About a dozen age-specific scales have been in development since (Chiriboga, 1992).

Perspectives

Stress can be viewed from three perspectives. The first is external, focusing on threatening stimuli from the environment. Measuring stress from this perspective may consist of counting stressful events like divorce and widowhood (Holmes & Rahe, 1967) or calculating hassles, such as being stuck in traffic (Lazarus & Folkman, 1984), that have taken place within the previous year.

A second perspective on stress focuses on internal forces, such as our psychological response to stressors. Being stuck in traffic, for instance, can produce anger, anxiety, and frustration. Or we can perceive the traffic delay as an opportunity to converse with our companions or listen to a few additional audiotapes.

The fact that we do not all perceive events in the same way is illustrated by the well-known picture in Figure 11.1. Do you see a young woman or an old woman? Is it difficult to shift your perception between the two?

From the third perspective, stress is viewed as a transactional process, an interaction between forces in the environment and our perception. For example, because we are in a hurry, traffic triggers a stress response. Our anger and frustration then escalate our stress. In this transactional process, however, we can deliberately take a pause from our escalating stress level and choose to do a deep-breathing exercise. Thus we can attempt neither to fight nor flee, but to flow.

Psychoneuroimmunology

Over the past 2 decades, researchers have found a number of physiological linkages between the nerve cells of the brain and the immune system (Goleman & Gurin, 1993). These nerve cells connect the brain with the spleen and other organs that produce immune system cells. When the

FIGURE 11.1 What do you see?

brain perceives, for example, a stressful event, immunological changes result, such as a decline in the cells that fight tumors and viral infections.

Unfortunately for stress researchers, many other factors can also suppress immunity, for example, lifestyle habits (alcohol consumption, smoking, nutritional habits, and so on) and the overall status of the immune system. This latter variable is particularly relevant for older adults because the robustness of the immune system declines with age.

One study, which examined the relationship between lifestyle stress and the immune system of older adults, compared 69 older caregivers of spouses with Alzheimer's disease to a matched sample of older adults living in the community. During this 13-month study, the chronic stress of caring for a family member with dementia led to the reduced function of the immune system of the older caregivers, which, in turn, led to more frequent respiratory tract infections compared to the matched sample in the community (Kiecolt-Glaser et al., 1991).

Another study reported that the brain's perception of mental stress may be a better predictor of future heart problems than physical stress recorded

through conventional treadmill testing with heart function measured on an electrocardiogram. Persons who responded adversely to mental stress testing (which included reactions to engaging in public speaking or solving math problems on a deadline) were 2–3 times more likely to suffer a heart attack or progressive chest pain in the future (Jiang et al., 1996).

STRESS MANAGEMENT

Although many Americans report that stress has had some effect on their health, it is less likely to be reported by older adults (about one-third) than younger adults (about one-half). Similarly, in response to the broader question of how much stress they feel in their daily lives, older adults were less likely to report considerable stress (about one-half) than younger adults (almost two-thirds; American Board of Family Practice, 1987).

It is possible that older adults manage their stress better than do younger adults, either through managing their perceptions of stress better, more frequent prayer, or the practice of other informal stress management techniques. One study reported that stress changes with age and that older adults get better at managing it (Almeida et al., 2002). Young adults focus more on tension in relationships; middle-aged adults are overloaded by demands on them; and older adults primarily face health problems. Almeida and colleagues (2002) reported at the American Psychological Association conference in Chicago in August 2002 that the older adults in their sample reported more stress-free days than middle-aged and younger adults.

It is also possible that older adults are less willing to report stress. They may find it more of a stigma than do younger adults and are reluctant to admit to it. Or they may be less able to recognize it, either due to lack of knowledge about what stress is or because the stress is masked by depression, which older adults are more likely to exhibit symptoms of.

Regardless of age, many adults report a great deal of stress from time to time, and the great majority of them consciously take informal steps to control or reduce it. Only a few, however, try formal stress management techniques. The most popular stress management measures are the informal strategies of physical exercise, psychological denial, and avoidance (Taylor & Kagay, 1985).

Regarding exercise, a group of older adults with knee arthritis significantly lowered their depressive symptoms as a consequence of aerobic exercise. The subjects also reduced their disability and pain and increased their walking speed (Penninx et al., 2002). Another study used a variety of more formal stress management techniques (anger coping, muscle relaxation, deep breathing, etc.) and individualized them according to the

needs and preferences of subjects with high blood pressure. The researchers reported that blood pressure level was reduced through stress management, in comparison to a control group, where blood pressure was unchanged (Linden et al., 2001). Another study implemented a group stress management program and reported clinically significant benefits for patients with type II diabetes (Surwit et al., 2002).

One study examined the effects of journal writing on stressful experiences and subsequent symptom reduction in patients with asthma or rheumatoid arthritis (Smyth et al., 1999). This randomized trial reported significantly greater symptomatic improvement (lung function and disease activity) in the intervention groups compared with the control groups that wrote about emotionally neutral topics. It is possible that the participants' immune function improved after they unburdened themselves or that they learned ways to cope better with the current stresses in their lives after they completed the journaling exercise.

Other controlled studies have demonstrated the short-term benefits of journal writing on patients with high blood pressure (McGuire et al., 2005) and patients with fibromyalgia (Broderick et al., 2005).

Journal writing is a popular method for stress management and personal growth. For information on techniques and workshops, contact the Center for Journal Therapy at http://www.journaltherapy.com; 888-421-2298. Or contact the Progoff Intensive Journal Program for Self-Development at http://www.intensivejournal.org; 800-221-5844.

A Positive Attitude

The Harvard Study of Adult Development is a 60-year longitudinal study of 824 persons from adolescence to late life, conducted for the purpose of learning about successful aging (Vaillant, 2002). In addition to looking at privileged men and women from Harvard University and from California, the study examined healthy aging among inner-city men (Vaillant & Western, 2001). The psychiatrist George Vaillant, director of the study, concluded that good mental health with aging involves a capacity for gratitude, forgiveness, and love; a desire to connect with people and replenish social networks; an interest in play and creativity; and a commitment to lifelong learning.

A longitudinal study of 23 years' duration reported that older individuals with more positive self-perceptions of aging lived 7.5 years longer than those with less positive self-perceptions of aging (Levy et al., 2002). This advantage remained after controlling for a number of potentially confounding variables. In other words, a positive perception of aging demonstrated a better survival outcome, regardless of whether participants were young-old or old-old, men or women, higher income or lower income,

lonely or not, or better or worse off in functional health. This finding was not only robust, but appeared to be a more powerful predictor of longevity than blood pressure level, cholesterol level, smoking, and exercise.

In 1991–1992, the psychologist Leonard Poon of the University of Georgia interviewed about 100 centenarians through the Georgia Centenarian Study and concluded that mental health is more important to survival than the longevity of your parents or what you have eaten over a lifetime. Poon reports that survivors over the age of 100 appear to be optimistic, to be passionately engaged in some activity, and to have the ability to adapt to repeated losses over time.

Alice Day's (1992) interviews of American women in their 70s and 80s uncovered similar qualities among women who were aging successfully: They tended to have a positive attitude, to stay involved, and to foster social support. These factors can even override barriers to physical health and threats to financial well-being.

The epidemiologist Glen Ostir and his colleagues reported that positive affect predicted subsequent functional independence and survival after a major health event among older Mexican Americans (Ostir et al., 2000) and among older African Americans and Whites (Ostir et al., 2002). Scheier and colleagues (1999) reported that optimism predicted a lower rate of rehospitalization after coronary artery bypass graft surgery.

Conversely, negative attitudes like anger, pessimism, and gloomy self-perceptions of aging can lead to a host of unpleasant consequences. A high level of anger is associated with subsequent heart disease (Chang et al., 2002; Williams et al., 2001) and stroke (Ostir et al., 2001; Williams et al., 2002b). A 30-year follow-up study of 723 patients revealed that those with pessimistic personalities had a 19% increased risk of mortality (Maruta et al., 2000). And a 23-year longitudinal study of older adults reported that negative self-perceptions of aging will diminish life expectancy (Levy et al., 2002).

The protective effect of a positive attitude on physical health may work in a variety of ways. Positive emotions can work directly on physiologic homeostasis and lowering blood pressure (Ostir et al., 2006) or on enhancing a person's social support system, stimulating motivation for self-care and adherence to treatment regimens, or on engaging in more social and physical activities that help to maintain the fitness level necessary for higher level functioning (Penninx, 2000).

The Placebo Effect

The placebo effect is often referred to as the power of positive thinking. *Placebo* is Latin for "I shall please" and refers to a dummy substance or treatment that is designed to look like the real thing. People may respond favorably to a sham substance or treatment if they do not know it is

phony and if they think it is a credible attempt at helping them. For example, patients who believe they are taking painkillers—with doses that contain no medication—release chemicals in their brain that relieve pain (Zubieta et al., 2005).

Placebos provide a standard of comparison for evaluating a new drug or intervention, which must then significantly outperform the placebo. Among 183 subjects taking a placebo pill for high blood pressure, for instance, 25% achieved normal blood pressure (Materson et al., 1993). A positive response to a placebo was obtained from 45% of those who were depressed less than a year and from 23% of those who were more chronically depressed (Khan et al., 1991). The power of the placebo is frequently extolled in health newsletters (e.g., "The Power of the Placebo Effect," 2000; "The Surprising Power of Placebos," 2000).

Then along came two contrarian Danish researchers to dispute the conventional wisdom (see the section on mammograms in chapter 3, Clinical Preventive Services, for another attempt by the same Danish researcher, Gotzsche, who relishes a dispute with conventional wisdom). The two researchers examined 114 studies and concluded that, with the exception of subjective outcomes, particularly pain outcomes, there was no such thing as a placebo effect (Hrobjartsson & Gotzsche, 2001). They argued that, instead of positive attitudes producing positive physical results, spontaneous remission—which occurs naturally in many diseases—accounts for the placebo effect.

This single study is not the definitive word on the power of the placebo. If it is substantiated, though, there is an upside to debunking the placebo effect as well as the purported medical advantages in general that are associated with a positive attitude: Those who do not achieve successful medical outcomes do not need to feel guilty about their inability to stimulate the placebo effect.

The Botox Alternative

The Botox (botulinum toxin type A) craze came along in 2002 when the Food and Drug Administration approved use of the drug to smooth out aging faces. Small doses of the toxin are injected into the forehead every few months to temporarily paralyze the injected muscle. The drug is expensive, requires repeated application, may have adverse side effects, and can make one look more zombie-like than youthful, but that has not discouraged the generation that has already accepted hair transplants, breast augmentation, collagen injections, chemical peels, and liposuction.

Botox and the cosmetic revolution to keep us looking young were on my mind when I read an essay by Gwenda Blair (2001) called "The Many Faces I See." She wrote about the *matryoshka* doll that comes from

Russia: a wooden doll that is hollowed out, with a smaller version of the doll inside, which is also hollowed out with a smaller version inside, and so forth. Ms. Blair wrote about feeling like a *matryoshka*, with all her earlier *me's* inside and fitted into one another. The rest of the world may only see the wrinkled older woman on the outside, but she knew all the earlier selves still inside her.

Instead of making her external face look younger, Ms. Blair accepted herself as a little girl, a young mother, a middle-aged woman, and an older woman—all rolled into one. Instead of ignoring the old lady with wrinkles and gray hair, she and society can admire the woman who not only knows what it is like to be an old person, but also knows what it is like to be a child, a teenager, a parent, a worker, a mortgage holder, a grandparent, and a retiree.

I have heard strong arguments that mental health can improve with age if those who so choose change their looks to be more youthful in their appearance. I make the opposite argument: that mental health can improve more with age if we accept the appearance of old age and all that goes with it, and feel positive about it. This argument would be strengthened, I admit, if there was more societal support of a new genre of elder images, where positive visions of older adults are portrayed frequently in movies, television, theater, books, and popular lyrics. Instead, the title of one scholarly article says it all: "The Aging Woman in Popular Films: Underrepresented, Unattractive, Unfriendly, and Unintelligent" (Bazzini et al., 1997).

Instead of William Shakespeare's description of old age as "second childishness and mere oblivion / sans teeth, sans eyes, sans taste, sans everything," artists could discover and reinforce the image of old age as one that embodies more than physical diminishment, but wisdom, joyfulness, spirituality, resiliency, and integrity.

Integrity versus despair is the challenge of the last stage of Erik Erikson's stages of psychosocial development (Erikson et al., 1987). The task of the elder at this stage of existence is to reflect on one's life, to review experiences and accomplishments, and to integrate these memories into the belief that one has led a meaningful life. Those who accept the aging process and find integrity rather than despair in late life may not only find it personally satisfying, but they may also become positive role models for succeeding generations.

Or there is always the botox alternative.

MENTAL HEALTH AND AGING RESOURCES

The Geriatric Mental Health Foundation was established by the American Association for Geriatric Psychiatry to eliminate the stigma of mental

illness and treatment and to promote healthy aging strategies for older adults and their families. Contact the Geriatric Mental Health Foundation, 7910 Woodmont Avenue, #10050, Bethesda, MD 20814; 301-654-7850; http://www.gmhfonline.org.

The National Alliance on Mental Illness provides information on mental illness and its treatment, including the publication *Mood Disorders, Depression and Manic Depression*. Referrals are also made to local support groups. Contact the National Alliance on Mental Illness, Colonial Place Three, 2107 Wilson Boulevard, Suite 300, Arlington, VA 22201; 800-950-6264; http://www.nami.org.

For additional information on mental illness and mental health, access the following two Web sites: the National Institute of Mental Health (http://www.nimh.nih.gov), which provides literature and other resources designed for older adults; and the National Mental Health Association (http://www.nmha.org), which provides information on advocacy, education, support groups, research, and service.

AARP has, unfortunately, discontinued two national programs with mental health benefits: the Reminiscence Program for facilitating life reviews and the Widowed Persons Service, a peer support program of trained volunteers who assisted the newly widowed to recover from their loss. While these programs are no longer offered on a national basis, they may be available through state AARP offices. To find out how to access your state office, contact AARP, Social Outreach and Support, 601 E Street, NW, Washington, DC 20049; http://www.aarp.org.

AARP's primary booklet for the newly widowed is called *On Being Alone* (D150). Both the English and Spanish versions can be ordered by calling toll-free 888-687-2278. A list of other AARP mental health resources, including organizations, publications, and audio programs, is available free of charge from AARP Fulfillment, Mental Health/Wellness/Older Adults Resource List, 601 E Street, NW, Washington, DC 20049.

Fostering creativity in older adults can also improve their mental health:

> There is some degree of creativity in every person, and the [health practitioner's] function is to assist the aged person to recognize and believe in his or her full potential. Products of creativity are less important than fostering a creative attitude. Curiosity, inquisitiveness, wonderment, puzzlement, and craving for understanding are creative attitudes. [It is possible to help older persons] to break free. (Ebersole & Hess, 1990)

To obtain information about the following creative arts therapies or to identify certified therapists near your location, contact the following nonprofit organizations: the American Music Therapy Association (301-

589-3300; http://www.musictherapy.org), the American Dance Therapy Association (410-997-4040; http://www.adta.org), the American Art Therapy Association (888-290-0878; http://www.arttherapy.org), and the National Association for Poetry Therapy (866-844-6278; http://www.poetrytherapy.org).

A monograph by McMurray (1990) provides a good source of information for sparking creativity in older persons. Ebersole and Hess (1990) refer to several other guides that encourage creative expression in older adults, including art, music, poetry, humor, and self-actualization. Koch's (1977) account describing how he taught poetry to nursing home residents is a particularly enjoyable and useful resource guide. For an assortment of mental health treatment protocols used by nurses in a variety of practice settings, see Kurlowicz (1997).

The National Center for Creative Aging, founded by Susan Perlstein in 2001, is a clearinghouse throughout the United States for information, research, and training on arts and aging. The mission of the center is to promote creative expression and healthy aging. For additional information, go to the National Center for Creative Aging, 138 S. Oxford Street, Brooklyn, NY 11217; 718-398-3870; http://www.creativeaging.org.

The Center on Aging, Health and Humanities, headed by Gene Cohen, MD, has a focus on studying and promoting creativity and aging. Contact George Washington University, 10225 Montgomery Avenue, Kensington, MD 20895; http://www.gwumc.edu/cahh.

The Center for Elders and Youth in the Arts focuses on intergenerational educational programming and community presentations in the visual and performing arts: Institute on Aging, 3330 Geary Boulevard, San Francisco, CA 94118; http://www.ioaging.org.

For brain healthy workshops and related information and resources, contact the Alzheimer's Association's Maintain Your Brain program (http://www.alz.org/maintainyourbrain/overview.asp), the American Society on Aging's Strategies for Cognitive Vitality (http://www.asaging.org/cdc), or AARP, in conjunction with the Dana Alliance for Brain Initiatives, Brain-Health booklets (http://www.aarp.org/health/brain/program/staying_sharp_booklets.html).

The North Carolina Center for Creative Retirement promotes lifelong learning and community service opportunities for retirement-aged individuals: The University of North Carolina at Asheville, Reuter Center, CPO #5000, One University Heights, Asheville, NC 28804; http://www.unca.edu/nccr.

Civic Ventures promotes the engagement of older adults in civic life in a way that not only benefits society, but the mental health of older adults. Contact Civic Ventures, 139 Townsend Street, #505, San Francisco, CA 94107; http://www.civicventures.org.

QUESTIONS FOR DISCUSSION

1. Given the emotional and physical losses that accumulate in late life, why is depression not considered a normal part of the aging process?
2. Have you ever conducted a life review with an older adult? If you have, how did you feel about doing it? If you have not, why have you not done it with a relative or other important person in your life, and how do you feel about not having done one?
3. Find additional reading material on conducting a life review, and then conduct a life review segment (e.g., the development of a hobby, early work career, childhood holiday celebrations, etc.) with an older adult. What did you learn about the aging process, or the impact of historical events on that person's life, that was most important to you?
4. Do you expect research to conclusively prove that cognitive stimulation is an important factor in postponing vascular dementia? Alzheimer's disease? Why do you believe that?
5. Aside from research projects, is it ethical to give someone a placebo? Why do you believe that?
6. Do you think continued research will demonstrate that you can manipulate a positive attitude and extend longevity? Or do you think this trait cannot be manipulated for the purpose of extending longevity? Explain your answer.
7. Do you believe older adults who deny stress in their lives would be better off if they acknowledged their stress? Explain your answer.
8. Do you agree with the assertion that stress is primarily a matter of perception? Why?
9. Is trying to look younger in old age an ageist reaction to a natural process, or can it be an effective way to cope in a youth-oriented society? Explain your answer.
10. Most people argue that coverage for mental illness should be equivalent to the coverage for physical conditions. As a politician (or insurance executive), though, how would you address this disparity, knowing that most people do not want their health insurance rates to go even higher?
11. Eleanor Roosevelt once said, "Beautiful young people are accidents of nature, but beautiful old people are works of art." What do you think she meant by that?
12. Examine one other topic in this chapter that you found interesting and has not been explored when answering the previous questions. Why did you find this interesting?

CHAPTER TWELVE

Community Health

COMMUNITY ORGANIZATIONS

Unless they live in rural settings, older persons are likely to have a wide array of community-based health-promoting programs, resources, and services available to them. Moreover, neither frailty nor disability automatically prevents older adults from gaining access to them. Programs and services for older adults are housed at religious institutions, senior centers, AARP chapters, hospitals, and other community sites, and they are becoming increasingly responsive to the health needs and limitations of older adults.

A logical place for older persons to begin to locate relevant community health resources is the local area agency on aging (AAA). These agencies are responsible for providing aging information as well as coordinating the more than 20,000 organizations around the country that provide services for the aging. Unfortunately, the 655 AAAs do not have uniform names and can be difficult to locate in a telephone directory. The National Association of Area Agencies on Aging provides current local AAA information through its *Directory of State and Area Agencies on Aging* (1730 Rhode Island Avenue, NW, #1200, Washington, DC 20036; 202-872-0888).

Senior Centers

Older adults seek health information more actively than younger adults. A major source of information for about 20% of older adults is the neighborhood senior center. A national survey revealed that every one of the more than 10,000 senior centers around the country provided some type of health education or screening program (Leanse, 1986). In addition, most senior centers provided a combination of general health education seminars, exercise and nutrition classes, self-help groups, self-care programs, or referrals to appropriate health services.

Senior centers exist in almost every community, provide a broad spectrum of health education offerings, and many have good connections with the medical community. More than 80% are linked to physicians, hospitals, or public health departments (Leanse, 1986).

According to one survey, though, health education and health promotion opportunities are not primarily associated by community health practitioners with senior centers (Campanelli, 1990). Community practitioners who were asked where they would locate information on health education or health promotion for older adults identified a wide array of sites, giving no specific emphasis to senior centers. Identified sites included state and local health departments, institutes of higher education, hospitals, public service agencies, and voluntary organizations.

Nevertheless, many of the senior centers around the country are the best place to go to access health-promoting activities, and I provide summaries of a few of the innovative senior centers that I visited in Texas. The Maurice Barnett Geriatric Wellness Center offered a wide array of health programs, including health assessments, medical screenings and immunizations, health education, caregiving programs, and support groups. In addition, this senior center is unique in three ways: (a) It identifies itself as a comprehensive wellness center to the community; (b) it provides a leadership role for older adults on its board of directors; and (c) it matches trained volunteers to offer short-term practical support to older adults discharged from a medical center. Contact Maurice Barnett Geriatric Wellness Center, 401 W. 16th Street, #600, Plano, TX 75075; 972-941-7335; http://www.gwccc.org.

Retirees not only crafted the native stone wall outside of the Comal County Senior Citizens Center, but also disassembled, hand-sanded, and reassembled into squares thousands of inch-long pieces of wood for the parquet tile floor. Retirees continue to make contributions to this senior center, including the operation of a thrift shop that provided considerable revenue for center activities. It also has an excellent fitness center. Contact Comal County Senior Citizens Center, 655 Landa Street, New Braunfels, TX 78130; 830-629-4547; http://www.nbsenior.org.

The Galveston County Multipurpose Senior Center offers a variety of health programs, including exercise and country-western dance classes. The most innovative aspect of this senior center was an effort a dozen years ago to develop leadership among the attending older adults through a senior leadership training program (Grasso & Haber, 1995). This effort phased out after a few years. For more information, contact Galveston County Multipurpose Senior Center, 2201 Avenue L, Galveston, TX 77550; 409-762-6624.

One place I have not visited is the Lakeview Senior Center in Irvine, California, or its sister senior centers in Orange County, California.

These centers are trying out new ideas for a new cohort of seniors. Some of these centers are open at night for everything from kickboxing and jazzercise to computer classes. Once designed for bingo, the new senior centers are seeking more progressive programming, such as wine-tasting trips, Sunday afternoon tea dances, and evening yoga classes. One Orange County senior center is adding wireless Internet connections to appeal to the high-energy, high-tech interests of the new senior. Contact the Lakeview Senior Center, 20 Lake Road, Irvine, CA 92604; 949-724-6900; http://www.cityofirvine.org/depts/cs/commparks/cparks/cparks_lakeview.asp.

Religious Institutions

The church, synagogue, or mosque has the potential to be one of the most important sources of health-promoting programs in the community. Congregational members share values, beliefs, traditions, cultural bonds, and the trust and respect that these engender. Among minority groups, religious institutions may be the only community organizations deemed trustworthy of providing health information and social support (Davis et al., 1994; Thomas et al., 1994; Williams, 1996). In addition, religious institutions are able to connect with hard-to-reach older adults, who may be isolated from other sources of health care.

Religious institutions are often called on to provide a wide array of educational, counseling, and social support services for those persons who are least served by health care institutions: minorities and the poor. It would entail only a small additional step—collaboration with health professionals—for many of these institutions to be able to implement medical screenings and health education programs. Yet the immense potential contribution of religious institutions toward the health promotion of congregation members remains substantially untapped (Neighbors et al., 1995; Wind, 1990).

More than 80% of Americans past age 65 claim their religious faith is the most important influence in their lives (Moberg, 1983). Of the 5 million persons aged 65 and over who do unpaid volunteer work, fully 43% perform most of their volunteer work at religious organizations. These older volunteers tend to put in more hours per week and more weeks per year than do younger volunteer workers (U.S. Department of Labor, 1989). Many of these older volunteers could be trained to provide health-promoting services to their peers.

Health programs implemented at religious institutions have contributed to the health of congregation members in a variety of ways. These programs, for example, have improved mammography adherence (Duan et al., 2000), reduced hypertension (Smith et al., 1997), increased fruit and

vegetable intake (Resnicow et al., 2001), decreased weight (Kumanyika et al., 1992), and produced an array of other physical and mental health benefits (Randsdell, 1995).

Many religious institutions have broadened their mission to include mental health–promoting services. A survey of 2,500 self-help groups, for instance, revealed that 44% of these groups had met in churches or synagogues, more than had met in any other community site (Madara & Peterson, 1986).

Finally, there is the growing role of parish nurses. Typically, parish nurses are members of a congregation who are either volunteers or salaried part-time and who engage in health screening, health counseling, grief support groups, and community referrals. Though most parish nurses report prior work experience in health settings, one survey reported that only 50% had at least a baccalaureate degree in nursing (McDermott & Burke, 1993). Many parish nurses focus on the relation between faith and health, and their congregational clients are disproportionately over the age of 55.

The Shepherd's Centers of America

The Shepherd's Centers of America is a national association of interfaith organizations, typically housed in local neighborhood congregations, that offer older persons an array of educational courses, services, and resources with a wellness approach. Formed in Kansas City, Missouri, in 1972 by Dr. Elbert Cole, this organization originally consisted of six men who delivered hot meals to seven homebound women. In 2005, the organization had 75 centers in 21 states, with leadership primarily in the hands of older persons. The center reached more than 200,000 persons and provided health education, life enrichment and life review classes, caregiver seminars, bereavement support, exercise and nutrition classes, medical screenings, medication seminars, peer support groups, transportation services, respite care programs, advocacy, and other activities.

The empowerment philosophy of the Shepherd's Centers is embodied in the saying "no one should do for older persons what they can do for themselves." For information on how to join or start a program, contact the Shepherd's Centers of America, One W. Armour Boulevard, #201, Kansas City, MO 64111; contact Dr. Elbert Cole at 816-960-2022 or 800-547-7073, or go to the Web site http://www.shepherdcenters.org.

Other National Resources With a Focus on Religion and Aging

Starting in 1983 as the Interfaith Volunteer Caregivers Program (Haber, 1988b), and continuing in 1993 as the Faith in Action (FIA) program,

this Robert Wood Johnson Foundation initiative supports community projects that are designed to expand and support the caregivers of the nation's elders. FIA shares a step-by-step approach to link members of multiple congregations in a specific geographic area into a single association in order to meet specific caregiving needs of older congregation members and others in need. The goal of the project is to enhance the quality of life of older persons in the community who want to avoid premature institutionalization.

With the aid of start-up grants from the Robert Wood Johnson Foundation, along with continued support and advice, about 1,000 interfaith volunteer caregiver programs were implemented nationwide. In 2005, grants to help launch new congregation-based caregiver programs were discontinued. FIA has since partnered with AARP for another caregiver initiative. To obtain more information, contact Faith in Action, Wake Forest University School of Medicine, Medical Center Boulevard, Winston-Salem, NC 27157-1204; 877-324-8411; http://www.fiavolunteers.org.

The Forum on Religion, Spirituality and Aging is a constituent group of the American Society on Aging. The forum distributes a newsletter, *Aging & Spirituality*, and assists members of this professional organization who want to address their concerns about spirituality and aging. To obtain more information, contact the American Society on Aging, 833 Market Street, #511, San Francisco, CA 94103; 415-974-9600, 800-537-9728; http://www.asaging.org.

Worksite Wellness

In 1987, in Omaha, Nebraska, the Wellness Councils of America (WELCOA) was founded for the purpose of developing community-based wellness councils to encourage health promotion activities at the worksite. The growth of these councils in cities across America peaked in 1993 with 40 such councils, but was reduced in number to 8 in 2006. The focus of WELCOA the past few years has been on membership rather than councils, with 2,500 member organizations signed up. These organizations receive a newsletter and may also purchase consultation or how-to books for starting or strengthening worksite health-promoting activities. Organizations are also eligible for being recognized with a Well Workplace Award. WELCOA's membership fee is $365 a year.

Over the past 20 years, there has been little emphasis on the health of the *older* worker at WELCOA, despite this author's efforts to encourage such a focus (Haber & Wicht, 1987). Beginning in 2003, however, WELCOA included a column in their newsletter that has focused on the wellness of aging workers. For additional information on WELCOA,

contact David Hunnicutt, President, Wellness Councils of America, 9802 Nicholas Street, #315, Omaha, NE 68114; 402-827-3590; http://www.welcoa.org.

In general, corporate leaders believe wellness programs have both health benefits for their employees and financial benefits for their organizations. They have become more knowledgeable about the studies that have correlated participation in worksite wellness programs with lower absenteeism and tardiness, fewer medical insurance and disability compensation claims, increased productivity due to higher morale, and lower turnover rates (Kizer, 1987). Among 31 worksite wellness programs evaluated in terms of cost-effectiveness, only one failed to report a positive return on investment (Stokols et al., 1995). Another 20 worksite health programs were evaluated, and only one was not associated with reduced costs or increased benefits (Pelletier, 1996).

One of the pioneers in worksite wellness was Johnson & Johnson, the nation's largest producer of health care products. It began its Live for Life program in 1978 to improve the health of more than 10,000 employees. Compared with employees at Johnson & Johnson companies who did not have access to the wellness program, the participating employees became more active, lost more weight, smoked less, showed greater improvement in applying stress management techniques, and lost less time due to sickness (Nathan, 1984).

A similar program, Control Data Corporation's Staywell Program, was started about the same time. As with Live for Life, Staywell began with a health screening profile, then followed up with professionally run programs and support groups called action teams. Both programs have led to corporate-wide environmental changes, such as the provision of nutritious foods in the cafeteria and in vending machines, no-smoking areas, and on-site exercise facilities (Naditch, 1984).

When the cost of corporate medical plans rose 25% in 1991 (Meyer, 1991), some companies took a punitive approach. Turner Broadcasting Systems, for instance, attempted to lower insurance costs by firing or refusing to hire smokers and overweight people. A less extreme response was instituted by companies that raised health care costs for employees who engaged in lifestyle risk behaviors and provided programs to help them reduce risk factors. Hershey Foods employees, for instance, were required to pay $1,400 more in insurance costs per year if they became obese (I presume this penalty accrued even if the excess weight was a result of eating Hershey chocolate bars), smoked, remained sedentary, or had high blood pressure or high cholesterol levels.

A more positive perspective was taken by Southern California Edison (SCE), which gave premium reductions or reimbursements to employees who underwent screenings or joined risk reduction programs. SCE was

motivated by the finding that employees with three risk factors averaged insurance claims that were twice as high as those with no risk factors (Meyer, 1991).

One of the major shortcomings of worksite wellness programs has been the tendency for those who need these programs the least—the younger and healthier workers—to utilize them the most. This is due, in part, to the youth of staff members, according to Levin (1987): "At General Electric, Campbell Soup and Johnson and Johnson, the average age of staff members is less than 30. This is typical for fitness center staff; it is rare to find instructors over the age of 40." Levin questioned whether youth-oriented fitness staff members understood the special needs and interests of older employees and retirees.

Retirees may be excluded from wellness programs deliberately for such reasons as space limitations, added staff costs, and possible legal liability. In 1985, only 15% of companies with wellness programs permitted retirees to participate ("Year End Update," 1985). On the positive side, however, an estimated three-fourths of major employers offered preretirement programs, and many of these programs included a wellness component. Even more encouraging, many of these companies reached out to employees in their 40s, rather than waiting for the more traditional preretirement eligibility age of 55 or 60.

Hospitals

Almost half the patients in American hospitals are geriatric patients, so it is not surprising that many hospitals in the United States host health programs for older persons and their families. In addition to fostering good public relations, these programs are considered beneficial marketing strategies. These hospital-based senior membership programs typically offer a variety of health education and health promotion services, including a newsletter, educational seminars, senior exercise classes, medical screening programs, or assistance with health insurance.

One such program, affiliated with the hospitals at the University of Texas Medical Branch (UTMB) in Galveston, Texas, is called SageSource. This program sponsors low-cost luncheons and dinners for adults aged 55 and over, with faculty and clinicians from the UTMB hospitals providing community health education. There is also a weekly radio show on senior activities and health issues, land- and water-based exercise classes, a quarterly newsletter called *SageSource News*, and the sponsorship of medical screenings and health fairs. There is no membership fee, but a modest fee is charged for each individual activity. For more information, contact the UTMB Senior Services Office, P.O. Box 35081, Galveston, TX 77555-5081; 409-747-2141, 888-887-6800; http://www.utmb.edu/aging.

Educational Programs

Elderhostel is an international program that arranges low-cost travel, room and board, and specially designed classes for adults aged 55 and over. As many as 260,000 older adults in a single year have participated in 10,000 Elderhostel programs at more than 1,600 universities, museums, state and national parks, and other community sites throughout the United States as well as in 90 other countries.

There are no homework assignments, no examinations, and no grades. Elderhostel's emphasis is on thought-provoking and challenging programs. Typically, noncredit college courses are 1–3 weeks long. Expenses tend to average about $100 a day and are all-inclusive. The older students may live in dormitories and eat in college dining halls, though increasingly, they reside in more comfortable lodging in the community. Classes frequently are taught by college faculty and cover many different types of subjects, such as music, art, religion, history, health, and astronomy.

Many of the Elderhostel programs are quite innovative. An interesting example that takes place at Texas A&M University at Galveston is a sea camp that focuses on the coastal environment and endangered species. During the 5-day residential learning program, the students attend classes, take sailing trips, and go netting aboard the *Roamin' Empire*, a 48-foot research vessel. Elderhostelers who want to share their experience with their grandchildren (ages 9–12) can join an intergenerational program. The intergenerational participants share firsthand, on-the-water experiences during 5 days in the summer and reside in dormitories on campus at night. For information, contact the Elderhostel Program, Texas A&M University, Galveston, TX 77550; 409-740-4934; http://www.tamug.edu/elder.

The Boston-based Elderhostel company has dominated the business of educational trips for seniors since its founding in 1975. Nonetheless, it recently became more innovative by launching educational programs aimed at the baby boomers and those who are even younger than the boomers. This new focus is called the Road Scholar tours, with itineraries that offer less structure, more free time, and smaller group sizes (20 people instead of 40) than traditional Elderhostel programs.

As the average age of an Elderhostel client jumped to 72, the number of participants dropped from 260,000 in 1999 to 191,000 in 2002. The Road Scholar tour (notice no use of the term *elder*) is designed to lure a new generation. Instead of trips limited to those aged 55 and over (though younger companions and spouses have always been allowed), the Road Scholar program is for anyone aged 21 and older. Examples of the new educational travel program include meeting with Buddhist monks in a monastery in Cambodia and taking a West Virginia rafting trip that includes education on Appalachia.

For information, contact Elderhostel, 11 Avenue de Lafayette, Boston, MA 02111-1746; 877-426-8056; http://www.elderhostel.org. Free catalogs of national and international programs are available. If interested in the Road Scholar tours, call 800-466-7762, or access http://www.roadscholar.org.

Community colleges around the country also offer low-cost educational and health promotion programs for senior adults. One excellent program is the College of the Mainland Senior Adult Program, which provides a variety of educational programs for adults aged 55 plus, including arts, crafts, aerobics classes, weight-training classes, computer education, area trips, and long-distance travel. For information, contact the College of the Mainland Senior Adult Program, 1200 Amburn Road, Texas City, TX 77591; 409-938-1211.

Emeritus Centers are bringing retired professors back to campus. These educational programs offer retired faculty members a chance to socialize, discuss topics with fellow academics, teach a course or give a lecture, advise a junior professor or student, or even pursue scholarly endeavors. At Emory University, there is a discussion group for emeriti that focuses on late-life transitions such as relating to adult children, long-term care, and managing a sick spouse. In 2003, representatives of 40 universities attended the first annual meeting of the Association of Retirement Organizations in Higher Education (http://www.arohe.org).

The second established emeriti center, launched in 1974 at the University of Southern California (USC; University of California, Los Angeles started the first one in 1969), is considered to be particularly innovative and comprehensive. In 1993, it began offering retired scholars research stipends up to $2,000, and it also endowed an annual lecture that recognizes continuing achievements in scholarly publications. There is also an off-campus lecture program that allows emeriti to give lectures throughout southern California. USC's center also serves retired staff members as well as faculty. For a description of USC's program—as well as one at the University of California, Berkeley—see Glazer and colleagues (2005).

There are also college-affiliated retirement communities that have sprung up in 50 college towns across the country, next to such institutes of higher education as Notre Dame, the University of Florida, and the University of Michigan. In addition to socializing with former college classmates—though some choose to retire at communities affiliated with colleges that they did not attend—these retirees can attend classes at reduced rates or for free and can gain priority access to sporting or cultural events.

Shopping Mall–Based Programs

Older Adult Service and Information System (OASIS) provides shopping mall–based educational programs at May Company department stores in

26 cities, serving about 360,000 adults aged 55 and over. OASIS began in 1982 through its founder and president, Marylen Mann, in collaboration with Margie Wolcott May of the May department stores. The founding site and national headquarters is at the May department store in St. Louis, Missouri.

There is only one paid administrator at each OASIS site, with considerable administrative responsibility assumed by older adult volunteers. The array of courses focus on mental and physical health, intellectual stimulation on a wide scope of subjects, and fun. Contact OASIS, 7710 Carondelet Avenue, Suite 125, St. Louis, MO 63105; Marylen Mann, President, 314-862-2933; http://www.oasisnet.org.

Given that there is a Jim Smith Society (for men named Jim Smith) and a National Association for the Advancement of Perry Mason, it is possible that America has a national organization for just about everyone—including shopping mall walkers. The National Organization of Mall Walkers once claimed 3 million members who were racking up miles in malls across America. Some of the shopping mall owners were enticing walkers to their malls with gifts, provided they accumulated sufficient mall mileage.

Not all has been bliss in mall-walking America, however. The National Organization of Mall Walkers, alas, appears to have bit the dust. And there was a *New York Times* article ("Sneaker-Clad Army," 2001) that reported on a mall owner in suburban Chicago who was attempting to get rid of its older mall walkers. He complained that they rarely did any shopping, and to boot (so to speak), he believed that the walkers got in the way of the real shoppers. This story had a happy ending, though, as the mall walkers successfully advocated for their right to walk in this mall. And they accomplished this victory without the support of a national mall walking organization.

Computer Education

Ball State University's Fisher Institute for Wellness and Gerontology runs a community center for older adults in downtown Muncie, Indiana. This center is a learning laboratory for its graduate students, who organize and implement a variety of wellness and learning programs at the Community Center for Vital Aging (CCVA; contact http://www.bsu.edu/wellness). The first program implemented at the center was SeniorNet Computer Training, a class for older adults to learn how to use the computer. Each of the computer classes at the CCVA has met its maximum enrollment over the first 5 years of the center's existence, and the older students who completed their classes reported that they felt more connected with

family members by learning to use e-mail and more connected in general through access to the Internet.

SeniorNet is an award-winning national program and the largest trainer of adults aged 50 and older on computers. The organization began in 1986 with 22 members and now has 39,000 members at 220 learning centers in communities around the country. SeniorNet provides training for teaching staff; offers hardware, software, and course curricula; and shares strategies with community organizations for effective marketing to seniors. SeniorNet also provides online computer courses, discussion rooms for computer users, discounts on computer hardware and software, and newsletters. For more information, contact SeniorNet, 900 Lafayette Street, #604, Santa Clara, CA 95050; 408-615-0699; http://www.seniornet.org.

MODEL HEALTH PROMOTION PROGRAMS

Although there is no certain method for determining the quality of a health promotion program, there has been no shortage of attempts to identify model health promotion programs, develop a catalog that includes a summary of these exemplars, and distribute the catalog around the country in order to encourage their replication. Many of these model health promotion programs have been developed over the years with the aid of federal grants and other funding sources, have gone through multiple program evaluations, and can be helpful to health professionals who are interested in launching or improving their own program.

National directories of model health programs for older adults began in the 1980s when a directory of 40 programs was compiled by the Administration on Aging and distributed by the National Council on the Aging. Another directory was published in 1992 and included 24 model health promotion programs that were selected by a panel of experts through a cooperative project between AARP and the U.S. Public Health Service's Office of Disease Prevention and Health Promotion.

One of the more recent efforts in this regard was begun in 1999 by the Health Promotion Institute (HPI) of the National Council on the Aging. HPI started by summarizing 16 model programs or best practices and compiling them into a loose-leaf directory. The summaries included information on the planning process, implementation of the program, and program evaluations. Each year, new best practices have been added to this directory. If interested in obtaining a copy, contact the National Council on the Aging, Health Promotion Institute, 300 D Street, SW, #801, Washington, DC 20024; 202-479-1200; http://www.ncoa.org.

The author of this book has had two programs listed in HPI's best practices manual: the Healthy Aging Exercise and Health Education program that has taken place in churches, senior centers, and other community sites and is described in chapter 5, Exercise; and the Health Assessment and Intervention program that uses health contract/calendars and has taken place in conjunction with geriatric primary care clinics—it is described in chapter 4, Health Behavior.

The National Council on the Aging's Center for Healthy Aging

The National Council on the Aging's Center for Healthy Aging is a resource center for those interested in healthy aging programs. Their Web site (http://www.healthyagingprograms.org) provides access to manuals, tool kits, examples of model programs, and links to other healthy aging Web sites. The center is located at the National Council on the Aging, 1901 L Street, NW, 4th Floor, Washington, DC 20036; 202-479-1200.

The center also serves as a support entity for the Administration on Aging's (AOA) Evidence-Based Disease Prevention Grants Program. AOA competitive awards were given to community organizations in 2003 (a $6 million-initiative) and 2006 (a $12 million-initiative), which helped to develop and promote evidence-based model programs around the nation, some of which are described in this chapter.

Healthwise

The best known older adult medical self-care program is a model program called Healthwise, located in Boise, Idaho. The Healthwise program relies mostly on the *Healthwise Handbook*, which provides information and prevention tips on 190 common health problems, with information periodically updated. The *Healthwise Handbook* (2006) is in its 17th edition.

The handbook includes physician-approved guidelines on when to call a health professional for each of the health problems that it covers. Some Healthwise community programs have supplemented the distribution of the handbook with group health education programs or nurse call-in programs. There is a Spanish-language edition of the *Healthwise Handbook*, called *La Salud en Casa*, and a special self-care guide for older adults called *Healthwise for Life*.

With the assistance of a $2.1 million grant from the Robert Wood Johnson Foundation, Healthwise distributed its medical self-care guide to 125,000 Idaho households, along with toll-free nurse consultation

phone service and self-care workshops. Thirty-nine percent of handbook recipients reported that the handbook helped them avoid a visit to the doctor (Mettler, 1997). Blue Cross of Idaho reported 18% fewer visits to the emergency room by owners of the guide.

Elements of the Healthwise program have been replicated in the United Kingdom, South Africa, New Zealand, Australia, and Canada. In British Columbia the *Healthwise Handbook* was distributed to every household, and all 4.3 million residents had potential access to the Healthwise content through a Web site and a nurse call center.

Additional information can be obtained from Donald Kemper or Molly Mettler, Healthwise, Inc., 2601 N. Bogus Basin Road, Boise, ID 83702; 800-706-9646; http://www.healthwise.org.

Chronic Disease Self-Management Program

Kate Lorig and colleagues at the Stanford University School of Medicine have been evaluating community-based, peer-led, chronic disease self-management programs for many years, beginning with the Arthritis Self-Management Program (Lorig et al., 1986). This program has since evolved into a curriculum that is applicable to a wide array of chronic diseases and conditions.

Typically, each program involves about a dozen participants, led by peer leaders who have received 20 hours of training. The peer leaders, like the students, are typically older and have chronic diseases that they contend with. The program consists of six weekly sessions about 2.5 hours long, with a content focus on exercise, symptom management, nutrition, fatigue and sleep management, use of medications, managing emotions, community resources, communicating with health professionals, problem solving, and decision making. The program takes place in community settings such as senior centers, churches, and hospitals.

The theoretical basis of the program has been to promote a sense of personal efficacy among participants (Bandura, 1997) by using such techniques as guided mastery of skills, peer modeling, reinterpretation of symptoms, social persuasion through group support, and individual self-management guidance. In addition to improving self-efficacy, Lorig and colleagues (2001) reported reduced emergency room and outpatient visits and decreased health distress, fatigue, and limitations in role function.

The Chronic Disease Self-Management Program is housed at Stanford University's Patient Education Research Center, 1000 Welch Road, #204, Palo Alto, CA 94304; 650-723-7935; http://patienteducation.stanford.edu/programs/cdsmp.html.

Project Enhance (Formerly Senior Wellness Project)

Senior Services of Seattle/King County began the Senior Wellness Project in 1997 at the North Shore Senior Center in Bothell, Washington. It was a research-based health promotion program that included a component of chronic care self-management that was modeled after Kate Lorig and colleagues' (1999) program. The program also included health and functional assessments; individual and group counseling; exercise programs; a personal health action plan with the support of a nurse, social worker, and volunteer health mentor; and support groups. A randomized controlled study of chronically ill seniors reported a reduction in the number of hospital stays and average length of stay, a reduction in psychotropic medications, and better functioning in activities of daily living (Leveille et al., 1998).

The Senior Wellness Project represented a demonstration of a partnership among a university, an area agency on aging, local and national foundations, health departments, senior centers, primary care providers, older volunteers, and older participants. Versions of this model program are being replicated at senior wellness sites around the country (80 plus sites in the United States and 2 sites in Sweden) to test its effectiveness in a variety of communities, in an assortment of sites, serving a diversity of clientele. Findings have demonstrated higher levels of physical activity and lower levels of depression among its participants (Dobkin, 2002).

The Senior Wellness Project converted into Project Enhance, which was divided into two components: Enhance Fitness and Enhance Wellness. Enhance Fitness is an exercise program that focuses on stretching, flexibility, balance, low-impact aerobics, and strength training. Certified instructors have undergone special training in fitness for older adults. Classes last an hour, involve 10–25 people, and participants can track their progress through a series of functional evaluations.

Participants who completed 6 months of Enhance Fitness improved significantly in a variety of physical and social functioning measures as well as reported reduced levels of pain and depression. There was also a reduction in health care costs (Ackerman et al., 2003). The Enhance Fitness program has been replicated in 64 community sites across six states.

Enhance Wellness focuses on mental health, with an emphasis on lessening symptoms of depression and other mood problems; developing a sense of greater self-reliance; and lowering the need for drugs that affect thinking or emotions. Enhance Wellness typically consists of a nurse and social worker working with an individual. An analysis of the effectiveness of the program found that it reduced depression 1 year after the program and improved exercise readiness, physical activity levels, and self-reported health (Phelan et al., 2002).

To learn more about Project Enhance, contact Susan Snyder, Program Director at Senior Services of Seattle/King County, 2208 Second Avenue, #800, Seattle, WA 98121; 206-727-6297; susans@seniorservices.org.

Ornish Program for Reversing Heart Disease

Dr. Dean Ornish, a physician at the University of California, San Francisco and founder of the Preventive Medicine Research Institute, has developed a program for reversing heart disease that has been replicated at several sites around the country. Dr. Ornish (1992) has recommended a vegetarian diet with fat intake of 10% or less of total calories, moderate aerobic exercise at least 3 times a week, yoga and meditation an hour a day, group support sessions, and smoking cessation.

Dr. Ornish and his colleagues have reported that, as a result of their program, blockages in arteries have decreased in size, and blood flow has improved in as many as 82% of their heart patients (Gould et al., 1995). A 5-year follow-up of this program reported an 8% reduction in atherosclerotic plaques, while the control group had a 28% increase. Also during this time, cardiac events were more than doubled in the control group (Ornish et al., 1998).

The applicability of Ornish's program to non-heart-patients is still of uncertain utility. It may take highly motivated individuals (e.g., patients with severe heart disease) and significant medical and health support (requiring significant resources) for the program to be useful to others. For additional information, contact Dean Ornish, MD, Preventive Medicine Research Institute, 900 Bridgeway, Suite 1, Sausalito, CA 94965; http://www.pmri.org.

Benson's Mind/Body Medicine

Herbert Benson is a physician affiliated with Harvard Medical School and best known for his top-selling books on the relaxation response and popularizing the term *mind/body medicine*. For individuals feeling the negative effects of stress, Benson's program teaches them to elicit the relaxation response, a Western version of meditation. The Mind/Body Medical Institute's clinical programs treat patients with a combination of relaxation response techniques, proper nutrition and exercise, and the reframing of negative thinking patterns.

Benson's nonprofit scientific and educational institute conducts research; provides outpatient medical services; and trains health professionals, postdoctoral fellows, and medical students. The Mind/Body Medical Institute is located at 824 Boylston Street, Chestnut Hill, MA 02467; 617-991-0102; http://www.mbmi.org.

The research results from Benson's and Ornish's programs attracted the attention of Medicare, which funded a demonstration project to evaluate these programs. As a consequence of the demonstration project, Medicare began, in 2006, to reimburse eligible patients for participation in the two cardiac wellness programs, Ornish's Reversing Heart Disease and Benson's Mind/Body Medicine. These two programs have expanded the emphasis in Medicare from acute care medicine, rehabilitative medicine, and prevention to the inclusion of comprehensive wellness.

Strong for Life

The Strong for Life program is a home-based exercise program for both disabled and nondisabled older adults. It focuses on strength and balance and provides an exercise video, a trainer's manual, and a user's guide. The program was designed by physical therapists for home use by older adults and relies on elastic resistive bands for strengthening muscles. The exercise program led to a high rate of exercise adherence among older participants as well as to increased lower extremity strength, improvements in tandem gait, and a reduction in physical disability (Jette et al., 1999).

This program is housed at Boston University's Roybal Center, Sargent College, 635 Commonwealth Avenue, Boston, MA 02215; 617-353-2713; http://www.bu.edu/roybal.

The American Geriatrics Society/Foundation for Health in Aging

The American Geriatrics Society is the leading professional organization for geriatricians. In 1999, it developed the Foundation for Health in Aging to help older adults and their caregivers become active participants in their own health care. The Web site (http://www.healthinaging.org) provides a wealth of high-quality educational material that can be downloaded without cost. One such resource is "Eldercare at Home," a document that helps informal caregivers meet the needs of medically or functionally compromised older adults at home. Another resource provides up-to-date guidelines on diabetes, incontinence, pain management, fall prevention, and other important topics. This information is separated into professional practice guidelines for physicians and other health care providers as well as easy-to-read versions for patients and caregivers.

The American Geriatrics Society/Foundation for Health in Aging is located at the Empire State Building, 350 Fifth Avenue, #801, New York, NY 10118; 212-755-6810; http://www.healthinaging.org.

Community-Oriented Primary Care

Over a 4-year period (1992–1996), I participated in two Community-Oriented Primary Care (COPC) interdisciplinary teams, one housed in a Public Health Service Section 330 community health clinic for patients who are indigent and the other in a university-affiliated outpatient clinic (Thompson et al., 1996, 1998). COPC refers to the activities of primary care health care professionals who go out into the community on their own initiative to gain more understanding of individual clients as well as the community from which they come. This contrasts with a traditional primary care practice, where individual patients seek medical primary care at a clinic site.

Thus in addition to the traditional focus on the individual patient, COPC also makes the family and community the focus of diagnosis, treatment, and ongoing surveillance (Nutting, 1987). The practitioner of COPC moves from the narrow, biomedical, physician-led, clinic-based, one-to-one form of medical care to a new vision of providing health care that includes the social environment that shapes an individual's health and behavior choices.

The two most popular definitions of a community are (a) individuals who share a geographical area and (b) a group of persons who share values or lifestyles. The concept of *community* from a COPC perspective, however, typically focuses on the community of clients of a health professional or health facility that has a specific type or set of health problems (e.g., diabetes, noncompliance, cancer, alcohol abuse, teenage pregnancy). A COPC project also tends to take a broad view of community and to systematically examine the status or perceptions of the wide variety of community persons who interact with the patient (e.g., spouse, minister, *curandero*, pharmacist, peers, etc.).

In addition to identifying relevant persons in the community who can shed light on a specific health problem, the COPC practitioner reviews extant data or collects new data. The county health department or other city and county agencies may provide relevant demographic, social, economic, mortality, and morbidity data. Other sources of data include chart reviews of clients or surveys of residents in the community. Health problems in a local community that are documented through data and are of unusual magnitude tend to stimulate COPC projects.

Often health or disease data at the local community level are compared with data from similar populations in other parts of the country or with Healthy People 2010 baseline data or projections. Another good source of comparative risk factor data is the Behavior Risk Factor Surveillance System (BRFSS; http://www.cdc.gov/brfss). The BRFSS is a continuous telephone survey that examines patterns in eating habits,

physical activity, and other individual behaviors that affect health. There is risk factor data on all 50 states and selected local areas.

The goals of a COPC project are to (a) identify measurable objectives for reducing a health problem or the risk factors that contribute to it; (b) include a focus on health education, disease prevention, or health promotion; (c) inform providers and consumers that they have the opportunity and the responsibility to be advocates of change and to make the health care system more responsive to their needs; and (d) recognize that health professionals can be more effective in teams, including relying on such health professionals as primary care physicians, clinical nurses, community health nurses, physician's assistants, epidemiologists, public health specialists, social workers, medical sociologists, and health educators.

Some of the COPC projects that we completed were (a) the development of a health screening instrument to help homeless shelter staff assess the medical status of their clients and to provide the staff with referral telephone numbers for dealing with a wide range of health problems; (b) implementation of a health fair at another homeless shelter site with the assistance of homeless shelter residents in the planning process; and (c) completion of 80 interviews with former patients of a recently closed Public Health Service Section 330 community health clinic for those who are indigent in order to determine how they had been receiving medical care since the closing of the clinic and to identify the barriers to health care that were generated by the closing. The findings were compiled and the resulting report distributed to community leaders and government officials as the first step in an attempt to reopen this much-needed medical clinic.

Without a mechanism for reimbursement of its activities, the COPC model may have only a modest impact on the average clinical practice in the community. At least two abbreviated elements of the COPC model, however, can supplement traditional clinical practices in a cost-effective way: (a) define a health problem that affects a significant number of clients and (b) develop a small project in the community that systematically addresses this problem (Nutting, 1987).

The leader of the COPC movement to integrate community health and medicine has been Paul Nutting, MD, Center for Research Strategies, 225 E. 16th Avenue, #1150, Denver, CO 80203; 303-860-1705.

A Model Health Program in a Chinese Community

I observed what may have been the best example of a model health promotion program—a self-led Tai Chi class—while on an early morning jog in China in 1978. Tai Chi is a nonstrenuous sequence of physical

FIGURE 12.1 Tai Chi in China.

movements derived from the ancient Chinese martial arts. Tai Chi attempts to increase energy, improve balance, and enhance mental and spiritual health. The participants I observed in the community, over half of whom were older adults, had maximum accessibility to this program—they had only to exit their front doors. There were no fees to be paid and no professionals to depend on. See Figure 12.1, which shows people practicing Tai Chi.

I later observed similar groups of older persons in China participating in Tai Chi in community parks (Haber, 1979). Since that time, several studies have reported that Tai Chi is beneficial for older adults with balance problems (Wolf et al., 1996; Wolfson et al., 1996), and it is now being taught at many senior centers and other community sites throughout the United States.

PROFESSIONAL ASSOCIATIONS

Health promotion and health education programs are sponsored by many disease-specific professional associations. The Arthritis Foundation, for example, offers several health education programs, among them self-help and peer support programs, including the Arthritis Self-Help Course, PACE Exercise, arthritis clubs, and aquatic programs. All programs

are taught by trained volunteer instructors, many of whom cope with arthritis.

It is estimated that everyone over the age of 60 has some degree of osteoarthritis, and about 40% of older Americans recognize some of its symptoms. Osteoarthritis, the most common form of arthritis, is the gradual wearing away of tissue around the joints of the hands, feet, knees, hips, neck, or back. Arthritic pain may vary from mild to severe, and it may come and go. Arthritis cannot be prevented or cured, but the function of arthritic joints can be improved, and the pain often can be alleviated.

More than 100 local chapters of the Arthritis Foundation offer a 6-week course that provides information on medications, exercise, nutrition, relaxation techniques, coping skills, and the practical concerns of daily living. Practical information can range from the identification of places to purchase Velcro-modified clothing to the location of aquatic exercise programs.

Many of the Arthritis Foundation programs were developed and evaluated at the Stanford Arthritis Center over many years and are offered around the country. Participants are typically asked to pay a small fee for courses and instructional materials. Besides health education programs, local arthritis chapters distribute free booklets on arthritis as well as information about most arthritis medications. For additional information, contact the Arthritis Foundation, P.O. Box 7669, Atlanta, GA 30357; 800-283-7800; http://www.arthritis.org.

Many other professional associations also offer health education programs and materials. If you cannot locate a state or local chapter of a specific professional association, contact one of the following national headquarters for information on local educational opportunities and support groups as well as for resource materials:

Alzheimer's Association (24-hour toll-free telephone link to access information about local chapters and community resources, free catalog of educational publications, and research program), 225 North Michigan Avenue, Fl. 17, Chicago, IL 60601; 800-272-3900; http://www.alz.org.

American Cancer Society (education and support programs, workshops, transportation programs, publications, and financial aid), 1599 Clifton Road NE, Atlanta, GA 30329; 800-227-2345; http://www.cancer.org.

American Diabetes Association (local chapters for support and referrals, outreach programs for minority communities), 1701 North Beauregard Street, Alexandria, VA 22311; 800-342-2383; http://www.diabetes.org.

American Heart Association (cookbooks, guides on treatment and prevention, and research funding program), 7272 Greenville Avenue, Dallas, TX 75231; 800-242-8721; http://www.americanheart.org.

American Lung Association (education, advocacy, and research on asthma, emphysema, tuberculosis, and lung cancer), 61 Broadway, 6th Floor, New York, NY 10006; 212-315-8700, 800-LUNG-USA; http://www.lungusa.org.

National Stroke Association (survivors, caregivers and family, and medical professionals), 9707 E. Easter Lane, Centennial, CO 80112; 800-787-6537; http://www.stroke.org.

American Parkinson's Disease Association (local chapters, educational materials, referrals, and research), 135 Parkinson Avenue, Staten Island, NY 10305; 800-223-2732; http://www.apdaparkinson.org.

Better Hearing Institute (information on medical, surgical, and rehabilitation options), 515 King Street, #420, Alexandria, VA 22003; 703-684-3391; http://www.betterhearing.org.

National Association for Continence (advocacy, education, and support), P.O. Box 1019, Charleston, SC 29402; 800-252-3337; http://www.nafc.org.

National Association on Mental Illness (support groups, education, advocacy, and research), Colonial Place Three, 2107 Wilson Boulevard, Suite 300, Arlington, VA 22201; 800-950-6264; http://www.nami.org.

National Council on Alcoholism and Drug Dependence (advocacy, information, and referrals), 22 Cortland Street, #801, New York, NY 10007; 800-622-2255; http://www.ncadd.org.

National Digestive Diseases Information Clearinghouse (support groups, referrals, and fact sheets on gastroesophageal reflux disease, hemorrhoids, constipation, ulcers, and irritable bowel syndrome), NIH, 2 Information Way, Bethesda, MD 20892; 800-891-5389; http://www.digestive.niddk.nih.gov.

National Mental Health Association (referrals and publications), 2001 N. Beauregard Street, 6th Floor, Alexandria, VA 22311; 800-969-6642; http://www.nmha.org.

National Osteoporosis Foundation (research, education, and advocacy), 1232 22nd Street, NW, Washington, DC 20037; 202-223-2226; http://www.nof.org.

COMMUNITY VOLUNTEERING

The United States finds itself with two parallel phenomena that invite convergence. On the one hand the country has vast unmet community

> service needs; on the other hand, the United States draws only partially on the large and growing productive potential of older people. (Caro & Morris, 2001)

Although many analysts see the rapidly growing older adult population in the United States in terms of being a financial burden on future generations, others see a vast, untapped social resource for improving the health and well-being of older adults and society itself. An AARP survey in 2002 reported that over half of Americans aged 50–75 are planning to incorporate community service into later life (Freedman, 2002). The Bureau of Labor Statistics of the U.S. Department of Labor, however, reported that in 2002, the volunteer rate for people aged 65 and older was less than half of that (22.7%).

If the potential tidal wave of community volunteering could be unleashed, there would likely be greater fulfillment in, and purpose to, the latter part of the life cycle. A meta-analysis of 37 independent studies reported that the sense of well-being among older volunteers was consistently enhanced as a consequence of their volunteer efforts (Wheeler et al., 1998). The authors also noted that while this mental health phenomenon was taking place, significant experience and energy was being directed at the service needs of society's more vulnerable groups.

About a century ago, many services in America—education, law enforcement, fire fighting, hospital care, social service—relied on volunteers. Over time, however, community services began to be dominated by paid personnel, with the more affluent obtaining services privately and the less affluent relying on publicly funded services. Over time, volunteering in the public sector became less attractive and peripheral to the main work of paid staff. Volunteer responsibilities were not only becoming marginal to the mission of public organizations, but when volunteers were utilized, they were oftentimes lacking in training, supervision, and recognition (Caro & Morris, 2001).

Marc Freedman (1999), president of Civic Ventures, describes the volunteer opportunities available to older adults as "incapable of capturing the imagination of a new generation of older Americans." In his book *Prime Time: How Baby Boomers Will Revolutionize Retirement and Transform America*, Freedman (1999) argues that we need to "learn how to tap the time, talent, and civic potential of the group that is our country's only increasing natural resource."

The following community volunteer programs represent model programs that do provide training, supervision, and recognition. Program evaluations, though limited, support the contention that these programs not only enhance the lives of the persons they serve, but also the mental health of the older volunteers themselves (Morrow-Howell et al., 2003).

Federal Volunteerism

The National Senior Services Corps (also known as SeniorCorps) was established in 1973 and is the principal vehicle for federal volunteerism for Americans aged 55 and older. About 500,000 older Americans participate in the corps, most of whom are low income and accept a small stipend for their effort. Volunteers serve primarily through one of the following three programs:

1. The Retired Senior Volunteer Program (RSVP), which matches the personal interests and skills of older Americans aged 55 and over with opportunities to solve problems in their local communities.
2. The Foster Grandparent Program, which trains low-income adults aged 60 and over to serve 20 hours a week to help children with special needs (e.g., a seriously ill child with cancer).
3. The Senior Companion Program, which trains low-income adults aged 60 and over to support their peers who are frail and disabled (e.g., a stroke victim who is confined to a wheelchair and suffering from depression) in order to help them remain independent.

For additional information on these programs and other federal volunteer opportunities, contact http://www.seniorcorps.org.

There are two intergenerational programs that receive substantial federal support: Experience Corps and the National Mentoring Partnership Program. The goal of the Experience Corps is to place adult volunteers aged 55 and older in elementary schools and youth-focused organizations, particularly in the inner city. Experience Corps has more than 2,000 volunteers in 19 cities, with the goal of going nationwide. Older adults who serve at least 15 hours a week receive a stipend ranging from $100 to $200 a month. For additional information, contact Experience Corps, 2120 L Street, #610, Washington, DC 20037; 202-478-6190; http://www.experiencecorps.org.

Unlike the Experience Corps, the National Mentoring Partnership program is not focused exclusively on the training and placing of older volunteers. However, many older adults participate in this program. The National Mentoring Partnership provides the information and tools that volunteers need to mentor young people in their communities. This organization has seeded and nurtured programs in 23 states. For additional information, contact MENTOR, 1600 Duke Street, #300, Alexandria, VA 22314; 703-224-2200; http://www.mentoring.org.

The Service Corps of Retired Executives (SCORE), in conjunction with the Small Business Administration, helps retired executives and

business owners who have the time to counsel younger entrepreneurs who are launching America's small businesses. There are 389 SCORE chapters with 10,500 older volunteers, who provide free counseling and low-cost workshops in local communities. SCORE consultants are in the 55 plus age range and average 40 years of business experience. If you are interested in obtaining additional information, contact SCORE, 409 3rd Street, SW, 6th Floor, Washington, DC 20024; 800-634-0245; http://www.score.org.

AARP

More than 70 years ago, the founder of AARP, Ethel Percy Andrus, said that the way to lead a life with purpose and meaning was "to serve, and not to be served." This tradition can be found among the half of AARP's 35 million members who volunteer annually. In addition, AARP has more than 3,200 local chapters dispersed among the 50 states, through which more formal community service programs are implemented. These programs reach about 3.5 million people annually. To locate one of these local chapters, contact AARP at the toll-free number 888-687-2277.

Three of the most popular AARP community volunteer programs follow:

1. AARP 55 Alive Driver Safety Program is implemented by volunteers who are trained to provide driver education. This program helps older adults drive safely and can significantly lower their automobile insurance rates. Over 600,000 drivers graduated in 2001. Contact the toll-free number 888-227-7669.
2. AARP Tax-Aide provides free tax counseling and preparation service for middle- and low-income taxpayers aged 60 and older. Volunteer tax counselors are trained and certified by the Internal Revenue Service. Tax-Aide assisted almost 2 million people during the 2001 tax season and was staffed by more than 30,000 AARP volunteers. Contact the toll-free number 888-227-7669.
3. AARP's Senior Community Service Employment Program is implemented in conjunction with the Department of Labor. This program trains and transitions low-income older people into paid employment. There were about 100 sites in the United States and Puerto Rico in 2004, serving almost 22,000 people. Contact the Senior Community Service Employment Program at AARP through http://www.aarp.org.

In a major initiative prompted by the terrorist attacks of September 11, 2001, AARP partnered with other national organizations to

enhance volunteer opportunities across the country. These AARP partner organizations are the American Hospice Foundation (http://www.americanhospice.org), America's Second Harvest (domestic hunger relief, http://www.secondharvest.org), Big Brothers Big Sisters of America (youth mentoring, http://www.bbbsa.org), Meals on Wheels Association of America (http://www.mowaa.org), and the National Mentoring Partnership (youth mentoring, http://www.mentoring.org).

Cyber Volunteering

In addition to the Web sites previously provided, there is a wealth of information about thousands of volunteer opportunities around the world through Idealist/Action Without Borders at http://www.idealist.org. This site connects with 54,000 nonprofit and community organizations in 165 countries.

COMMUNITY HEALTH ADVOCACY

Gray Panthers

The best known role model for community health advocacy in aging was Maggie Kuhn (1905–1995), founder of the Gray Panthers, an intergenerational advocacy group. I took a photograph of Maggie in 1978 (see Figure 12.2) on, literally, a slow boat to China, when Chinese relations with the Soviet Union were very strained. Ever the feisty one, Maggie thought posing in a Russian hat might amuse our Chinese guides. The expressions on the faces of our guides, however, were inscrutable.

To find out about the advocacy issues that the Gray Panthers are currently interested in, contact Gray Panthers, 1612 K Street, NW, #300, Washington, DC 20006; 800-280-5362, 202-737-6637; http://www.graypanthers.org.

To purchase or rent a video on Maggie Kuhn's life, called *Maggie Growls*, e-mail orders@wmm.com, or access the Web Site at http://www.wmm.com. For an interesting review of this video, see Bradley (2005).

Environmental Advocacy

Environmental advocacy is a strong interest among many older adults, perhaps as part of their quest to leave planet Earth in as good a shape as when they were born into it. In 1991, 35 national organizations recognized that many local and national efforts existed in the environmental protection arena, and they organized an alliance to coordinate these

FIGURE 12.2 Maggie Kuhn, founder of the Gray Panthers advocacy group.

efforts. The Environmental Alliance for Senior Involvement (EASI) attempts to facilitate the efforts of older adults to accomplish such goals as monitoring and improving water and air quality, reducing pollution from local growth and transportation, implementing noise abatement, and diminishing the hazardous use of toxic chemicals.

In 1999, 20,000 elders from the Retired Senior Volunteer Programs (RSVP) became involved with the EASI coalition. These RSVP participants contributed 4 million volunteer hours to 310 local projects around the nation. In Montana they tackled water pollution and cleaning up a toxic site. In Texas, older volunteers provided environmental education programs to thousands of students. For more information about EASI and its links to 600 environmental organizations and information sources, contact the organization headquarters: EASI, 5615 26th Street N., Arlington, VA 22207; 703-241-4927; http://www.easi.org.

There are local environmental organizations, unrelated to EASI, that originated because of the unique efforts of one individual. One such program was launched by Susan Tixier of Escalante, Utah, who began the Great Old Broads for Wilderness in 1989. She was concerned about

motorized vehicles in designated wilderness areas and the rampant grazing and mining that were scarring the Utah landscape. She organized an annual hike (the Broadwalk), published a newspaper (*The Broadside*), declared that women members younger than 45 would have to be called "Great Old Broads-in-Training," and organized a variety of environmental advocacy efforts.

In 2003, the organization moved to Durango, Colorado, under new leadership. It also became more inclusive with the following statement: "There are broads of all ages and both genders in every state of the union." For more information, contact Great Old Broads for Wilderness, P.O. Box 2924, Durango, CO 81302; 970-385-9577; http://www.greatoldbroads.org.

Red Hat Society

This group advocates for fun and a sense of humor. In 1997, Sue Ellen Cooper gave a copy of Jenny Joseph's poem "Warning," the one that states, "When I am an old woman I shall wear purple / With a red hat which doesn't go," to a friend of hers, along with a crimson fedora. In some mysterious way, this led to a loose-knit social movement of 41,000 Red Hat chapters in more than 30 countries. The chapters are for women aged 50 and over who are willing to organize social functions and attend them in a red hat and a purple outfit. Many local chapters have adopted memorable names, like "Red Hot Mamas" and "RedNReady." The primary rule for each chapter is that the women who organize social events attend them dressed in full regalia.

To find out more, contact the Red Hat Society, 431 S. Acadia Avenue, Fullerton, CA 92831; 714-738-0001; http://www.redhatsociety.org.

Granny Peace Brigade

In a *New York Times* article (April 28, 2006, p. A21), there was a summary of the trial of 18 women between the ages of 59 and 91. Some of the women used canes, one was legally blind, and one used a walker. They called themselves the Granny Peace Brigade, and they had been arrested for blocking the entrance to a military recruitment center in New York City's Times Square when they *tried to enlist*. They claimed they wanted to join the armed forces and spare the lives of younger soldiers in Iraq.

The judge, sensing a public relations disaster, found grounds to claim that the frail older women had been wrongly arrested and that they had left room for people to enter the recruitment center. When the trial was over, the Granny Peace Brigade sang the song "God Help America," composed by a member of a sister group in Tucson, Arizona, called the

Raging Grannies. The song goes like this: "God help America, we need you bad, 'cause our leaders are cheaters, and they're making the world really mad."

The Long-Term Care Ombudsman Program

Long-term care ombudsmen are advocates for residents of nursing homes, board and care homes, assisted living facilities, and similar adult care facilities. Roughly two-thirds of ombudsmen are older adults (based on conversations with state ombudsmen directors and my own experience), and about 90% of the persons served by ombudsmen are older adults.

Begun in 1972 as a demonstration program and continued under the federal Older Americans Act, every state is required to have an ombudsman program that addresses resident complaints and advocates for improvements in the long-term care system. In 2004, there were 8,400 certified volunteer ombudsmen and more than 1,000 paid staff who investigated 264,000 complaints made by 135,000 individuals. The most frequent complaint was lack of care due to inadequate staffing.

There are 53 State Long-Term Care Ombudsman Programs that are linked to 600 regional or local ombudsman programs. About 75% of the states have trained volunteers. For additional information, contact the National Long-Term Care Ombudsman Resource Center, 1828 L Street, NW, #801, Washington, DC 20036; 202-332-2275; http://www.ltcombudsman.org. Or contact the National Citizens' Coalition for Nursing Home Reform at http://www.nccnhr.org.

BenefitsCheckUp

BenefitsCheckUp was launched nationally in June 2001 by the National Council on the Aging. It is the first national Web site for older adults and service providers to look for federal and state program benefits that older adults are entitled to but are not currently receiving. The site includes information on more than 1,350 public benefit programs and has 40,000 local entry contacts. Seniors may be eligible for Supplemental Security Income, food stamps, utility bills assistance, home weatherization, vocational rehabilitation, in-home services, caregiving support services, legal services, nutrition programs, training and education opportunities, and so forth. In 2003, BenefitsCheckUpRx was launched, a national Web site to allow older adults to find out which of 250 plus programs can help them save money on their prescriptions.

Users receive a printed report that tells them which programs they may likely qualify for and where to enroll. What may have taken the older consumer or their helper days or weeks to ascertain, BenefitsCheckUp

may do in minutes. To access this service, go to the Web site http://www.benefitscheckup.org.

QUESTIONS FOR DISCUSSION

1. Provide information about two health programs oriented toward older adults (in sufficient detail to satisfy the curiosity of an interested older adult). Choose programs that are located at two of the following sites: hospital, senior center, AARP chapter, religious institution, retirement community, university, community college, area agency on aging, or shopping mall.
2. Choose one of the model health promotion programs summarized in this chapter and find out something of interest to you about that program that is not mentioned in this chapter.
3. Describe a volunteering experience you have had. Were you trained, supervised, and recognized? Was it a satisfying experience? How could your experience have been improved? (If you have never done volunteer work, drop to your knees and do 5 push-ups.)
4. Devise a plan for realizing the expressed desires of some of the 50% of baby boomers who wish to include community service in their retirement years. What type of community volunteer service would you develop, which baby boomers would you target, where would you reach out to them, when would you approach them (before retirement, early into their retirement, or anytime), and how would you reach out to them?
5. If you were to start up an advocacy group in retirement, what would you focus on, and how would you go about it? What would be the advantages and disadvantages of recruiting older adults into this advocacy group?
6. Contact the Web site of one of the professional associations listed in this chapter, and report on the most innovative program involving older adults that you can find.
7. Go to the BenefitsCheckUp Web site and briefly describe your reaction to it.
8. Examine one other topic in this chapter that you found interesting and has not been explored when answering the previous questions Why did you find this interesting?

CHAPTER THIRTEEN

Diversity

Over a lifetime, people of similar ages can be expected to become increasingly diverse. As they grow older, some people will become ever more learned and wise, while others will make little progress in these areas. Some will discover fitness to be a rewarding hobby and persist in it as they grow older, while others will become increasingly sedentary and frail. Some will appreciate each day more and more as the number of remaining days become fewer and fewer, while others will view aging as a depressing decline into decrepitude.

Despite the increasing diversity with age, much of the content of this book reports on what we can expect will happen to most of us as we age. If the author qualified every statement with "depending on a person's age, race, socioeconomic status, gender, geographical location, and so on," this would be a ponderous book indeed. (Pardon the author's assumption that it is not.) This chapter is therefore intended to draw this diversity with aging to the attention of the reader and to allow the reader to contemplate how difficult it is to make general statements about how we age.

AGE

The very definition of being old is not obvious. The onset of old age can range in age from 40 to 85. At age 40, workers are old enough to be deemed in need of protection from age discrimination as defined by the 1967 Age Discrimination in Employment Act. At age 50, people become eligible for membership in AARP. At age 60, individuals are eligible to participate in activities at most senior centers. At age 62, residents can live in public housing for elders and receive early Social Security retirement benefits. At ages 65, 66, or 67, retirees qualify for

full Social Security benefits. At age 75, a patient is eligible for treatment at some geriatric primary care clinics, including the one that the author used to be affiliated with in Texas. And many demographers use age 80 or 85 as a cutoff point for gerontological analysis.

Nonetheless, the more or less official starting point for old age in America is 65. Apparently, this tradition has its roots in Germany, where Chancellor Otto von Bismarck established age 70 as the standard retirement age in 1884, hoping, perhaps, that few, if any, would qualify for benefits. And few did. The qualifying age was eventually reduced to age 65 in 1916. When Social Security was enacted in the United States in 1935, the precedent of establishing age 65 as the eligibility age for requirement was continued. Thus age 65 was instituted as a quasi-legal and de facto national definition of old age.

Gerontologists began to realize, however, that few meaningful statements can be made about the population in general over age 65. They began to argue over the tendency to write about adults aged 65 and over as if they were all the same, when, in fact, "age is becoming increasingly irrelevant as a predictor of lifestyle or need" (Neugarten, 1979, p. 50).

Many gerontologists began to divide the older adult population into two groups, the young-old and the old-old, with age 75 as the dividing point at first; then age 80; and now it is not unusual to use age 85. Perhaps as the number of centenarians increase to a million or more when the baby boomers become of age, another dividing line will be added at age 100, in order to differentiate among the young-old, middle-old, and old-old.

Dividing the older population into two or more categories is helpful for making more specific statements about being older. The old-old are different physically and cognitively than the young-old, even if these differences are affected by changes in physical status from one decade to the next.

Take, for example, the decline in nursing home use among the old-old over the past 15 years. Using age 85 as the dividing line for being old-old, 25% of the 85-and-over population resided in nursing homes in 1985; by 1999, this percentage had been reduced to 18%. Though the percentage may have been reduced, the 85-and-over age group was still 18 times more likely to be institutionalized than those aged 65–74 in 1999, the same ratio as in 1985.

Thus while the old-old were less likely to be institutionalized over the past 15 years, the old-old, in comparison to the young-old, continued to be vulnerable to institutionalization at the same ratio. Economic, political, and lifestyle realities may change over time, but differentiating between the young-old and the old-old is likely to remain consistently useful for researchers and clinicians.

Among those aged 85 and older, about 96% of the population have at least one chronic condition, disability, or functional limitation, versus

76% among those aged 65–69 (AARP, 2002). Among those aged 85 and older, about 30% to 45% have Alzheimer's disease, versus 2% among those aged 65–69 (Evans et al., 1989; Jorm et al., 1987). Among those noninstitutionalized, the average health care expenditures for those aged 85 and over is $7,500, versus $4,000 for those aged 65–74 (AARP, 2002). The old-old are considerably more physically, mentally, and financially vulnerable than the young-old.

Before the reader gets too carried away with the differences between the old-old and the young-old, we end with the reminder that even when we divide older adults into more specific age groups, we still fail to account for the considerable variability that remains. As noted in chapter 1 in the section on extraordinary accomplishments and aging, some nonagenarians are recording new works of music and producing hit singles, while others are completing marathons and climbing mountains. Some sexagenarians, on the other hand, are looking forward to becoming decreasingly active as they enter retirement.

GENDER

As the population ages, it also becomes decidedly more female. In 2004, the life expectancy of a male born in the United States was 75.2 years, and that of a female was 80.4 years. Women represent 56% of the population aged 65–74 and 72% of those over age 85. Though women are more likely to become older, the prevalence of disability is consistently higher in women as well. More than half of women aged 70 and older report difficulty with mobility, such as walking across a room or climbing stairs, compared to 36% of men. Women aged 70 and older are more than twice as likely (57% to 28%) as men to have difficulties with strength activities.

In addition, older women have higher rates of illness, physician visits, drug prescription use, acute illnesses, and chronic conditions. Among the chronic conditions that both women and men can acquire, osteoporosis is the most unfair to women, with 80% of those who have this condition being women. Men, however, are more likely to encounter life-threatening acute conditions and to require hospitalization (Hooyman & Kiyak, 2005). Thus Medicare insurance, with its emphasis on hospital coverage and its weaknesses in providing nursing home, community, and home care, favors the profile of older men's medical status more than older women's.

Older women are more likely to be unpaid caregivers. Older wives are more likely to care for their spouses than older husbands are. Among adult children who care for their elderly parents, about 75% are daughters. And about two-thirds of the 2.4 million grandparents who are raising grandchildren are women (Health Resources and Services Administration

[HRSA], 2002). The greater responsibility for caregiving is due primarily to cultural expectations. Society expects women to leave the workforce when family obligations beckon. Not only have women been viewed as less essential than men in the workforce, they have been expected to accept substantially less money in the workforce as well. For most of the life cycle, the current cohort of older women has been considered the primary caregivers for family members, while men have been considered the primary breadwinners.

Unpaid caregiving responsibilities and lower wages for women are then complicated by widowhood. Because women generally marry men older than themselves, live longer than men, and infrequently remarry in their 50s and older, it follows that 52% of women aged 65 and over are widowed in contrast to 14% of men. Consequently, it is not surprising that women are more likely to experience economic insecurity in old age than are men.

The median income of female older adults was 56% of that of male older adults, and the poverty rate of older women was almost twice as high as for older men (13% vs. 7%; year 2000 data accessed through http://www.agingstats.gov). In 2003, the average monthly Social Security benefit was $797.50 for women, compared to $1,038.90 for men. As noted by the late Tish Sommers, founder of the Older Women's League, "Motherhood and apple pie may be sacred, but neither guarantees economic security in old age." This economic disparity, however, will diminish in the future as the labor participation of women in general continues to become more equivalent to that of men and as wage disparities continue to lessen.

A primary contributor to diminishing wage disparity will be the ever increasing ratio of women versus men enrolled in college. The proportion of men ages 18–24 enrolled in college has *declined* from 33.1% to 32.6% between 1967 and 2000, while the proportion of women has *doubled* from 19.2% to 38.4% during this time period!

Despite the physical and financial disparities at present, older women are more health conscious and more resilient. They are twice as likely as men between the ages of 45 and 64 to have a regular physician, almost 3 times more likely to have seen a physician in the past year, and more likely to seek immediate medical care if they are sick or in pain (Shelton, 2000). They are also more likely to eat a healthful diet and more likely to take a supplementary vitamin pill. In addition, older women have more frequent social contacts and more intimate relationships than do older men.

Perhaps some combination of these factors contributes to greater resiliency and a lower likelihood of committing suicide. Between the ages of 65 and 69, male suicides outnumber female suicides by 4:1; by age 85, this ratio increases to 12:1.

It seems ironic that, for many years, clinical research trials sponsored by the National Institutes of Health focused almost exclusively on male subjects, while men in general demonstrated such little interest in their own health. This practice of excluding women from clinical trials was ended in 1991 by Dr. Bernadine Healy, the first woman to head the National Institutes of Health. Dr. Healy also created the Office on Women's Health in the Department of Health and Human Services. There has been little interest in creating a counterpart office for men. And while women's health centers are commonplace in the community, men's health centers are a rarity.

A final note on the gender and age issue: Not only do differences between men and women increase with age, but also, aging women are becoming more diverse. An article in the *Journal of the American Medical Association* reports that there is now no medical reason for excluding women in the sixth decade of life from attempting pregnancy on the basis of their age alone (Paulson et al., 2002). Nothing creates more diversity than women in their 60s, some of whom are new mothers, some of whom are grandmothers, and some of whom never mothered.

RACE AND ETHNICITY

Definition

There are several terms that overlap in meaning and are often used without definitions: minority groups, racial groups, ethnic groups, and the disadvantaged. The term *minority groups* tends to refer to subgroups within a population that are subject to discrimination, usually on the basis of race, ethnicity, or national origin. *Racial groups* are categories based on parentage and physical appearance and are increasingly problematic because of widespread genetic diversity. *Ethnic groups* are individuals who share a sense of race, religion, national origin, or other cultural category. The *disadvantaged* are subgroups with fewer resources than the mainstream, oftentimes associated with minority groups, racial groups, or ethnic groups.

And, to complicate matters, new terms emerge, particularly in academic settings, including *people of color, multicultural,* and *diversity*.

Perhaps in deference to the difficulty of defining racial or ethnic categories, the census form in 2000 allowed Americans to select more than one racial or ethnic category. Nearly 7 million Americans took this opportunity to identify themselves as a blend of two or more races. This category, available for the first time in 2000, already contained 2.4% of the country's population.

Although Americans are allowed to select more than one racial category, confusion still reigned in the 2000 census. People of Middle Eastern

descent were considered White by federal counters, while people from India, once classified as White, were placed into the Asian category. One education professor at the University of Phoenix wondered why a Pakistani in America is not considered Black, but a biracial adult with blonde hair and blue eyes can check "Black" on the census form (Briggs, 2002).

Though most biologists and anthropologists now deny the legitimacy of creating distinct racial categories, the reality for older adults in America is quite different. Most minority elders have grown up without equal rights and protection under the law. Job discrimination over the years has left minorities "with less resources to cope with their old age and a legacy of poverty, poor nutrition, and living in substandard housing that generally translates into poorer health in old age" (Yee, 1990). This history of discrimination also affects the minority older adult's willingness to access the health care system, though the advent of Medicare corrected that problem to a large degree.

During their work years, many minority elders had labor-intensive jobs, inadequate access to health care, poor diets, and substantial stress (Krause & Wray, 1991). Not surprisingly, therefore, elderly minorities experience greater health problems than elderly Whites. One consequence is that many minority elders consider old age as beginning in the early 50s or even younger (Lopez & Aguilera, 1991; National Indian Council on Aging, 1984).

Racial Disparities in Health Care

The Institute of Medicine, an independent research institution that advises Congress, reported in March 2002 on the first comprehensive examination of racial disparities in health care among people who have health insurance. Previous studies reported on the lack of access to health care by minorities as well as on how the lifestyles of minorities contribute to poor health. This study tackled the delicate issue of racial prejudice in health care.

The report reviewed more than 100 studies conducted over the past decade and concluded that racial disparities contribute to higher death rates among minorities. It cited that minorities are less likely to be given appropriate medications for heart disease; less likely to be offered bypass surgery, angioplasty, kidney dialysis, or transplants; less likely to receive the most sophisticated treatment for HIV; and more likely to have lower limbs amputated as a result of diabetes (Stolberg, 2002).

The authors believe that a racial bias, perhaps subconscious, contributes to a reduced opportunity for minority patients to receive the latest and most sophisticated treatments. The explanation of why this takes place is complex and may include the fact that there are disproportionately fewer

minority physicians, minority patients are less likely to have a long-lasting relationship with a primary care physician, and physicians may assume that minority patients are less likely to comply with follow-up care.

Racial and Ethnic Distribution

The United States older adult population is becoming more racially and ethnically diverse, as evidenced by Table 13.1. In 6 decades, American minorities will increase from 16% to 36% of the total population.

Although African Americans constitute the largest group of minority elders in the United States, persons of Hispanic origin are the fastest growing minority group and will surpass African Americans some time around 2028.

African American Elders

African Americans have higher overall cancer rates, both for incidence and mortality, and significantly lower survival rates than any other population group in the United States (Baquet & Gibbs, 1992). At every age, African Americans are at higher risk of developing diabetes than Whites (Johnson, 1991). Stroke deaths among African American males are nearly twice as high as those among White males, and coronary heart disease rates are twice as high in African American women as in White women. African American women over age 65 are at greater risk of hypertension than any other group in the United States (Hildreth & Saunders, 1992; Special Committee on Aging, 1996).

Older African Americans are much more likely to rate their health as fair or poor (48%) than older Whites (28%) and are almost 50% more burdened by illness or injury that restricts daily activities (44 days

TABLE 13.1 Percentage of Persons Aged 65+ in United States by Race and Hispanic Origin

Population category	1990 (%)	2050 projected (%)
White	84	64
African American	8	12
Hispanic American	6	16
Asian/Pacific Islander	2	7
American Indian/Eskimo	0.4	0.6

Note. From "Population Projections of the United States," by the U.S. Census Bureau, January 2000, Washington, DC.

per year vs. 30 days; AARP, 1989). For reasons not clearly understood, however, some analysts find evidence for a crossover phenomenon once African Americans reach age 75; that is, the remaining life expectancy for African Americans is higher than that of Whites.

African American patients are more likely to die after major surgery than White patients, controlling for patient characteristics such as severity of illness (Lucas et al., 2006). Hospital factors accounted for much of the difference as African American patients were more likely to undergo surgery in very low volume hospitals, and low volume is a risk factor for mortality. Another study concluded that African American and White patients are, to a large extent, treated by different physicians. The physicians who treat African American patients may be less well trained clinically and have less access to important clinical resources (Bach et al., 2004).

When it comes to breast cancer, though, African American women may have significantly lower survival rates compared with White or Hispanic women because of genetic differences in likelihood of tumor types. A study of 2,140 breast cancer patients with no evidence of metastasis was part of a closely regulated trial of chemotherapy drugs (Woodward et al., 2006). The participating women had similar access to medical attention, treatment, and almost 10 years of follow-up care. African American women had a higher mortality rate from breast cancer due in part to a higher likelihood of a type of breast cancer, called estrogen receptor negative disease, that was more difficult to treat.

Although it is important to acknowledge and support ethnic food preferences, African American elders are susceptible to eating foods high in fat and sodium, including products such as bacon, sausage, pork, pigs' feet, foods fried in animal fat, smoked foods, and pickled foods (AARP, 1989). Because African Americans are more likely than others to be salt-sensitive and have high blood pressure, it is important that sodium intake be limited. African Americans need to change more of their seasoning to products such as herbs, spices, lemon juice, garlic, pepper, and ginger.

African Americans are also disadvantaged by neighborhood grocery stores that are more likely to be well stocked with processed foods and short on fruits and vegetables. A high number of neighborhood fast-food restaurants do not offer low-income older African Americans very many healthy alternatives to high-fat and high-salt diets.

On the bright side, caregiving appears to be less of a mental health burden on African American grandmothers who are raising grandchildren in their households than on White grandmothers. A study of 867 grandmothers reported that African American grandmothers are more likely to embrace raising grandchildren and consider this to be an important role in holding kin networks together (Pruchno & McKenney, 2002).

Grandparent caregivers are increasing rapidly in the United States, reaching 2.4 million persons in 2000.

In addition, older African Americans may be better able than Whites to cope with the death of a spouse (Elwert & Christakis, 2006). This may be due, in part, to family connections as older African American adults are much more likely to live with relatives. Or it may be due to deeper ties to religious life and more emotional support from fellow church members.

For a selective annotated bibliography on older African Americans, see Crowther and Whitfield (2004).

Hispanic American Elders

Hispanic Americans (*Latino* is the preferred term in some areas) comprise the second largest minority group in the United States, but they are soon to become the largest. They include Mexican Americans (49%), Cuban Americans (15%), Puerto Ricans (12%), and people from Central America, South America, and Spain (25%). Although the Hispanic populations share the Spanish language, there is much diversity in their dialects, their ability to speak English, and the length of time spent in the United States.

Hispanics in general have high rates of heart disease, diabetes, and cancer, and certain subgroups disproportionately fall prey to poor eating habits, smoking, lack of exercise, and alcohol excess. Hispanics would benefit from eating a higher proportion of traditional foods that are rich in fiber and complex carbohydrates, such as chickpeas, fava, pinto beans, plantains, cassavas, sweet potatoes, taniers, mangoes, guavas, papayas, and corn tortillas (AARP, 1989). Even in Mexico, however, the traditional diet of fresh foods is vanishing and is being replaced by imported fast foods, homegrown junk foods, and soft drinks (Malkin, 2005).

In 1998, 29% of the Hispanic population aged 65 and older had finished high school, compared to 67% of the total older population; 5% of Hispanic older Americans had a bachelor's degree or higher, compared to 15% of all older persons.

AARP's National Eldercare Institute on Health Promotion (now defunct) conducted a study that examined the barriers to community health promotion programs among primarily Spanish-speaking Hispanic elders. A list of significant barriers follows:

1. Many Hispanic elders are unfamiliar with senior citizens' centers, while others who visit the centers find the programs to be culturally insensitive to Hispanic elders.

2. Hispanic physicians, followed by Spanish-speaking or bilingual health professionals, are preferred but are in short supply. The belief in folk medicine and the healing power of God can often result in the postponement of timely doctors' visits.
3. Lack of knowledge of, and experience in, the American health care system, compounded by financial limitations and lack of transportation, constitute a major barrier to timely health care services.
4. The most credible source of health information for Hispanic elders is Spanish-language television and radio—40% of Hispanic elderly speak Spanish only—followed by the extended family, churches, community groups, and Hispanic social clubs and organizations.

Health education programs need to involve the extended family, both in program development and implementation. Program presenters need to be sensitized to the spiritual beliefs and folk medicine of Hispanic elders and, when possible, to focus on ideas from both folk and Western medicine. The role of the *curandero*, a traditional healer who provides physical, psychological, social, and spiritual support for the Hispanic family (not just the individual), also needs to be understood and incorporated into health education programs. *Curanderos* believe that morbidity and mortality are associated with strong emotional states, like *biles* (rage) and *susto* (fright).

Hispanic women who care for older relatives with dementia delay longer in placing them in nursing homes than White caregivers (Mausbach et al., 2004). The findings probably reflect cultural values that emphasize the importance of family and the expectation that family members will care for each other. Participants in the study also report greater benefits from, or more positive aspects of, caregiving. Hispanic women who were more acculturated to U.S. society, however, were more likely to institutionalize their relatives.

For a selective annotated bibliography on older Hispanic Americans, see Applewhite and Torres (2004).

Asian and Pacific Islander Elders

Asian and Pacific Island Americans encompass at least 16 ethnic and cultural groups, often with little in common in terms of language, culture, religion, and immigration history. The largest group of Asian older Americans is Chinese (30%), followed by Japanese (24%), Filipino (24%), Korean (8%), Asian Indian (5%), and other backgrounds (Vietnamese, Cambodian, Laotian, Hmong, Thai, Pakistani, and Indonesian). The

largest group of Pacific Island Americans are Hawaiian and Samoan, followed by Polynesian, Micronesian, and Melanesian. There are many other smaller islands that could be included as well.

It is difficult to generalize within this diverse group. The poverty rates for older Japanese, Filipino, and Asian Indian Americans are low, while the poverty rates for older Southeast Asians are very high, reaching as high as 47% among the Hmong elders. Within this diverse group is the highest proportion of older people with less than a ninth-grade education, but also the highest proportion of those with a bachelor's degree or more.

Among Southeast Asian Americans, only 2% of the population is elderly because the refugee experience limited the number of elders who could immigrate, and as relative newcomers to America, most have not reached age 65 since their arrival. At the other end of the spectrum are the Japanese elders in America, who currently constitute 7% of their American population. The percentage of Japanese elders is expected to grow due to the current limitation on the immigration of younger persons from Japan.

After the Japanese attack on Pearl Harbor in 1942, 110,000 Japanese Americans living in the western states were incarcerated. It is believed that many of these now elderly Japanese Americans tried to suppress their Japanese ancestry, often teaching their children to do the same. This is one example of the dramatic differences in the life experiences of older adults among the various Asian American and Pacific Islander ethnic groups.

Asian and Pacific Islander cultures traditionally emphasize the importance of family bonds and the unquestioned authority of elder family members. The extent to which younger family members abide by these traditional values and beliefs, however, is varied. In fact, among Southeast Asian American elders, the traditional family roles are often reversed. More than 85% of the elders live with younger family members, who provide almost all of their economic and social support. This transfer of authority to the younger generation is one example of the difficulties that these elders have had in adapting to American culture.

In general, though, it appears that Asian American baby boomers still provide more caregiving support for their parents than other ethnicities (see Table 13.2).

Yet the erosion of family caregiving support over the past decade has been revealed in other ways. Vietnamese elders, for example, are now being placed in nursing homes in America, something that was not condoned 15 years ago.

An interesting alternative that has begun to emerge in the Asian American community is the ethnically oriented assisted living facility—sprouting up across America from Seattle to the Lower East Side of

TABLE 13.2 Percentage of Persons Aged 45–55 Caring for Parents by Ethnicity

Ethnicity	% providing care
White	19
African American	28
Hispanic American	34
Asian American	42

Note. From *In the Middle: A Report on Multicultural Boomers Coping With Family and Aging Issues*, by AARP, July 2001, Washington, DC.

Manhattan—that caters to older Asian immigrants (Kershaw, 2003). These facilities provide ethnic foods like miso soup, soba noodles, and dark-roasted teas that are the staples of the older Japanese American diet as well as traditional games, such as *rummi kub*. Even among Asian adult children who were brought up to believe that they would take care of their aging parents in their homes, assisted living facilities that provide ethnic support for older residents are becoming an increasingly attractive option.

For a selective annotated bibliography on older Asian Americans and Pacific Islander elders, see Yee and Yeo (2004).

Native American Elders

Native Americans are defined by the Bureau of the Census as American Indians, Eskimos, and Aleuts. As members of 562 federally recognized tribes (and about 100 nonrecognized tribes), Native Americans are exceptionally diverse, both culturally and linguistically.

Native Americans have the smallest percentage of adults living to age 65—only 5.4%—among all cultural groups. A 1981 study by the National Indian Council on Aging found that at age 45, reservation-dwelling Native Americans had the health characteristics of the average American at age 65. Urban-dwelling Native Americans had these elderly characteristics at age 55.

Because many do not live long enough to develop them, Native Americans have less heart disease and cancer than the general population, but more pneumonia, influenza, diabetes, accidents, chronic liver diseases, septicemia, gall bladder disease, and hypertension (Butler et al., 1998). Since 1955, the Indian Health Service has focused its resources on treating infectious and acute diseases that occur in infancy through young adulthood, with few resources available for managing the chronic diseases of aging.

There is widespread poverty among Native Americans, and as late as 1984, 25% of them lived in households without plumbing. Elderly Native Americans have had a work history of high levels of unemployment and low-wage jobs, with 65% having worked as semiskilled workers, unskilled workers, or farm workers. Only about 22% graduated from high school, and 12% had no formal education at all.

For a selective annotated bibliography on older American Indians, see John (2004).

National Organizations With an Emphasis on Minority Aging

American Society on Aging, Network of Multicultural Aging, 833 Market Street, #511, San Francisco, CA 94103; 415-974-9630; http://www.asaging.org.

Asian and Pacific Islander Health Forum, 450 Sutter Street, #600, San Francisco, CA 94108; 415-954-9988; http://www.apiahf.org.

Asociacion Nacional Pro Personas Mayores, 234 E. Colorado Boulevard, #300, Pasadena, CA 91101; 626-564-1988; http://www.anppm.org.

Association of Asian Pacific Community Health Organizations, 300 Frank H. Ogawa Plaza, #620, Oakland, CA 94612; 510-272-9536; http://www.aapcho.org.

National Caucus and Center on Black Aged, Inc., 1220 L Street, NW, #800, Washington, DC 20005; 202-637-8400; http://www.ncba-aged.org.

National Hispanic Council on Aging, 1341 Connecticut Avenue, NW, 4th Floor, 4.2, Washington, DC 20036; 202-429-0787; http://www.nhcoa.org.

National Indian Council on Aging, 10501 Montgomery Boulevard, NE, #210, Albuquerque, NM 87111; 505-292-2001; http://www.nicoa.org.

Office of Minority Health Resource Center, The Tower Building, 1101 Wootton Parkway, #600, Rockville, MD 20852; 800-444-6472, 240-453-2882; http://www.omhrc.gov.

CULTURE

Culture has been defined as our entire nonbiological inheritance. Among those who believe that cultural differences among older adults are at least as important as socioeconomic differences are the academicians who refer to themselves as *ethnogeriatricians*. The field of *ethnogeriatrics in*

health care focuses on the ability to provide health care in ways that are acceptable to older adults because they are congruent with their cultural backgrounds and expectations.

One topic of particular interest to ethnogeriatricians is the degree to which the *acculturation* of the older person—the incorporation of mainstream cultural values, beliefs, language, and skills—affects health care and health behavior. In other words, to what extent does identification with one's ethnicity or racial category, versus identification with mainstream culture, affect one's belief in allopathic medicine and the efficacy of scientific treatments; one's ability to work with a health care provider of a different cultural background; one's need for dependence on family for decision making in health care; one's belief in the control over health outcomes; and one's willingness to negotiate with a complex medical bureaucracy?

Communication between persons with different cultural identifications can be problematic. Some people prefer a slower pace of conversation in a health care setting, while others prefer a fast-paced conversation and expect to be interrupted. Some patients prefer close physical proximity when communicating, while others prefer to be an arm's length away. Some cultures prefer eye contact, while others may consider this disrespectful. Some cultures value stoicism or mask their emotions with laughter or a smile, while others encourage open expression of pain, sorrow, and joy. The etiquette of touch, hand gestures, and finger pointing is highly variable across cultures. There is also a diversity of attitudes toward the subjects of death and dying, ranging from a preference for direct communication to the stance that these topics are inappropriate for discussion.

Communication is also hampered by the lack of appropriate foreign language access in medical clinics and health care settings around the country, as cited in the 2002 Institute of Medicine's *Report on Unequal Treatment*. This situation is particularly burdensome for Hispanic elderly because 40% do not speak English.

When offering health care, health education, disease prevention, or health promotion programs to minority or ethnic older adults, the following precautions are recommended by Dorfman (1991):

1. Ethnic communities need to establish their own health priorities and be involved in program development and implementation.
2. Factors affecting accessibility within a community must be identified and addressed.
3. Language should be familiar, nontechnical, concise, factual, and specific.

4. Nonprint formats, such as videotapes, audiotapes, slide shows, songs, games, and plays, should be encouraged.
5. Printed materials should use large type, be attractive, and make generous use of photographs and drawings of older peers.
6. Communication should acknowledge and incorporate cultural beliefs, and visual images should include familiar people, settings, and symbols.
7. Efforts toward cultural sensitivity must be sustained and reinforced over time.

Just as there is diversity among cultural groups, there is diversity within cultural groups. A Spanish-speaking grandmother with little formal education may have little in common with an English-speaking, college-educated, gay older male, though both came from Cuba and are presently living in Miami. Cultural insensitivity can just as easily come from stereotyping the older person's cultural affiliation as from ignoring his or her cultural affiliation completely. One's degree of ethnic or minority identification may be affected by educational level, the primary language, religion, gender, year of immigration, and so forth.

When communicating with diverse older persons in a medical or community health setting, cultural sensitivity may be enhanced by asking a series of questions:

1. In times of illness or need, to whom do you turn for health information or care?
2. What help or assistance do you expect from your family members?
3. Are there ideas that you grew up with that help you to explain your specific illness or health problem?
4. What types of traditional medicine, or alternative medicine, do you use?
5. Do your health beliefs or practices differ from what you find in medical care or community health settings?
6. What are your attitudes toward medicine in this country, and how soon in the course of an illness do you seek to access it?
7. What roles do traditional foods play in your health? Are these foods accessible and affordable?
8. What advice would you give to health care providers about your health care?

For additional health education questions that may be asked of culturally diverse older adults in the areas of nutrition, exercise, social support,

folk medicine and religious healing, and trust and communication, see the article by Haber (2005a).

Nurses in particular appear to be paying attention to how to incorporate cultural considerations into the health care they provide (Giger et al., 1997) and into the patient education materials they create (Wilson, 1996). For additional information on how culture and language affect the delivery of health care, go to the Web site http://www.diversityrx.org.

Physicians in New Jersey must take cultural competency training before they can get medical licenses from the State Board of Medical Examiners. State legislators in Arizona and New York have proposals to require medical schools to teach a course in cultural competency as a graduation requirement. California legislators have proposed a continuing education requirement for doctors in cultural and linguistic competency. In short, states are taking steps to reduce health care disparities and to make sure that physicians are more responsive to cultural and language differences among their patients.

The Commonwealth Fund issued a report entitled *Cultural Competence in Health Care* (Betancourt & Carrillo, 2002), highlighting exemplary practices. For example, the Family Practice Residency Program at White Memorial Medical Center in Los Angeles provides 30 hours of cross-cultural training for all family practice residents that includes topics like the role of traditional healers. The state of Washington provides reimbursement for certified interpreters and translators for Medicaid beneficiaries, with eight languages readily available. The Kaiser Permanente Medical Center in San Francisco encourages workplace diversity, on-site interpreters, and an emphasis on culturally competent care delivery. The Sunset Park Family Health Center Network at the Lutheran Medical Center in Brooklyn, New York, trains Chinese-educated nurses to upgrade their clinical skills in order to pass state licensing examinations, provides language and interpretation services, and celebrates various religious and cultural holidays.

SOCIOECONOMIC STATUS

At retirement, the African American median household income is only 48% of the White median household income, and the Hispanic median household income is only 40% of the White. Social Security benefits account for more than half of African American and about two-thirds of Hispanic median household retirement income, in comparison to a little more than one-third of White median household retirement income. Viewed another way, 8% of White older adults live in poverty, versus approximately 25% of Hispanic and African American older adults. This

leads to a major question in sociology and health: In terms of health care and health behavior, which has more explanatory power: ethnic differences or socioeconomic status? Though the evidence leans toward socioeconomic status, the question has yet to be fully answered.

One study reported that, regardless of ethnicity, poor patients with less education do poorly after heart surgery. They are less likely to survive it, or if they do survive, they will have a lower quality of life than persons more advantaged in terms of income and education level (Elliott, 2000). Persons of lower income and educational level seek treatment later in the course of the disease, are less likely to follow the treatment plan, and are more likely to cut back or discontinue medication because of its cost.

Type II diabetes patients who are disadvantaged by education and income are more likely to have problems reading prescription bottles, educational brochures, and nutrition labels. Consequently, they have more difficulty with blood sugar control and more diabetes-related complications than persons with higher income and literacy levels (Schillinger et al., 2002).

A survey of 1,599 poor urban residents ("Urban Obstacles," 1996) revealed that economic factors alone impinge on good health habits. Twice as many low-income adults reported feeling worried about the safety of walking in their neighborhoods as did higher income adults, and they reported less access to safe parks or recreational facilities. Twice as many low-income respondents reported that fresh fruits and vegetables were not readily available where they shopped, and when they were available, they cost too much. Another study of low-income versus high-income families reported that low-income families eat more processed foods and less fruits and vegetables and pay more for what they eat ("Vanishing Inner-City," 1996).

One study reported that lower socioeconomic status was more important than race in determining the quality of medical care for women with breast cancer (Bradley et al., 2002). A similar finding was cited in a different study, with more than half of the racial disparity in breast cancer screening of older adults explained by income and education (Schneider et al., 2002).

This same study, however, reported that racial differences were more important than socioeconomic differences when it came to eye examinations for patients with diabetes, administering beta-blocker medications after heart attacks, and following up after hospitalizations for mental illness (Schneider et al., 2002). A study of Medicare patients reported that when patient income, education, and attitudes were controlled, race was still a factor, with only 46% of African American Medicare patients receiving flu shots, versus 68% of White Medicare patients (Schneider et al., 2001).

It appears that culture, independent of socioeconomic status, may be influential in specific health care realms. However, research studies that

attempt to separate out the relative influence of income and education versus ethnic and cultural differences on health care patterns and health behavior change are definitely the exception rather than the rule.

RURAL AGING

In 2003, rural Americans were spread out over four-fifths of the land area but made up only 17% of the U.S. population. Among older adults, the percentage was higher, with 23% residing in rural areas. Living in a rural area increases the probability of living in poverty; income levels for older rural families are about one-third lower than those for older urban families.

The combination of lower income and rural living is associated with substandard and dilapidated housing; a larger number of health problems; greater likelihood of living in a community without a doctor, nurse, or medical facility; inadequate caregiving support complicated by the migration of children to cities in search of work; challenging transportation issues due to longer distances to drive to needed services, lack of public transportation, and poor roads; and greater likelihood of having an attitude of distrust toward the health care system or to have been instilled with an attitude of independence and self-reliance and a reluctance to demand needed health services (HRSA, 2002).

Nurses, social workers, physicians, and other health professionals are in short supply in rural settings. This is due, in part, to health policies, such as lower reimbursement for health providers in rural settings, but also to the lack of community and health care resources in many rural locations. Health professionals are concerned about locating in rural areas that may lack quality public schools, cultural opportunities, and sophisticated hospital equipment. Consequently, there are 10 internists per 100,000 population in rural areas compared to 52 per 100,000 in urban areas (Elliott, 2001a).

Elderly persons who live in rural areas receive fewer services per home health care visit, and they have poorer health outcomes than their city-dwelling older adult counterparts (Schlenker et al., 2002). These findings may represent the accommodation of rural home health providers to rural realities, such as the lower availability of certain health care personnel, like physical therapists, or longer travel distances.

On a variety of measures, rural populations are in poorer health and at higher risk for poor health due to harmful health behaviors. Adults living in rural areas are more likely to smoke and have limited activity levels due to chronic conditions (HRSA, 2002); to be overweight ("Wisconsin Study," 1996); and to have a higher rate of self-reported depression and

a more negative self-appraisal of health (Thorson, 2000) than their counterparts in urban areas.

Rural elderly exhibit a larger number of medical problems than urban elderly, problems that also tend to be more severe (Coward & Lee, 1985). Rural elders are more likely than their urban counterparts to rate their health as poor or fair, to be heavy drinkers, and to *not* be "uniquely advantaged by embeddedness in strong, supportive kin networks" (Lee & Cassidy, 1986, p. 165), even though the rural stereotype of strong kin support suggests the contrary.

Inadequate accessibility of health care services makes it especially important that rural residents engage in prevention and health-promoting behavior. The adoption of health-promoting practices by older adults in rural areas may be enhanced through the encouragement of health care professionals. A survey of family and general practice physicians in rural Mississippi revealed that such encouragement is more likely if a staff person is assigned by the physician to preventive medicine education and if flow charts are used to direct physician attention to needed prevention activities (Bross et al., 1993).

Rural Resources

The Rural Assistance Center (RAC) makes referrals to federal and state agencies, provides publications, and serves as a clearinghouse for rural information. The RAC is the repository of rural information on more than 225 different federal health programs and additional private programs. The Web site includes searchable databases, Congressional bill tracking, and quarterly newsletters. Contact the Rural Assistance Center, School of Medicine and Health Sciences, #4520, 501 North Columbia Road, Stop 9037, Grand Forks, ND 58202; 800-270-1898; http://www.raconline.org.

Inquiries can also be directed to the Office of Rural Health Policy, Health Resources and Service Administration, 5600 Fishers Lane, 9A-55, Rockville, MD 20857; 301-443-0835; http://www.ruralhealth.hrsa.gov.

The Rural Health Resource Center is a nonprofit organization that provides technical assistance, information, tools, and resources for the improvement of rural health care. Contact the Rural Health Resource Center, 600 E. Superior Street, #404, Duluth, MN 55802; 218-727-9392; http://www.ruralcenter.org.

GLOBAL

The major source of diversity in global aging is based on whether a country is economically developed or not. For example, there is almost a 20-year

difference in life expectancy in Sweden versus India. In the more developed countries of the world, the population aged 65 and above rose from 8% to 14% of total population between 1950 and 2000 and is projected to rise to 26% by 2050 (AARP, 2001).

Population aging is occurring rapidly in some of the developing world as well. Owing to a significant decline in fertility and an improvement in adult mortality in China, persons aged 65 and over now constitute about 7% of the population but are projected to rise to 13% by 2025 and to 25% by 2050. The population increases in other developing countries are much more modest. For instance, nearly 5% of Indians are now aged 65 or older, and members of this age group are projected to rise to 8% in 2025 and to 15% in 2050. Nearly 60% of the world's older population lives in less developed countries today. This percentage will decline over the next couple of decades but then is expected to rise to almost 80% in 2050 (AARP, 2001).

The increase in the percentage of older adults in developing countries may present additional challenges for the future. The economist Young-Ping Chen noted that "the developed countries got rich before they got old; the less developed countries are getting old before they have a chance to get rich" (AARP, 2001). Thus the rise in the number of countries with old-age disability or survivors programs—from 33% in 1940 to 74% in 1999—may not keep pace with the growing number of older adults in developing countries. Conversely, these developing countries may have to rely even more heavily on a less prosperous informal network of family and community to support their burgeoning older adult population.

In China, for instance, 70% of older adults are supported by their families, and only 16% rely on the government's troubled pension system. Yet China's traditional extended family is dispersing more rapidly than ever before, and adult children are now leaving their elderly parents to fend for themselves. As the young move toward urban jobs, socialized medicine in rural areas has collapsed. In less than a generation the rural population, where many older Chinese reside, went from universal health coverage to 79% uninsured.

The increase in the percentage of older adults in developed countries also present challenges for the future. In 2004, Japanese women had a life expectancy of 85.6 years (making them the world's longest living group for the 20th consecutive year) and Japanese men 78.6 (placing them second behind Icelandic men, who live 78.8 years). About 20% of the population is over the age of 65. The aging of Japan has strained the time-honored tradition of living with and caring for grandparents under one roof. Between 1995 and 2005, the number of Japanese seniors living alone or with elderly spouses doubled. The cost of government assistance to the elderly during this time period increased 71%, amounting to 12% of Japan's annual gross domestic product.

As the Japanese elderly continue to increase and the birthrate drops, seniors are expected to account for 29% of the population by 2025. Smaller families combined with adult children seeking jobs in cities lead to lack of space, desire, and financial ability to care for parents in urban settings. While many retirees are drawing pensions, fewer and fewer working-age people are paying into them. Premiums are expected to rise in Japan as benefits are curbed.

Many other developed countries are being challenged as well. As the number of working-age individuals for every older adult shrinks, we are learning about the magnitude of the economic strains this increasing dependency ratio produces. There is a potential, for instance, for conflict over funding for Social Security and health care for older adults versus a country's need to support public schools and unemployment benefits for younger adults.

In the United States, women can expect to live to 80.4 years and men to 75.2. Though the country has been getting older, the United States is still absorbing many young immigrants. As a consequence, the dependency ratio of workers to older adults in the United States is declining more slowly than in countries that are aging without much immigration.

This trend delays the inevitable crisis in the dependency ratio but does not prevent it, especially with pressure to limit immigration from Mexico. As the dependency ratio increases along with the baby boomers becoming eligible for Social Security and Medicare, Social Security taxes will rise in the United States as pension and health benefits are reduced.

To find out more about international policy and research on aging, a free monthly e-mail copy of the AARP Global Aging Newsletter can be received by contacting the AARP Global Aging Program at intlaffairs@aarp.org.

Aging and the International Cinema

An interesting analysis of 14 international feature-length films between 1988 and 2003 provides those interested in the field of cross-cultural aging with models of successful aging by elders valued within their communities (Yahnke, 2005). Elders serve as role models and mentors for the young and middle-aged, and they apply experience and wisdom to the crises that they discover—and sometimes create. In general, old age in international cinema is viewed as a time of strength, and the old as an integral part of family and community.

I have seen 10 of the 14 films, and I can personally recommend them to you as an excellent way to sensitize yourself to cross-cultural aging. These wonderful films highlight the hope, joy, and inspiration that can

be found in old age. Too bad we have so few examples to draw on from American cinema:

Antonia's Line (Holland, 1995)
Babette's Feast (Denmark, 1989)
Central Station (Brazil, 1998)
Cinema Paradiso (Italy, 1990)
Eat Drink Man Woman (Taiwan, 1994)
The King of Masks (China, 1996)
Last Orders (United Kingdom, 2001)
Minor Mishaps (Denmark, 2002)
Shower (China, 2000)
Since Otar Left … (France, Belgium, 2003)
Spring, Summer, Fall, Winter … and Spring (South Korea, 2003)
Tea With Mussolini (United Kingdom, Italy, 1999)
Waking Ned Devine (Ireland, 1998)
Yi Yi: A One and a Two (Taiwan, Japan, 2000)

Two additional films received well-written reviews in the June 2006 issue of *The Gerontologist*. *Ladies in Lavender* (2004) is an English film reviewed by Bradley Fisher and is about an older woman who converts a potentially foolish love experience into one of self-knowledge and inner peace. *Autumn Spring* (2003) is a Czech film reviewed by Howard Schwartz and is about an older husband full of mischief and an older wife ready to disengage from life, and how they reconcile, thankfully, toward the husband's perspective on life. Once again, I can personally recommend these films, and I encourage you to take advantage of these opportunities to learn about cross-cultural aging in such an enjoyable way.

QUESTIONS FOR DISCUSSION

1. What makes the most demographic sense to you: One category for persons aged 65 and older, or a separate category for the old-old? If there are to be separate categories after age 65, at what chronological age(s) would you separate older age group(s)? Explain your answer.
2. Women live longer, are better connected socially, and commit suicide less often in late life. On the other hand, they appear to have more health burdens and more financial burdens. Who is better off in America: older women or older men? Why?
3. Think about the differences between the genders, and state how you think Medicare is male biased.

4. What is one advantage and one disadvantage of the blurring of racial and ethnic categories that is now taking place in America?
5. African American elders appear to have the greatest amount of homogeneity among the four minority categories recognized by the U.S. Census Bureau. Is that an advantage or disadvantage when it comes to community advocacy? Why?
6. In terms of the health care and health behavior of older adults, which do you believe has more explanatory power: racial and ethnic differences or socioeconomic status? Justify your opinion.
7. If you were launching a health promotion program for older adults, what are some of the details you would need to consider that are unique to a rural setting?
8. Are there lessons that developed and developing countries *can offer each other* when it comes to the role of older adults in society? To the care of older adults in society?
9. Vietnamese elders are now being placed in nursing homes in America, something that was not condoned 15 years ago. From the perspective of Vietnamese adult children caregivers, do you think this trend is a positive or negative contribution to their lifestyle? Why do you believe that?
10. Examine one other topic in this chapter that you found interesting and has not been explored when answering the previous questions. Why did you find this interesting?

CHAPTER FOURTEEN

Public Health

Americans live about 30 years longer than they did a century ago, and most of this accomplishment is due to triumphs in public health, such as improvements in sanitation, water quality, air quality, hygiene, immunization, and health education. Public health differs from medicine in that it focuses on preventing disease and promoting health in whole populations, rather than treating disease and injury in a single patient.

Most Americans today, however, have much less awareness of public health care in this country than they do of medical care. The best known aspects of public health relate to the goals of maintaining clean water and a clean environment, food safety, and control of communicable disease. But these public health roles come to the attention of the public only when there is a threat to water or food safety or when there is an outbreak of a drug-resistant infection.

Even less well known to the public is the role that public health plays in gathering health information, conducting screenings and immunizations, providing health education, and conducting health interventions. These types of activities reflect public health's concern with a broad range of health factors that influence the quality of life of individuals, families, groups, and communities.

The public's lack of awareness of these endeavors is probably due to the fact that relatively little funding (miniscule in comparison to what we spend on medical care) is targeted to support these types of public health activities. Ironically, in 2002, when there was a modest infusion of federal funds into public health departments for bioterrorism preparedness, cash-strapped state and local governments were forced to slash their public health budgets for health education and health interventions by a substantial amount.

Another factor that contributes to the anonymity of public health efforts in the areas of community health education and intervention is

that its diminutive budget is focused on low-income young mothers, adolescents, and children. Public health has largely ignored aging adults, despite the steady increase in the average age of the American population. One report concluded the following:

> the new challenge for public health is to develop a focus on healthy aging.... Inadequate resources and attention are focused on health promotion and prevention of disease or secondary disability for older adults, the very population that experiences the highest rates of chronic disease and disability. (Palombo et al., 2002)

The study authors also noted the lack of collaboration between public health departments that attempt to improve overall health in the community and the small network of practitioners in aging agencies who strive to improve the quality of life for aging persons. This raises the question, What if this collaboration between public health and aging was strengthened as well as backed by substantial resources?

Additional questions are then raised: How would public health foster healthy aging in American society? What policies and practices would it attempt to implement? How would additional funding be generated, and how would escalating medical expenditures be reduced? I will examine these questions next, beginning with a section that proposes the establishment of a Wellness General of the United States.

At the end of an earlier edition of this book, in the final chapter, the concluding subsection was entitled "President Haber." In the last two paragraphs I proposed my health promotion platform for the country. It consisted of four sentences on three moderately controversial priorities: universal health care, reimbursement for health promotion that has proven to be effective, and federal resources to help promote more physical activity among Americans.

For this edition of my book I expand my platform to dozens of proposals and escalate the controversial nature of some of them. I attribute this change to the aging process. I may or may not be growing wiser with age, but it does appear that I am growing bolder.

WELLNESS GENERAL OF THE UNITED STATES

My first task as president will be to convert the position of the surgeon general of the United States to wellness general of the United States. The designation *surgeon general* refers to the chief medical officer of a military, state, or federal public health service. At the federal public health service level the position of surgeon general of the United States is filled

by a physician selected by the president for the purpose of leading the nation toward better health. The physician primarily uses this office as a bully pulpit, exhorting policy makers, community leaders, and citizens toward healthier lifestyles.

The proposed wellness general of the United States will have new resources and responsibilities (Haber, 2002b). The resources will be generated by a junk food tax. The responsibilities will be to (a) strengthen wellness research and (b) increase wellness utilization at the state, community, family, and individual levels. Before examining these two responsibilities, the term *wellness* and the generation of resources through a controversial junk food tax will be reviewed.

Wellness

Surgeon general is a military term that can be disconcerting to advocates of wellness. The *general* part of the term may be accepted within the narrow definition of a leadership position. The word *surgeon*, however, is not as easily salvageable. It is derived from the domain of medicine and narrowly linked to an operation or a manual procedure relating to physical disease or injury. *Wellness*, on the other hand, is a broader term that includes not only disease and injury, but health promotion and disease prevention; not only the physical realm, but the emotional, social, intellectual, and spiritual domains.

Although the term *wellness* has had many supporters in the health professions over the past 25 years (Jonas, 2000), it tends to be less recognized than the terms *health promotion* and *disease prevention*. Health promotion, also referred to in the medical domain as primary prevention, refers to mainstream interventions like exercise, nutrition, and stress management that have relevance to a variety of diseases or disabilities and to immunizations that are targeted to prevent specific diseases.

Wellness, however, conveys one additional important message—that good health is more than physical well-being and that it is more than a response to actual or potential disease or disability. Ardell's (2000) definition is the most cogent: optimal health and life satisfaction that includes physical elements (exercise and nutrition), psychological aspects (stress management and emotional intelligence), social and intellectual elements (connectedness to significant others and passionate ideas), and spiritual components (seeking meaning and purpose in life).

Although exercise, nutrition, and stress management are the most familiar and practiced components of wellness (and its cousin, health promotion), it tends to be the more alternative activities—herbal medicine, chiropractic, acupuncture, massage therapy, spiritual healing, aroma therapy, relaxation techniques, self-help groups—that are associated with

wellness. Perhaps this is due to the tremendous growth in these activities over the past decade and the significant amount of media attention devoted to them.

Because a wellness general will cover more territory than a surgeon general and have more responsibilities (to be examined later), it will be necessary to increase the stature and resources of the position. Stature can be increased by elevating the position to cabinet-level status, complementary to the secretary of Health and Human Services. Resources can be increased by legislating a wellness budget and funding it through junk food taxes.

Junk Food Tax

One way to create a budget for the wellness general is to craft federal legislation that mandates a small tax on junk food—candy bars, cookies, cakes, pastries, ice cream, soda, corn chips, tortilla chips, potato chips, and the remaining high-fat, high-sugar or high-salt junk foods that constitute over 20% of Americans' calories. Jacobson and Brownell (2000) estimate that a national tax of 1 cent per 12-oz soft drink would generate about $1.5 billion annually, and 1 cent per pound of candy, chips, and other snack foods would raise more than $100 million annually.

This is not a strategy without controversy. The main argument against junk food taxes is that the government should not pry into people's personal business. A *Washington Post* editorial (11/15/99), for instance, belittled then agriculture secretary Dan Glickman, who had reported, "It is the government's role to guide Americans into adopting a healthier lifestyle." The editor of the *Post* argued that we should tackle obesity and inactivity with common sense and self-discipline, rather than expecting government to do it for us. The editor also asserted that a tax on unhealthy foods "sounds like something the government-always-knows-best social engineers in Washington, D.C., could feast upon." Other newspaper editors have agreed that a tax on junk food is a bad idea (Jacoby, 1998).

Civil liberty concerns are raised as well. Wellness advocate Donald Ardell asks, "Don't we have a right to choose what we eat? Should we also tax those who do not exercise enough? What about those with no sense of humor? Now there's a group to sock with a big tax hit!" (personal communication).

Those opposed to junk food taxes ask the question, If government gets more involved with promoting individual health, will it interfere with individual freedom and personal responsibility (Callahan, 2000)? Those in favor of junk food taxes respond that if government gets involved successfully, the resulting wellness outcomes will enhance individual freedom

and responsibility as well as the interests of society. These opinions and values are difficult to reconcile.

Philosophical concerns aside, there are so-called sin taxes that work. As noted in chapter 9, Selected Health Education Topics, cigarette taxes reduce smoking and are followed by a reduction in lung cancer rates (Pechacek, 2000; "State Tobacco Programs," 2000; "Voters Allow," 2000). It may be unreasonable to also assume, however, that taxes will reduce the consumption of junk foods. There is little doubt that these foods are unhealthy and costly to our health care system—with a conservative estimate of over $70 billion annually for diet-related diseases (Frazao, 1999). But food consumption habits are probably shaped more by advertising dollars than by food taxes. And unlike tobacco products, there are no regulations to curb food product advertising.

Quite the opposite situation exists, in fact. McDonald's marketing budget in 1999 was $1.1 billion. Coca-Cola's was $866 million (Jacobson, 2000). Many billions of advertising dollars encouraged the consumption of high-fat, high-sugar, and high-salt products. In contrast to this spending spree, the National Cancer Institute spent $1 million to promote its 5-a-Day (fruits and vegetables) campaign (Jacobson & Brownell, 2000).

Even if a junk food tax could counter the effect of advertising and lower the consumption of junk food, wholesalers and retailers could regain sales levels by absorbing the tax burden through price reductions. And if the taxing authority countered these price reductions with additional tax increases, low-income persons would bear the highest tax burden (Marshall, 2000).

The implementation of small, not very burdensome taxes on junk food, however, could be instituted for the purpose of raising revenue, rather than curbing consumption. Nineteen states and cities in the United States and seven provinces and the federal government of Canada levy taxes on nutritionally deficient foods such as soft drinks, candy, chewing gum, potato chips, and so forth (Jacobson & Brownell, 2000). Nationally, these special taxes on junk foods generate about $1 billion a year.

Much of these tax revenues, though, are spent on nonhealth activities. Another problem is that raising taxes on junk food at the state, county, or city level—no matter how modest—can provoke junk food industries to fight back. In response to industry threats or incentives (e.g., not to build, or to build, manufacturing or distribution centers), 12 cities, counties, or states have reduced or repealed their junk food taxes (Jacobson & Brownell, 2000).

It makes more sense, therefore, to implement junk food taxes at the federal level, rather than at a lower level of government. It also makes more sense to implement junk food taxes for the purpose of implementing

community wellness programs that have undergone research scrutiny than for the purpose of reducing the consumption of junk food or raising revenue for nonhealth purposes.

Strengthen Wellness Research

One of the two primary responsibilities of the wellness general will be to strengthen wellness research (left side of Figure 14.1). Wellness, health promotion, and disease prevention have not been high research priorities in the American research community (Woolf & Johnson, 2000). Moreover, the research that has taken place has been scattered among the various institutes of the National Institutes of Health and other funding sources. The wellness movement will therefore benefit if funding for research is not only increased through a budget generated by a junk food tax, but consolidated into and coordinated through one of the Institutes of Health.

A good candidate to house wellness research is the National Institutes of Health's National Center for Complementary and Alternative Medicine (see chapter 8, Complementary and Alternative Medicine), which can be renamed the National Center on Wellness.

The National Center on Wellness

The wellness general of the United States will authorize the conversion of the National Center for Complementary and Alternative Medicine into the National Center on Wellness (NCW). The NCW will continue to fund research on complementary and alternative medicine therapies like acupuncture, dietary supplements, and meditation. It will place additional emphasis, however, on research to improve the utilization of proven mainstream therapies like exercise, nutrition, immunizations, and smoking cessation. These interventions are still not practiced widely enough (McGinnis & Foege, 1993), and more research is needed on how to implement these strategies effectively.

U.S. Preventive Services Task Force

The NCW will not only fund mainstream and alternative research topics, it will be coordinated with the U.S. Preventive Services Task Force (USPSTF). The USPSTF publishes *The Guide to Clinical Preventive Services*, the definitive resource manual on evidence-based recommendations for prevention services (see chapter 3, Clinical Preventive Services). The wellness general will expand the content of this guide from a focus on prevention services to a broader range of wellness interventions, will

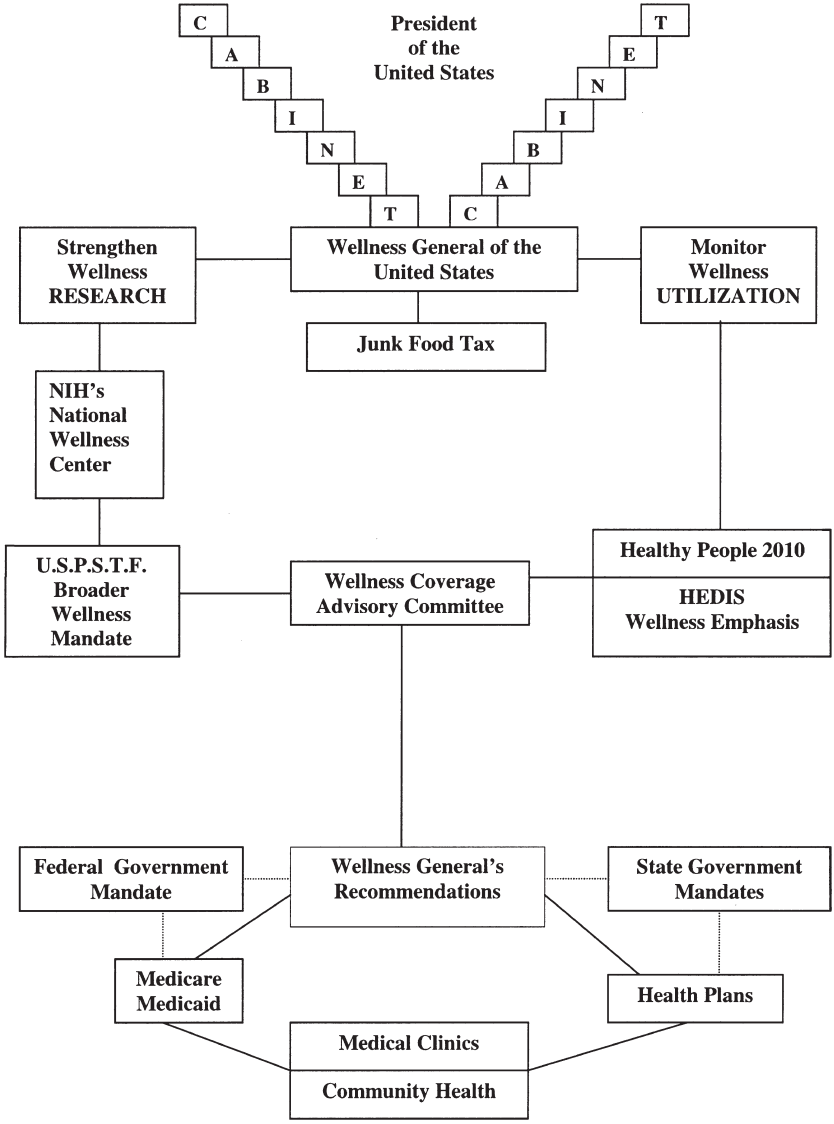

FIGURE 14.1 Wellness General of the United States.

summarize the state of research every 3 years, and will help link research findings to practice recommendations.

The link between research and its impact on clinical and community health practices has been lacking (Firman & Holmes, 1999; "Medicare Patients," 2000; USDHHS, 1998), despite the fact that *The Guide to*

Clinical Preventive Services has been a well-respected, evidence-based document. To correct this oversight, the wellness general will link the recommendations of the *Guide* to practical reimbursement decisions through the Wellness Coverage Advisory Committee (to be described later).

Increase Wellness Utilization

The second goal of the wellness general of the United States will be to increase wellness utilization at all levels of society, from state government, to private insurance, to work, to community, to clinics, to family, and to individuals (right side of Figure 14.1).

Healthy People 2010

Healthy People 2010 (USDHHS, 2000) is a public–private effort to promote health over the decade 2000–2010 (see chapter 1, Introduction). Although health goals are established, data compiled, and progress monitored, the financial support to achieve Healthy People 2010 goals is missing. This same limitation was an obstacle to the achievement of the ambitious goals set by the earlier initiative, Healthy People 2000. Percentage rates of physical inactivity, obesity, and cigarette smoking stayed fairly constant or even increased over the decade 1990–2000. The wellness general will need to set priorities that are *backed by financial support* in order to help Healthy People 2010 achieve its wellness goals.

Health Plan Employer Data and Information Set

In the private sector the National Committee for Quality Assurance (NCQA) is a nonprofit watchdog of managed care organizations that also provides accreditation. Each year, NCQA issues a report card on the quality of managed health care plans that is derived from its Health Plan Employer Data and Information Set (HEDIS).

HEDIS is based on 50 performance measures, only a few of which are wellness activities. The wellness general will encourage NCQA to expand the number of wellness services to be evaluated under HEDIS and to measure whether managed care organizations are effectively reaching out to beneficiaries and increasing the utilization rate of these wellness services (Asch et al., 2000).

Wellness Coverage Advisory Committee

The Wellness Coverage Advisory Committee (WCAC) will make reimbursement recommendations to the wellness general based on (a) the research

findings funded by the NCW, (b) the summary of these research findings and the recommendations made by the USPSTF, and (c) the percentage of persons needing to be engaged in such activities as documented by the Healthy People 2010 initiative and the HEDIS performance measures.

The WCAC is based on the existing Medicare Coverage Advisory Committee (MCAC). MCAC was created in 1998 to evaluate new therapies and to recommend to the Centers for Medicare and Medicaid Services whether to reimburse new treatments as part of the Medicare program (Cys, 2000). The wellness general, by converting the MCAC into the WCAC, will expand their mandate to evaluate a broader base of wellness interventions. Reimbursement decisions for specific interventions will be mandatory at the federal level (i.e., the Medicare program), but recommendations will also be forwarded to state governments and to the private sector, particularly to managed care organizations.

The WCAC will employ an additional innovation—the recruitment of consumers into advocacy roles on its committee. These consumer advocates will make sure that the research on a new wellness therapy has relevance to low-income individuals and other underserved elements of the population.

Wellness General Reports

The wellness general will continue in the tradition of the surgeon general and attempt to publish a major report each year or two in order to heighten America's awareness of important public health issues. The *Surgeon General's Report on Tobacco* in 1964, for instance, summarized the research on the health hazards of tobacco use, and many analysts believe it was a major factor in the 50% reduction in tobacco use that took place over the next 3 decades.

The 1979 *Surgeon General's Report on Health Promotion and Disease Prevention* became one of the most, if not *the* most, widely cited documents on the role that risk factors play in morbidity, mortality, and medical costs. This report also helped launched the Healthy People 1980 initiative and subsequent decade-long initiatives: Healthy People 1990, 2000, and 2010.

In 1996, the *Surgeon General's Report on Physical Activity and Health* did an excellent job of summarizing the research on the importance of moderate-intensity physical activity or exercise, the value of accumulating activity or exercise over the course of a day, the importance of resistance training along with aerobic exercise, and the utility of establishing an exercise habit of 30 min a day, most days of the week.

In 1999, the *Surgeon General's Report on Mental Health* reported on the surprising prevalence of depressive symptoms among older adults

and the inability of health professionals to identify and treat this problem. It also highlighted the reimbursement discrepancy between mental health and physical health problems.

In 2004, the *Surgeon General's Report on Bone Health and Osteoporosis* warned that by 2020, half of all American citizens older than 50 will be at risk for fracture if no immediate action is taken. There has been much scientific progress in the prevention and treatment of osteoporosis that can be systematically applied to alleviate this serious health problem.

In 2006, the *Surgeon General's Report on the Health Consequences of Involuntary Exposure to Tobacco Smoke* reported that there is no risk-free level of exposure to secondhand smoke. Nearly half of all nonsmoking Americans are still regularly exposed to secondhand smoke, which increases their risk of developing heart disease by 25% to 30% and lung cancer by 20% to 30%.

For additional information on these, and other, surgeon general's reports, access the Web site http://www.surgeongeneral.gov.

The wellness general will not only continue this important educational mission, but he or she will disseminate these reports to academic faculty who are training health care professionals, to health insurance administrators who are establishing health insurance policies, and to health practitioners who are implementing programs in medical clinics and community health organizations.

Wellness in Managed Care

Fee-for-service health insurance plans may continue to resist coverage for wellness services. Physicians, in turn, may continue to be disingenuous on insurance forms, claiming that patients who saw them for prevention and health promotion purposes were being treated for medical problems so that the insurer would cover the cost of the visit (Brody, 2000b). Managed care health insurance, on the other hand, with its tremendous growth at the end of the last millennium and an alleged emphasis on disease prevention and health promotion, ought to be more receptive.

The wellness general of the United States, however, needs to restore the promise of a wellness emphasis in managed care. During much of the 1990s, the promise was partially realized while enrollment greatly expanded. Between 1991 and 1997, Medicare beneficiary enrollment in managed care plans rose from 6% to 16%. Between 1992 and 1996, managed care enrollment among U.S. workers increased by 35% ("Managed Care Strives," 1998). By 1997, 85% of all U.S. workers were enrolled in some form of managed care.

Since 1997, though, the promise of wellness in managed care has been diminished under the shadow of medical costs that are rising rapidly once again. Wellness, health promotion, and preventive care programs have not expanded beyond token offerings. Managed care plans have been losing money or terminating business. Of 506 HMOs examined in 1997, 57% lost money (Jacob, 1998). Managed care organizations that had been making a profit for years reported their first losses ever in 1997. By 2000, managed care insurance companies claimed that payment rates were increasingly inadequate and bureaucratic obstacles remained high (Landers, 2000).

Regarding Medicare managed care, federal payments were not adequate to cover the cost of caring for older adults as managed care companies began to serve older adults who were increasingly frail. Consequently, between 1998 and 2003, 2.4 million Medicare managed care beneficiaries had to find other sources of health care coverage. The wellness general will need to restore wellness services to managed care in order to help offset its image as the management of costs and profits, rather than the management of quality care.

State Mandates

On the basis of studies documenting the cost-effectiveness of wellness interventions (Colditz, 1999), the wellness general will encourage state governments to follow the federal government's lead and mandate wellness insurance benefits. One study, a national survey of community-dwelling Medicare beneficiaries, reported that improved health behaviors lowered Medicare costs (Stearns et al., 2000). Similar results have been obtained in the managed care sector. Positive changes in physical activity, weight management, and smoking cessation among beneficiaries significantly lowered health plan expenditures within 18 months (Pronk et al., 2000).

Insurance companies may remain unconvinced, however, that wellness interventions can take effect quickly enough to benefit their bottom line, given the instability of beneficiaries (Brody, 2000b). Insurance plans do not want to invest in the health of clients who become healthier members of, and save money for, their next health care plan. The wellness general can circumvent this barrier by recommending state mandates that require *all* health plans to include comprehensive *or* specific types of wellness coverage.

The first state-mandated comprehensive wellness program, the New Jersey Health Wellness Promotion Act (NJHWP), was implemented on November 6, 2000. The NJHWP required most managed care and fee-for-service insurers in New Jersey to provide health and wellness

treatments. Health plans in New Jersey initially opposed the legislation, attempting to mandate extra fees for plans that adopt wellness activities. Their opposition stalled the program for 7 years, until they were successful in establishing a financial cap of $220. The state was expected to adjust this cap based on inflation, new scientific evidence, and the decision of an advisory board.

Other state health insurance mandates have primarily taken the form of mandatory coverage for specific cancer-screening tests (Schauffler, 2000). In 1999, 43 states and the District of Columbia mandated coverage for cancer screenings (Rathore et al., 2000). In contrast to the enthusiasm for cancer screenings, few states mandate coverage of counseling or behavioral interventions to address unhealthy behaviors like tobacco use, alcohol use, sedentary behaviors, and poor nutritional habits (D. Nelson et al., 2002).

State mandates that are narrowly focused on medical screenings for cancer can be influenced more by medical lobbyists than by evidence-based guidelines and recommendations (Schauffler, 2000). Even within the arena of medical screenings for cancer, questionable state mandates have been implemented. It is unclear, for instance, why more states (n = 27) mandate coverage of prostate cancer screening than of colorectal cancer screening (n = 17), despite the fact that there is stronger evidence for the benefits of screening for colorectal cancer.

To counteract medical lobbyists who encourage federal and state legislators to cover medical screenings with minimal additional health benefits, the wellness general's recommendations to both public and private health plans will be based on the recommendations of the WCAC.

Linking Medical Clinics and Community Health

Health insurance primarily covers treatments in hospitals and medical clinics. Unfortunately, the link between these medical institutions and community health programs barely exists. The wellness general of the United States will strengthen this relationship.

American adults visit or consult with their physicians on a regular basis, and the older they get, the more frequent the contact. In 1998, the average Medicare beneficiary visited or consulted with physicians 13 times during the year (Federal Interagency Forum on Aging-Related Statistics, 2000). On the basis of access alone, it is therefore a good idea to involve medical clinics in more than just medical care, but in the wellness of Americans.

In addition, medical personnel can be persuasive when it comes to recommending lifestyle changes. An attempt to quit smoking, for instance, is "twice as likely to occur among smokers who receive nonsmoking advice from their physicians compared with those who are not advised to quit" (Glynn, 1990). If every primary care provider offered a smoking cessation intervention to smokers, it is estimated that an additional 1 million persons would quit each year.

Unfortunately, clinic staff rarely find the time for even brief wellness counseling, much less to provide adequate patient education and sufficient follow-up. In this era of rising health care costs, additional time spent on patient health education at the medical clinic site is an unaffordable commodity. It is more feasible for clinicians to refer clients to less expensive health education specialists or trained peer leaders who conduct community-based health programs.

These community-based programs are likely to be more accessible, affordable, and effective when embedded in trusted institutions like the church, the school, and the senior center; and they are more likely to be affordable and sustained when led by trained peers who provide ongoing social support. One model program, the Chronic Disease Self-Management Program, was evaluated through a 6-month randomized controlled trial. Almost 1,000 adults at churches, community centers, and other sites completed a 15-hour, 6-week wellness program. The program cost $70 per participant and saved $750 per participant, primarily through fewer days in the hospital (Lorig et al., 1999).

Another model program, the Senior Wellness Project (since renamed Project Enhance), involved 201 adults and was also tested through a randomized controlled trial. The program cost $300 per participant and saved $1,200 per participant (Leveille et al., 1998). Given the government's emphasis on revenue-neutral legislation, "evidence of effectiveness should be supplemented when possible by information on cost-effectiveness" (USDHHS, 1996, p. xcii).

The wellness general will establish guidelines for the collaboration between medical clinics and community health programs. The guidelines will establish which services are reimbursable, client eligibility for services, criteria for provider expertise, and intervention content—including length and periodicity of interventions (Haber, 2001a, 2005b). Coverage policies will be updated to reflect the latest scientific evidence and to emphasize the need to reach low-income and other underserved components of the patient population.

The link between community health programs and medical settings is essential. Even seemingly benign wellness interventions, such as a walking program, can impact on medications and alter physiological parameters that affect medical treatment.

AN OPPOSING POINT OF VIEW (SORT OF)

Fire the wellness general! Get government off our backs! If the government is going to be involved in health promotion at all, let it focus on the social, environmental, and particularly the economic contexts in which health behaviors are shaped. Improve living conditions, and health behaviors will follow suit. Give individuals freedom and self-responsibility, instead of creating a backlash against health-promoting initiatives through government meddling.

Hire a wellness general, and where will Big Brother intrude next? Should government encourage a downhill skier to take a 30-min walk instead? Should government add to the stigmatization of overweight Americans by singling them out for ineffective interventions? Should government encourage insurance plans to be punitive toward smokers? If so, should it add overweight people, sedentary people, and, oh yes, those pesky downhill skiers to the list of scofflaws?

If this argument and these questions appeal to you, read Daniel Callahan's (2000) *Promoting Healthy Behavior: How Much Freedom? Whose Responsibility?*

Shortly after reading Callahan's book, I read *Food Politics* (Nestle, 2002) and *Fast Food Nation* (Schlosser, 2001). Another set of questions rose in my mind: Is it fair that the food and drink industries spend billions of dollars a year advertising high-fat, high-sugar, and high-salt products, and yet the federal government spends a few million dollars on nutrition education? Or as stated by Kelly Brownell, director of Yale University's Center for Eating and Weight Disorders, "The entire federal budget for nutrition education is equal to one-fifth of the advertising costs for Altoids mints."

Is it fair that diet-related diseases result in $70 billion in annual medical expenditures (Frazao, 1999) and that sedentary behaviors may cost even more, while 46 million Americans cannot afford health care insurance? Is it fair that research on increased physical activity and exercise reports an almost miraculous effect on disease protection and improved functionality, and yet we do so little to dislodge Americans from sitting in front of their television sets and computer screens?

And was it *unfair* that the federal government played such an important role (or meddled, depending on your point of view) in reducing the number of Americans who smoked cigarettes by 50%, in less than 3 decades?

Clearly this is no longer an opposing view. Read on if you are willing to be politically incorrect (in the era of "get big government off of our backs") and examine a big-government role in the promotion of healthy aging in our society.

AND NOW FOR THE REST OF THE WELLNESS GENERAL'S PLATFORM

Universal Health Care Coverage

In 2006, 46 million Americans, or 15.6% of the population, lacked health care coverage. This is not just an issue for young adults, but for late middle-aged people as well. More than 25% of adults between the ages of 51 and 57 will be uninsured at some point during the years preceding eligibility for Medicare (Baker & Sudano, 2005).

As stated by Edward Hill, MD, president of the American Medical Association, "Forty-six million uninsured in the richest nation in the world. I think that's a national disgrace. It's way past time for something to be done" (Monaghan, 2006).

Apparently, we treat health care as a privilege in this country and are willing to tolerate a huge number of uninsured people. Ironically, the only Americans who are guaranteed health care coverage (even Medicare beneficiaries must be able to afford premiums and deductibles) are prison inmates. One California inmate, in fact, received a million-dollar heart transplant. The right to access health care, however, does not extend toward nonconvicts.

I believe health care coverage should be a right for all Americans, not just prisoners, and that the federal government should provide universal health care. In my opinion the major barrier to accomplishing this goal is more financial than it is philosophical or political. It is hard to contemplate an expansion of health care coverage to all Americans during the first decade of the year 2000, when spending on health care nationwide almost doubled during the 1990s—as the uninsured increased! This growth in health care costs during the final decade of 2000 topped out at $1.3 trillion, and the increase in health care costs in the last year of the decade was the largest 1-year jump in 12 years (Landa, 2002).

As health care costs continue to escalate, to $1.9 trillion in the year 2005, along with the number of uninsured, to 46 million in 2005, states are jumping in where the federal government fears to tread. In 2006, 18 states introduced universal health care bills, most based on a single-payer model. Massachusetts and Vermont became the first two states to enact laws that created near-universal health care coverage for their residents.

The two state programs are similar in the following ways:

1. They offer health insurance subsidies on a sliding scale to residents earning up to 300% of the federal poverty level.
2. There are fines or fees for businesses with more than 8 (Vermont) or 11 (Massachusetts) employees that are not offering, or arranging for, employee health insurance.

3. There is a portable insurance plan that is linked to the individual and not to the employer.

The Vermont law also provides incentives for enrollees with chronic conditions who participate in a disease management program and payments for physicians who promote preventive care and healthy living.

As of this writing, though, the premiums, deductibles, and copayments were not established. Critics of the two health plans worried that the state laws would force individuals to purchase insurance they could not afford *or* purchase insurance they could afford but that provided minimal coverage.

Universal coverage can be sabotaged by rising medical costs. Outpatient prescription drug spending increased at double-digit growth throughout much of the 1990s, peaking at a 17.3% annual increase at the end of the decade. Health care spending overall continues to outpace the growth of the economy. Medicare, which consumes 12% of the federal budget, is projected to rise to 25% of the federal budget by 2025 with the onslaught of baby boomers—and this projection does not include costs associated with the new Medicare prescription drug benefit.

In order to provide national or statewide health care coverage, medical care spending must be brought under control. As unpopular as the idea is, health insurance, including Medicare, needs to be linked to a prepayment system that controls rising medical costs. The problem of escalating medical costs is not only getting worse, but the baby boomers are poised for retirement, and the problem will soon be of catastrophic proportions. Our political leaders, however, create policies that allow us to limp along until the end of their term, ignoring the growing problem of higher health care costs and fewer citizens covered by health insurance.

As we wait for political leaders who will implement universal health care on a national basis, I suggest the following actions in the near future:

1. Because people live longer and healthier, we need to accelerate raising the eligibility age for Social Security—scheduled to gradually increase to age 67 in 2017—to age 70 by 2015, raise early retirement benefits to age 65, and eliminate the maximum amount of earnings subjected to Social Security tax (a portion of which goes to Medicare).
2. In order to further increase revenue, wealthier retirees should pay higher Medicare premiums and cost-sharing (initiated in 2007 as this book went to press).
3. To cover low-income and uninsured patients, we need to increase community health center funding so that it provides a minimum package of medical care for all citizens. This action can be supple-

mented at the state or federal level with policies that waive liability insurance and registration fees for retired physicians and nurses who are willing and able to help out at the 3,300 community health centers and the estimated 250 free clinics nationwide.

4. To reduce the fastest growing expenditure area—pharmaceutical costs—we need to reduce the cost of pharmaceuticals, including the cost of prescription drug coverage under Medicare.

Regarding medication costs, an eight-state survey of community-dwelling older adults reported that 23% spent at least $100 per month on their medications in 2001, and 22% reported skipping medications or not filling prescriptions due to costs (Safran et al., 2002). I propose the following steps: (a) eliminate loopholes for patented medications that delay the cost-effective generics from coming to the market; (b) follow the actions of West Virginia and Michigan and encourage states to hire their own counter-detailers to visit physicians and persuade them to prescribe generics whenever possible; (c) prohibit the advertisement—to the tune of $2.5 billion in 2001—of (expensive, new) prescription drugs, based on the evidence that advertising promotes the purchase of unnecessarily expensive medications (as well as unnecessary medications) over generics (Bell et al., 1999; Landers, 2001); (d) remove the middlemen—pharmacy benefit managers—and pass on the savings directly to the consumers; and (e) allow the federal government to negotiate lower prices directly with drug manufacturers (more on this later).

Paradoxically, instead of a movement to reduce medical costs and close the gap between the insured and the 46 million uninsured in America, progress is being made toward increasing medical costs and creating another tier of medical care for the well-off. Boutique medicine, also referred to as a concierge-style practice, is being developed in places around the country in order to offer higher level care (such as additional health promotion and disease prevention services, quicker access or even same day service, and more time allowed with the physician) to patients who can afford higher fees.

Managed Care Is Not the Problem or the Answer

Managed care organizations are prepaid medical organizations with fixed budgets that rely on incentives or controls for providers and patients in order to contain costs. In exchange for the limitations that are placed on patients' choices of health providers and health institutions, and for their willingness to have their need for more expensive specialized medical care monitored, managed care patients expect to be the beneficiaries of higher quality care at lower cost. Another aspect of managed care

associated with higher quality care and lower cost, theoretically at least, is a greater emphasis on health promotion, disease prevention, and early detection of disease.

Managed care was given much of the credit for the decline in health care costs in the 1990s. Annual inflation of health care costs had reached a high of 16% in 1981 and stayed in double digits for the rest of the 1980s. However, as the era of managed care took hold in the 1990s, there was a steady decrease in the medical inflation rate, reaching a low of 4.4% in 1996 ("Managed Care Cited," 1998), the lowest rate since health spending trends were first compiled in 1960. Managed care enrollment rose steadily from 1992 to 1999, more than doubling during that time frame.

By the end of 1999, however, managed care costs were steadily increasing, and the number of managed care organizations and enrollees were on the way back down. Over the next 2 years, there was a 16% drop in the number of managed care organizations. By 2003, the fortunes of managed care organizations were starting to cycle back, and they were becoming profitable again. This was accomplished by substantially increasing the cost burden to employees through increased premiums and copayments. There were similar disturbing trends in Medicare managed care.

Medicare's version of managed care began with the 1982 Tax Equity and Fiscal Responsibility Act, which allowed Medicare enrollees to join federally accredited, for-profit managed care alternatives. Enrollment growth in Medicare managed care was quite slow in the 1980s and only began to increase rapidly between 1993 and 1996, averaging about a 30% increase per year. Medicare managed care appeared to be working, offering limited prescription medication coverage and a smidgen of prevention to attract new converts, while holding costs. There was considerable speculation, though, that these results were being maintained only as long as Medicare managed care focused on the youngest and healthiest of the older population.

The speculation proved to be accurate. The association between Medicare managed care and cost containment was short-lived. By 2002, as beneficiaries aged and prescription costs skyrocketed, Medicare Advantage Plans—private managed care plans plus fee-for-service alternatives that were added in 1997—were costing more than the original Medicare plan, and the beneficiaries were feeling the financial pinch as well. Out-of-pocket costs for Medicare Advantage Plan enrollees increased by 50% between 1999 and 2001. The number of older adults in these plans was reduced by 1.7 million during this time.

Most private care plans, Medicare or otherwise, are investor-owned, and executives are required to maximize profits within the limits of the law. This fiduciary responsibility created an incentive for private care

plans to seek healthier enrollees and to limit services to those with serious disease and functional limitations (Angell, 1997).

As I noted in an earlier book,

> Adverse selection occurs when a disproportionate percentage of Medicare enrollees require medical services. The negative impact of adverse selection may be even greater in the future when Medicare managed care enrollees no longer tend to be healthier than the general Medicare population. (Haber, 1989, p. 11)

And so it went.

As beneficiaries aged and costs escalated, the vision of managed care as a population-based preventive care strategy dimmed as well. Private health care businesses became increasingly concerned about short-term profits, while preventive medicine became an increasingly irrelevant long-term strategy.

Almost 2.5 million beneficiaries were dropped by Medicare Advantage plans between 1998 and 2003. From a peak of 6.5 million people, or 17% of the Medicare population, in 1998, private care beneficiaries were reduced to 4.7 million or 10% of the Medicare population, in 2003. And many of the remaining beneficiaries were finding out that private Medicare plans were becoming no different than the original Medicare plan—no coverage for prescription drugs, minimal prevention benefits, and rising premiums.

Congress once assumed that private care plans could get by on payments equal to 95% of the cost of treating patients in the original Medicare plan. This proved to be unrealistic. In fact, the pendulum has now swung in the opposite direction. In 2006, Medicare paid 15% more, on average, to Medicare Advantage plan patients than it spent in the original Medicare plan. In other words, taxpayers were subsidizing private care plans, rather than private care plans helping to reduce the costs of Medicare.

Studies have shown that private managed care plans were not only more costly to government, but they were also more costly to patients (Sung et al., 2004), and they provided lower quality care (E. Schneider et al., 2005) than the original Medicare plan. The researchers of the second study concluded that the financial incentives of the for-profit plans may have led to less aggressive efforts to manage the quality of the medical care they provided.

Despite the fact that Medicare private care did not demonstrate costs savings or improved quality over traditional Medicare—quite the opposite, in fact—the Bush administration invested $46 billion into these programs in 2004. As expected, private Medicare plans began to grow once again, to 7.3 million members in 2005—but at what cost? Researchers believe that health insurance dollars are wasted going into

private health plan bureaucracies, unnecessarily adding to administrative costs.

The controversy over managed care versus fee-for-service has been replaced by government versus private care, and this distracts attention from the real issue. Instead of focusing on the advantages and disadvantages of providing more for-profit choices to Medicare members, we should concentrate on the quality of one unified health care system that is available to all. The key, of course, is to develop a universal system with an ongoing focus on improvement in quality care, while monitoring and controlling costs.

A free market health care system does not accomplish these goals. The additional cost for advertising competing health care plans or for maximizing profits does not spur improvement in quality. It stimulates even greater costs—for the administration of diverse health care plans. In this regard, Sweden, with its single-payer system, can provide cost savings for physicians who link to its one system for implementing electronic medical records. Thus 90% of their physicians do so. In the United States, however, which lacks a single-payer system, only 17% of physicians use a cost-effective electronic medical record (Chin, 2002a). Instead, we have hundreds of payment systems requiring untold costs in training and deployment of personnel to sort through all the unique regulations.

Benjamin Brewer, a physician who writes an online column for *The Wall Street Journal*, reported that he has to deal with 301 different private insurance plans. Dr. Brewer employs two full-time staff members for billing and two secretaries that spend half their time collecting insurance information. "I suspect," Dr. Brewer wrote, "I could go from four people in the paper chase to one with a single payer system."

The Department of Veterans Affairs is an exception in the United States in that it is a single-payer system with an integrated delivery system, salaried physicians, and medical information that is coordinated and tracked electronically. This system is not only cost-effective, but each physician has access to a detailed electronic record of every patient visit, test, medication, and surgery. This system allows patients as well to access their electronic medical records and encourages their interest and involvement in their own health care.

Not only does competitive, nonintegrated care raise costs in the health care industry, it is impossible for the health consumer to figure out which health care plan among the competing plans is the best one to suit their needs. Even if consumers were given educational assistance in this regard, they would have to be clairvoyant to know which health care plan would best meet their upcoming medical needs.

Finally, how do you get competitive health plans to provide coverage for the sickest and oldest people? Though it may be possible to design such a free-market solution guaranteeing coverage to the most vulnerable citizens, no one has done it yet.

The question is not whether Americans need more health care coverage choices, but whether all Americans will have access to a quality health care plan. Universal health care coverage will be an important milestone in this journey.

Medicare Part D: A Critical Analysis

On January 1, 2006, Medicare Part D, a medication reimbursement program, was launched. Unsuccessful with privatizing social security, Part D was a big step for the Bush administration toward privatizing Medicare. A major component of this legislation was the inclusion of a mandated middleman, private insurers, to cover the cost of medications. These private insurers offer different premiums, deductibles, and copayments and cover different drugs. Beneficiaries need to figure out which private plan among many in their geographical area is best for them.

Comparing the different plans is a complicated process. In 2006, investigators from the nonpartisan Government Accountability Office (GAO) placed 900 telephone calls to 10 of the largest companies offering drug coverage to Medicare beneficiaries. Insurers failed to provide complete and accurate cost information more than 70% of the time. Trained operators at the same insurance company gave different answers to the same question. Even when GAO investigators were able to correctly identify the least costly plan, the insurance representatives provided a quote that was less than the actual cost to the beneficiary.

The GAO investigators found that some of the private insurers referred callers to a toll-free government telephone number, 800-MEDICARE (800-633-4227). The Medicare office, according to the GAO investigators, was only able to give accurate answers to consumer questions 61% of the time.

Complexity is only part of the problem: Cost is an issue, too. Medicare Part D does not allow the federal government to negotiate lower prices directly from drug manufacturers. This has not been the case with another government agency, the U.S. Department of Veterans Affairs, which pays nearly 50% less for drugs overall than does Medicare Part D. As a consequence, immediately after Medicare Part D was passed, drug prices rose sharply by 3.4%, 3 times over the rate of inflation. Prices rose even more during the first quarter after the Medicare prescription drug benefit went into effect, by 3.9%, which was almost 4 times the rate of inflation. It is not surprising that in comparison to five countries—Australia,

Canada, Germany, New Zealand, and the United Kingdom—Americans are the most likely to fail to fill a prescription medicine, or to take it regularly, due to its cost (Monaghan, 2006).

An added benefit to the pharmaceutical industry is the transfer of 6.5 million dual-eligible, low-income elderly and younger disabled poor from the lower paying Medicaid program to the higher paying Medicare Part D program. It is estimated that pharmaceutical companies may have received an additional $2 billion windfall in 2006 from this transfer, paid for, eventually, by the American taxpayer. Under a provision of the Medicare Part D law created by drug industry lobbyists, the increase in drug prices for dual-eligible recipients will be kept secret.

Complexity and cost are not the only problems. Private plans can decide to end coverage of a particular drug during the year, and the consumer may be stuck paying the full amount for the rest of the year. The beneficiary can also develop an illness during the year that requires a drug that his or her health plan does not cover. In addition, the beneficiary may reach the so-called donut hole, an uncovered gap in medication costs between $2,251 and $5,100 each year in which a beneficiary is on his or her own. Finally, the increase in Medicare premiums was inadequate to cover the additional costs of medication reimbursement. Therefore among this legislation's many problems will be the increasing debt passed along to future generations of taxpayers.

Much of the formulation for this public policy was provided by lobbyists, rather than by the efforts of nonpartisan analysts. A Congressional aide who helped write Medicare Part D, John McManus, formed his own lobbying firm the year after its passage and received $620,000 from drug companies and trade associations. Thomas Scully, the chief administrator of Medicare, was a hospital industry lobbyist before being appointed and became a lobbyist for the drug companies after he left government on the passage of Part D. He was given a special ethics waiver to make this quick transition. A leader on Capitol Hill in the creation of Part D, Representative Billy Tauzin, left Congress once it was passed to become president of a powerful drug industry lobby, the Pharmaceutical Research and Manufacturers of America.

Drug companies lobbied intensely in the development of this legislation. The health care industry spent $325 million to influence Congress, with drug companies leading the way with $87 million. Families USA, the major voice for health care consumers, spent $40,000. AARP attempted to influence the legislation in favor of the health care consumer, but it had a divided loyalty. After Part D was passed, AARP and its partner, the United HealthCare Insurance Company, quickly became the number one insurance providers of medications through Part D.

The lobbying efforts paid off for insurers and drug companies; we will have to wait and see how well Medicare beneficiaries make out, along with subsequent generations footing the bill. A survey of health care opinion leaders conducted by the Commonwealth Fund in June 2006 reported that only 30% of respondents (mostly from the business and insurance sectors) agreed that making Medicare drug coverage available only through private plans was good for beneficiaries. On the bright side, two-thirds agreed that Medicare Part D is, on balance, good for beneficiaries, though basic changes to the law—particularly giving Medicare the authority to negotiate drug prices—are needed.

Patented Versus Generic Drugs

One policy component of Medicare Part D states that the use of a brand-name drug by a beneficiary requires approval from the Medicare Part D private insurer, even when a doctor believes that a less expensive generic drug may not work as well for the patient. There is quite a different set of priorities, however, outside of Medicare Part D.

A generic drug can come on the market only after a patent expires on a drug that has the same active ingredients. Generic drugs usually cost 60% to 90% less than brand-name versions, and the prices fall more as each new competitive generic drug enters the market. The Food and Drug Administration (FDA), however, has a backlog of more than 800 applications to bring new cheaper generic drugs to the market. Despite a statute by the FDA that generic drugs need to be reviewed within 6 months, it took 20.5 months to review each application in 2004. Only 200 employees were available to review 800 new generic applications.

There were 2,500 employees, however, to review 150 applications for nongeneric drugs attempting to come on the market in 2004. Most of these new drugs are not particularly innovative. According to Marcia Angell (2004) in her book *The Truth About the Drug Companies: How They Deceive Us and What to Do About It*, few of these drugs contain new active ingredients that make them better than drugs already on the market to treat the same condition. Of the 78 new drugs that the FDA approved in 2002, only 7 were truly innovative, and not one of them came from the major American pharmaceutical companies.

Instead of costing the $800 million on average, that the drug companies claim it takes to bring out a new drug, these so-called me-too drugs are likely to cost a small fraction of that amount. Nexium, for instance, is a me-too patented drug that took the place of Prilosec, which went generic and was reduced in price. Nexium is heavily advertised as something new and improved, and this expensive drug is promoted through

such modalities as television and print advertising and selective education for physicians. Spending on marketing and administration constitutes about 30% of pharmaceutical revenues.

Effective lobbying is what allows drugs like Nexium to continue to be compared to placebos during clinical trials, rather than compared to existing drugs on the market. If a new medication had to be superior to an existing drug, most of them would not successfully navigate through the clinical trials to gain FDA approval.

Long-Term Care

Long-term care is part of the final chapter in most people's life histories. It refers to the personal care and assistance needed on a chronic basis due to disability or illness that limits the ability of the individual to function independently. Perhaps the ideal goal for long-term care was articulated best by William Thomas, the founder of the Eden Alternative and the Green House Project, who stated that we should seek community-based long-term care developed on a cornerstone of love (Thomas, 1996).

The actuality of long-tem care, however, is predicated on institutional care, which is based on rigid control over resident routines and on safety regulations. As noted by Kane (2001), the "bulk of [long-term care] public dollars go where older people do not want to go." Despite the overwhelming preference of older Americans to remain in their own homes, we spend 80% of public dollars on the care provided by nursing homes. Regarding the perception of the quality of the care provided in these nursing homes, almost 30% of a sample of seriously ill older persons reported that they would rather die than move permanently to a nursing home (Mattimore et al., 1997).

Two-thirds of the nation's 17,000 nursing homes are for-profit homes, which tend to be less concerned about quality of care and more concerned about keeping costs down and profits up (Harrington et al., 2001). One example of this is the Evergreen Gridley Health Care Center in northern California. In 2002, an investigation reported that they spent an average of $1.91 per day to feed residents, about $1 a day less than California spent on food for inmates in state medical prisons. It is also about $2 a day less than the U.S. Department of Agriculture cites as the minimum necessary for a nutritious diet for older adults (Schmitt, 2002).

What *are* the options? Remaining in one's own home is probably the ideal way to provide long-term care for most people, but it is predicated on in-home assistance that is hard to find and even harder to afford. In the absence of this gold standard for long-term care, there are three congregate options that may be more realistic than home care and more

humane than nursing home care. They, too, are not without their challenges:

1. *Assisted living.* Assisted living is long-term housing, often with private bedrooms and the provision of meals, social activities, and assistance with activities that residents can no longer perform themselves. Assisted living consists of many ways to combine housing options and needed services. The attraction of assisted living is that it allows consumers to maintain what they prize most: to organize their days with as much autonomy and dignity as possible. The owners of assisted living facilities have more autonomy, too. And while this can lead to more innovative care options, it can also lead to deficiencies in the quality of care and consumer protection.

   The challenge for assisted living is that it needs to be an affordable option to those who want to choose it over a more institutionalized nursing home setting. Nationwide, assisted living residences charge, on average, a monthly fee of almost $3,000, and the fee can rise as higher levels of service are required.
2. *Nursing* homes *(not institutions).* There are long-term care settings that emphasize quality of life over regulations and safety. The Eden Alternative, with its emphasis on pets, plants, and caring relationships (Thomas, 1996), is at the forefront of this movement. A radical remake of the nursing home industry along the lines of the Eden Alternative, however, will be slow and difficult. Over the past decade, about 300 nursing homes, less than 2%, have adopted some aspects of the Eden Alternative.

   Pets, plants, and children will not only make nursing homes more attractive to residents, but they should also make them more attractive to staff. The recruitment and retention of good staff is at the heart of quality care in nursing homes. Unfortunately, there is a crisis in this regard in nursing homes today. About 90% of nursing homes have too few workers per patient (Pear, 2002).
3. *Programs of All-Inclusive Care for the Elderly (PACE).* This integrated model of care targets individuals who are eligible for nursing home care but are able to live in the community with the help of PACE supportive services. By combining Medicare dollars, state Medicaid funds, and individual personal resources, a more comprehensive range of services is provided, including prevention. Services and resources can be targeted toward the home (like grab bars and ramps) or provided at adult day care health centers.

   The adult day health center is the heart of the PACE program. It includes a health care clinic, occupational and physical therapy services beyond what traditional Medicare or Medicaid

would provide, and various other resources. The average PACE participant attends an adult day health center 2.5 days a week, with some spending 5 days a week if they live with a family member who works, and others attending only a few times a month (Greenwood, 2002a).

The upside to the PACE program is that more individualized care may be provided at lower costs (Wieland et al., 2000). Evaluations have shown that PACE can achieve a substantial reduction in the use of institutional care (Chatterji et al., 1998; Kane et al., 2006). The downside to this innovative program is that state governments must be active partners, and the financial risks of starting and maintaining a program are still not well understood (Greenwood, 2002b). For more information about PACE, contact the National PACE Association, 801 N. Fairfax Street, #309, Alexandria, VA 22314; 703-535-1565; http://www.npaonline.org.

Social Health Maintenance Organizations were federally funded demonstration projects that began in 1985 and were similar to the PACE program in that they attempted to integrate acute care and long-term care services. After two comprehensive evaluations (Newcomer et al., 1995), these programs did not provide cost savings or superior care, and the demonstration project was recommended to be phased out in 2007.

Perhaps the beginning of a solution, or solutions, to a system of long-term care that maximizes the health and independence of older adults will take place when the wellness general of the United States (or perhaps a lieutenant general that he or she hires) spearheads an initiative to revolutionize long-term care. The goal of this office will be to make the final chapter in most people's life histories as autonomous, dignified, and loving as possible. Along the way toward accomplishing this goal, some of the principles on which California's Aging With Dignity Initiative is based may provide a sense of direction:

- long-term care tax credits for families caring for seniors at home
- additional resources for staff training for in-home, assisted living, and nursing home options
- increased wages for paid caregivers
- substantial financial awards distributed to exemplary long-term care settings
- punitive responses to owners of long-term care settings that perform poorly
- establishment of state information and support clearinghouses.

For additional information about long-term care, contact the National Center for Assisted Living, 1201 L Street, NW, Washington, DC 20005; 202-842-4444; http://www.ncal.org. Also contact the National Citizens' Coalition for Nursing Home Reform, 1828 L Street, NW, #801, Washington, DC 20036; 202-332-2276; http://www.nccnhr.org. Contact Eldercare Locator for information about caregiving in a particular ZIP code area at 800-677-1116.

Other Public Health Policy Issues

Erring on the side, once again, of a too-strong federal or state government role in promoting the health of an aging society, I recommend the following additional public policies:

1. *Tobacco.* Tobacco should be regulated, including tobacco advertising, through the FDA. Smoking in enclosed workplaces and in all public places should be banned. Federal and state taxes on tobacco products should continue to increase.
2. *Alcohol.* Establish uniform drinking and driving laws for all states, including a legal blood alcohol content for drivers that is no more than 0.08%. Increase the federal excise tax on alcoholic beverages and use the additional revenue to promote responsible drinking practices. Continue the prohibition of the advertisement of liquor on television networks.
3. *Physical activity or exercise.* For the benefit of future cohorts of older adults, require daily physical education classes in elementary through high schools and provide exercise options so that children can find the physical modality they enjoy. Give recognition to shopping malls that promote walking and stairway use, communities that promote bicycle and walking paths, and worksites that promote exercise for sedentary employees, perhaps through certification as a heart-friendly location. Require commercial building codes to include safe, attractive, and accessible stairways (i.e., build stairwells in the centrally located sites where most elevators are now situated, pipe music into them, and hang attractive artwork on the walls). Recognize and reward transportation planners who shift their focus from cars to bike paths and sidewalks. Provide subsidies (okay, this one is a bit far-fetched) for the manufacturers of television sets and electronic games that are powered by exercycles.
4. *Nutrition.* For the benefit of future cohorts of older adults, pass an amendment to the National School Lunch Act that requires high nutritional standards for all food and drinks sold on school premises, including cafeterias, vending machines, and at school-related

events. Prohibit the marketing of junk foods directed at children. Add a 1-cent tax on high-fat, high-sugar, and high-salt junk foods, and use the resources for health-promoting initiatives. Require restaurant menu boards and menus to state the caloric content of all foods and drinks. Set limits on the amount of salt allowed in processed foods and restaurant meals. Ban restaurants from using oils that contain trans fats. Change nutrition labels so that sugar and trans fatty acid are included in the percentage of the daily value that they represent, and apply the percentages to the specific product (e.g., this product is 40% sugar), and not just to the percent of daily intake for the day. Limit the sugar content of certain products such as breakfast cereals, or relabel them, for example, "breakfast candy." Shift federal agriculture subsidies from grain farmers to fruit and vegetable growers.

5. *Geriatric medicine*. After an initial burst of enthusiasm in the 1970s, when geriatric training programs were established, and in 1988, when the first examination in geriatric medicine was administered, the number of medical students choosing to specialize in geriatrics has been decreasing. With only one trained geriatrician for every 5,000 Americans aged 65 and older—and the baby boomers fast approaching 65—there will be a critical shortage of trained geriatricians. The best way to increase the supply is to reimburse better for high-touch medicine versus high-tech procedures and to elevate the income of geriatricians, who are consistently ranked as the lowest paid medical specialty.
6. *Research*. Meager geriatric training funding spills over into the geriatrics research arena as well. In 2003, there were only 62 physician-fellows nationwide who were in their second or subsequent years of training in geriatrics research. Of 145 medical schools in the United States, only 9 have departments of geriatrics. Increase funding for geriatric research, particularly research that evaluates the effectiveness of counseling and other behavior-changing strategies focused on smoking cessation, reducing problem drinking, increasing physical activity, and improving nutrition. Increase funding for, and the evaluation of, programs that help older adults become public health advocates—particularly in the areas of environmental protection and strengthening elementary school education. When proved effective by research, incorporate health-promoting strategies into Medicare, and encourage state legislatures and private health care plans to mandate reimbursement as well.
7. *Age discrimination at work*. Discrimination of any type (e.g., on the basis of sex, race, religion, or age) is bad for your health. There are eight types of discrimination prohibited by law, and age discrimination has the lowest success rate—14%—when it comes to

charges filed with the Equal Employment Opportunity Commission. Although the Supreme Court removed the barrier of an older employee having to prove discriminatory intent on the part of the employer (*Smith vs. City of Jackson*, 2005), it also made it more difficult for employees to prove *harmful* age discrimination. As the percentage of the workforce aged 55 and older rises from 13% in 2000 to 19% in 2012, perhaps avenues other than legal remedies, such as advocacy and education, can prove more effective at protecting the older worker.

8. *Income security.* Low income and poor health are strongly correlated. Eliminate the maximum amount of earnings that can be subjected to the Social Security payroll tax, and include state and local government workers who are now exempted from Social Security payments. This will make Social Security solvent for the foreseeable future and preserve a safety net for low-income elders. Require employees to opt out of their retirement program rather than to opt in to it because currently, only 40% of eligible workers in organizations that offer 401(k) plans actually enroll in them. Eliminate the option of lump-sum removal of retirement benefits when changing jobs or at any time prior to an age that is eligible for Social Security benefits. Social Security must live up to its name and be secure; privatization not only entails huge start-up costs, but it will make Social Security payments less predictable in the future.
9. *Officially declare Oregon as the Model State for Health Promotion.* Prior to 2003 (when Oregon and most other states experienced a budget catastrophe), Oregon was the model state for testing innovative health promotion practices that may some day be adopted by other states, or on a national basis. Examples of this state's health-promoting innovations include recycling, the development of health care rationing criteria, the Oregon Death With Dignity Act, home and community-based alternatives to nursing homes, availability of hospice services, physician orders that translate advance directive preferences into medical orders, and the first state ballot attempt for a one-payer health care system. Oregon has been likely to lead the way on health promotion—so why not make it their official role?

Regarding the last innovation—the one-payer health care system—it should be noted that in November 2002, the citizens of Oregon rejected this initiative by 79% to 21%. It should also be noted that opponents of the ballot measure spent 99.99523% of all money raised to educate the public on this issue.

Which brings us back to the question that began this book: Did you know that the federal government establishes goals for healthy aging?

My response is threefold: (a) make one of these goals the appointment of a wellness general, and provide sufficient funding and a structure to make the role effective; (b) provide universal health care coverage; and (c) truly make it *health* care coverage, with a twin focus on medical care *and* health promotion.

QUESTIONS FOR DISCUSSION

1. Discuss the pros and cons of the idea to tax junk foods. What is *your* opinion of this idea?
2. In addition to your views on taxing junk foods, what do you like or not like about the proposal to appoint a wellness general?
3. Access the surgeon general's reports on physical activity and mental health. Describe one important age-related finding in each report.
4. Clearly the author promotes a (too?) strong government role in promoting the health of an aging society. State the advantages and disadvantages of such a strong-government approach, and then state your own opinion.
5. Where will we be 10 years from now: universal health care, widespread boutique medicine, or something else? Why do you believe that?
6. Some analysts are less critical of Medicare Part D than the author is. Do your own search for critical analyses of this piece of legislation. What is *your* opinion of Medicare Part D? Justify your answer.
7. The author is clearly against a market-driven, fee-for-service, profit-oriented health care system. And yet markets, profit, competition, and other elements of capitalism have proven their worth over the years in contributing to quality products at affordable costs. Are these elements of capitalism incompatible with universal health care? Explain your answer.
8. Why is long-term care more of a health promotion issue than a medical care issue? Or if you believe otherwise, support your position.
9. Review the section "Other Public Health Policy Issues" in this chapter, and then propose another change that *you* believe will be for the better.
10. I believe that if we become more responsive to the health care needs of older adults, we will probably provide better health

care for people of all ages in America. What do you think is the logic behind this belief?

11. What does this quotation by Henry Wadsworth Longfellow mean to you?: "Age is opportunity no less than youth itself, though in another dress, and as the evening twilight fades away, the sky is filled with stars, invisible by day."
12. Examine one other topic in this chapter that you found interesting and has not been explored when answering the previous questions. Why did you find this interesting?

CHAPTER FIFTEEN

Glimpse Into the Future

Gerontology is a tough sell to students, despite the upcoming gerontology boom. The following anecdote is typical of this challenge: I recently gave a talk to 50 undergraduate nurses, mostly seniors, some juniors, and began by asking how many of them planned on working primarily with older adults. Five hands were raised. That is 10% of the class.

Just down the block from this classroom, not more than 100 yards, is a regional hospital where my wife works. I asked the students what percentage of the patients in that hospital are older adults. No takers. I told them that my wife reported that almost 50% were Medicare patients. This is a typical percentage for hospitals in America. The same percentage of patients holds true for the outpatient medical clinics surrounding this hospital.

As the baby boomers move into their late 60s, these percentages will go up—dramatically. In short, I told them, many more of you will be working primarily with older adults than you now realize.

The leading edge of the 76 million boomers are in their sixth decade of life, and it will not just be nurses who will be finding jobs in the field. If you are interested in marketing, who do you think you will be selling products to? If you are interested in education, who believes most strongly in lifelong education? If you are interested in social work, who will be most in need of your services? If you are interested in science, who will be the subject of an increasing number of research studies?

Students do not make career decisions based exclusively on job opportunity. What also motivates them is the prospect of entering a field that excites them. Many believe this means working with the young. Young persons are energetic, attractive, and have a long future ahead of them. These are qualities that the students themselves share.

Boomers are energetic and attractive, too. And while they do not have most of their lives ahead of them, they will be dramatically revolutionizing

society. I believe students can be convinced that gerontology and geriatrics are innovative and creative ways to be a part of this revolution. These are careers that will stir their emotions and imaginations.

I have selected four unique career paths with which to do the stirring: reengagement, physical health, mental health, and supportive housing.

REENGAGEMENT

Financial planner to older adult: Have you given much thought to what kind of job you want after you retire?

In 2011, baby boomers begin turning age 65 and start becoming the gerontology boomers. Most of them will not retire, if by retirement we mean a type of disengagement. Why will these gerontology boomers be different from the current crop of retirees?

1. The boomers will be the *longest lived cohort* of older adults. They may have 25 or 30 years of life to negotiate after giving up their main lines of work. How many of them will be comfortable with the idea of a quarter century without additional earnings? How many will be comfortable letting go of education, exploration, and engagement?

   A 2002 AARP national survey found that 70% of employees plan to work in their retirement years. Another survey by the Employee Benefit Research Institute polled 1,252 adults and found that while only one-fourth of current retirees draw any type of paycheck, more than two-thirds of workers today expect to work for pay after traditional retirement age.

   In 2006, the London-based HSBC banking group surveyed 6,000 employers and 21,000 employees: 30% of employers offered some form of flexible working schedule as employees near and enter retirement, but 66% of employees were interested in it.
2. The boomers will be the *best educated cohort* of older adults. Between 1950 and 2000, the percentage of Americans aged 65 and over with a high school diploma leaped from 18% to 66% and college graduates from 4% to 15%. When the baby boomers reach age 65 and over, these percentages increase to 89% completed high school and 36% graduated college.

   In 1991, 17% of Americans aged 60–64 were involved in adult education; by 1999, that had jumped to 32%. They say a mind is a terrible thing to waste: not only from the individual's standpoint, but from society's as well—76 million minds to be precise.

3. The boomers will be the *healthiest cohort* of older adults. Almost 90% of Americans aged 65–74 report that they have no disability, and the disability rate for older Americans continues to decline. An increasing number of older adults are exercising in late life, with brisk walking for exercise becoming commonplace among the old. Strength training is increasing rapidly in the United States, particularly among women aged 45 and over. Not only is a mind a terrible thing to waste, so is a healthy body.
4. The boomers may become the *most engaged cohort* of older adults. Fifty-four percent of boomers say helping others is important to them. A 2002 national survey by Hart Research Associates reported that about 60% of older Americans believe that retirement is a time to be active and involved, to start new activities and to set new goals. A 2005 survey by Civic Ventures and the MetLife Foundation reported that 58% of leading-edge baby boomers, those between ages 51 and 59, said they want to take jobs that serve their communities.

   This desire to serve may not be strictly altruistic. Older adults who volunteer report higher levels of physical, cognitive, and social activity (Fried et al., 2004) as well as improved psychological well-being (Morrow-Howell et al., 2003; Musick & Wilson, 2003).
5. The boomers will be the *largest cohort* of retirees ever. The number of Americans aged 65 and older will increase from 35 million in 2000 to more than 70 million in 2039. When these boomers came into the world, they revolutionized hospitals and health care just through their sheer size. They did the same thing to public schools, and then to the housing market, spurring a tremendous growth in building. A cohort this large is unlikely to pass into retirement and leave it unchanged. And boomers are unlikely to accept things as they are.

Institutional Change

Business

Only 30% of employers offer any type of flexibility for their aging employees so that they can continue to work in a modified capacity, either in terms of reduced time or type of work. In contrast to the disengagement stereotype, older workers are more satisfied with their jobs, interact better with clients, are more engaged in their work, have lower absenteeism, raise health care costs only 3% or less, and have the

potential to be a financial bargain for their employers as they may not need or seek a full salary.

Some employers have received the message. Home Depot offers snowbird specials, that is, winter work in Florida and summer work in Maine, for older workers. Borders bookstores found that the turnover rate for employees aged 50 and older was 10% of the rate for workers under age 30. To attract more older workers, they offer discounts on books and the opportunity to join reading and discussion groups.

Fifty percent of registered nurses are expected to retire in the next 15 years, just as boomers will step up the demand for nursing services. Hospitals and clinics are starting to find ways to reduce hours and change job responsibilities in order to take advantage of the experience and training of older nurses. Modifications in the work environment are also taking place. Florida Baptist Health in Coral Gables installed new patient beds that make it easier for older nurses to lift and move their patients.

Hospitals are getting more creative with recruiting older volunteers as well. They offer more flexible hours, free lunches or parking, and access to medical seminars. Older volunteers enjoy delivering positive results from hearing screenings to parents of newborns (while medical professionals deliver bad news). In exchange, older volunteers remain volunteers over a longer period of time than do young student volunteers. They handle difficult situations in a calming manner, know how to offer emotional support to patients, and apply their maturity in a variety of ways.

AARP Foundation has launched a Web site (http://www.aarp.org/featuredemployers) to match job seekers who are aged 50 and older with employers who are older worker–friendly. These employers may provide such benefits as flexible hours, tuition assistance, caregiver support, or discounts on medications. Last checked, this site had 24 employers listed, with the goal of expanding into the hundreds.

Government and Foundations

Government and foundations can create more opportunities for older adults to contribute. The Foster Grandparent Program is an excellent government program that pays a small stipend to 30,000 older adults who help 275,000 young children and teenagers at physical and emotional risk. These foster grandparents serve 20 hours per week at $2.65 an hour, in schools, hospitals, correctional institutions, day care facilities, and Head Start centers. This program could expand many times over and help prevent many more of the young from becoming a burden on society.

Experience Corps is a foundation-supported program that has placed 2,000 older adults as tutors and mentors with 20,000 low-income children in urban, public elementary schools and after-school programs

in 19 cities. These programs not only boost the academic performance of students, but enhance the well-being of the older volunteers in the process (Fried et al., 2004; Rebok et al., 2004; Tan et al., 2006). Much work remains as two-thirds of the nation's fourth graders in major urban areas are reading below basic levels for their grade. For more information, contact Experience Corps, 2120 L Street, NW, #610, Washington, DC 20037; 202-478-6190; http://www.experiencecorps.org.

History professor Jack Hexter was forced to retire from Yale at age 65, then continued his academic career for another decade at Washington University in St. Louis. At the age of 80 he realized that the U.S. armed forces were being downsized after the first Gulf War, and perhaps many who were retiring from the army in their late 40s and early 50s might want to help fill the acute need for public school teachers. Hexter persuaded then-senator John Danforth to obtain federal money for his creative idea: Troops to Teachers. Several years later, the 3,000 retired veterans who transitioned into teaching exceeded the retention rates of traditional education school graduates (Freedman & Moen, 2005).

The 655 area agencies on aging are examples of local government agencies that could engage college students to help assess the local community's needs for the talents and experience of older adults, catalog these needs, and publicize work or volunteer opportunities. Businesses and other types of organizations may need help in screening older adults, matching them to the right opportunity, and figuring out ways to support them through ongoing training, recognition, and perhaps a stipend.

Education

Higher education can provide a venue for exploring creative retirement opportunities. The North Carolina Center for Creative Retirement (NCCCR), for instance, has just such a course: Creative Retirement in Uncertain Times. Through lectures, case studies, discussion groups, and community activities, older participants explore their image of retirement, their ability to revitalize themselves, and their plan of action. With the help of a civic engagement grant from the National Council on the Aging, NCCCR created a Leadership Training Program for Older Persons. It enables low-income older adults aged 50 and older to gain the skills and confidence necessary to advocate for their peers by becoming effective leaders in community organizations that rarely include representatives from low-income groups.

The NCCCR is located at the University of North Carolina at Asheville, Reuter Center, COP #5000, One University Heights, Asheville, NC 28804; 828-251-6140; http://www.unca.edu/ncccr. For information about demonstration grants awarded to encourage civic engagement,

contact the National Council on the Aging, 300 D Street, SW, #801, Washington, DC 20024; 202-479-1200; http://www.ncoa.org.

The Fromm Institute at the University of San Francisco (USF) is an educational program for retired persons taught by retired professors. The institute presents about 50 courses each year over three 8-week sessions. Program participants not only enjoy their age peer classes, but they have the opportunity to interact intergenerationally with more traditional students at the USF campus. Contact the Fromm Institute for Lifelong Learning, University of San Francisco, 2130 Fulton Street, San Francisco, CA 94117; 415-422-6805; http://www.usfca.edu/fromm/contact.html.

The Plato Society of UCLA is a community of retired or semi-retired men and women who study topics in interactive groups where everyone participates. Contact the Plato Society of UCLA, 1083 Gayley Avenue, 2nd Floor, Los Angeles, CA 90024; 310-794-0231; http://www.unex.ucla/plato.

The Renaissance Society at California State University, Sacramento, is a center for learning in retirement in which members choose to study topics proposed by their peers who coordinate the seminars. Contact the Renaissance Society, CSU, Sacramento, Foley Hall, Room 234, Sacramento, CA 95819; 916-278-7834; http://www.csus.edu/org/rensoc.

These programs are just a few from among many older adult peer-led lecture and discussion courses hosted at institutes of higher education. Contact nearby colleges and universities to find out if they offer similar educational programs.

Rosabeth Moss Kanter, a professor at the Harvard Business School, envisions a future where going to a university in your 50s or 60s is the norm, not the exception, in order to make a transition from the primary income-earning career to subsequent years of flexible service. No idea would be too idealistic for these older college students, from raising literacy rates to ending poverty to helping to reverse global warming.

Kanter envisions the development of these graduate programs at colleges and universities around the country, designed for older students who want to serve and solve problems. These students would be financially supported by foundations, employers, and government through scholarships and tax breaks. Kanter refers to this opportunity as "even higher" education.

Conclusion

Many boomers are entering a period where they get to shape their lives and live them more in tune with their values and desires than perhaps at

any other period of their lives. Moreover, the areas that older adults feel most passionate about—teaching, health care, and nonprofit work—happen to coincide with the greatest labor shortages.

It was not a trivial gesture when the American Association of Retired Persons changed its name to its initials, AARP. The organization thought it was misleading the public by having the term *retired* in its title. AARP chief executive officer Bill Novelli described the institution of retirement as "the cultural agreement that, at a certain age, one stops working." In historical perspective, this cultural agreement has been relatively brief. Perhaps it is time to reinvent retirement.

Creative Career Opportunity: Reengagement Counselor

The reengagement counselor helps older adults navigate work and volunteer opportunities postretirement. This job can be structured as an independent consultant for individuals or businesses; coordinated through an area agency on aging; linked with a university or an Elderhostel-type educational program; or incorporated into human resource services at larger businesses. A large corporation, for instance, might want to retain some of their retiring workers by arranging for flexible work hours, new job responsibilities, and salary levels that are advantageous to both older employees and employers.

PHYSICAL HEALTH

As a former general, President Dwight Eisenhower was very concerned about the emergence of a military industrial complex dominating society and taking over the budget. Little did he, or anyone else, realize at the time that only five decades later, the military industrial complex would be left in the dust by the health industrial complex. By the turn of the century, the health industrial complex was 4 times larger than the military industrial complex.

Driven by the advent of Medicare, an aging society, and an endless discovery of technological inventions—machines, equipment, procedures, drugs, lab tests—that improve health care and raise costs, health care inflation has doubled overall inflation for decades now. And there is no end in sight. Health care has steadily increased to 16% of the gross national product, and economists are predicting that the percentage increase will continue to rise in the coming decades.

At the same time we are grappling unsuccessfully with rising health care costs, there is ample evidence that it is not buying us longevity or even, more importantly, healthy aging in late life. Many other countries

spend far less than we do and keep their elderly not only living longer, but sustaining healthy years of life longer than we do.

So what do we do about it? The first thing we need to do is recognize that as American society ages, health care is moving—or should be moving—from an emphasis on acute care to one of chronic care. The medical model for acute care is dominated by expensive equipment, tests, and surgery and by health care professionals who engage in diagnosing, treating, and prescribing. This is a very expensive and controlling system, with insurance administrators and health professionals in charge and patients in a passive and compliant role.

In the chronic care model that is developing, this approach can change. Chronic conditions wax and wane but rarely disappear. Among today's Medicare beneficiaries, 87% have at least one chronic condition, such as arthritis, heart disease, diabetes, certain types of cancer, and so forth; and two-thirds have more than one chronic condition. Twenty percent have five or more chronic conditions. Instead of cure, chronic care needs to be focused on function and quality of life.

Individuals with chronic conditions need to be alert for symptoms that lead to the adjusting or changing of medications; experimenting with nutrition, exercise, and stress management; and playing a much more active role in the daily management of their chronic diseases. These individuals need also to manage the social roles affected by their chronic conditions and the range of emotions that are triggered by the challenges of chronic disease.

How does one learn about managing chronic conditions? There are books to read, such as *Living a Healthy Life With Chronic Conditions* (Lorig et al., 2000); professional organizations like the Arthritis Foundation (http://www.arthritis.org), which provide written materials and community programs; and educational programs to attend, like the chronic disease self-management program developed by Kate Lorig and colleagues at Stanford University (http://patienteducation.stanford.edu/programs/cdsmp.html). The chronic disease self-management program is designed to be led by lay persons with chronic disease and to focus on the medical, social, and emotional management of chronic conditions.

Medical management refers to being able to communicate effectively with health professionals, being educated about relevant medications, adhering to appropriate diets and exercise programs, and being an educated consumer of medical equipment and supplies.

Social management refers to learning how to maintain satisfying roles while living with chronic disease. If you are an avid gardener, how do you continue this hobby with bad knees? If your grandchildren have boundless energy and you do not, how do you reconcile this discrepancy and still get to play with them? If you would like to organize a holiday

dinner at home but have limited financial means and physical energy, how do you get others to share in the responsibility? Are there transportation resources that can alleviate your dependence on family members?

Emotional management refers to managing the emotions that accompany chronic conditions over time. How do you deal with the sadness, frustration, and anger that emerge from your physical condition? How do you ask for help when you need it, while minimizing the guilt of being unable to do things for others that you once did? Are there local support groups for emotional, informational, and practical support? Where can you find out about relaxation training and other types of stress management?

The chronic disease self-management program is taught by volunteer lay leaders who receive 20 hours of training. The course is typically seven weekly 2.5-hour sessions, with 10–15 participants. The location can be at a senior center, a church, a retirement community, or another site that will not charge for space.

Lorig's research over the years has demonstrated that participants wind up with more energy, fewer debilitating days, and fewer visits to physicians and emergency rooms (Lorig et al., 2001). Beginning in 2003 and continuing to 2009, there have been two 3-year Evidence-Based Disease Self-Management Initiatives launched by the Administration on Aging (AOA) to help local aging and health networks implement and evaluate health programs that empower older individuals.

The second AOA grant-funded initiative is taking place in 12 states and over 30 local communities and involves state units on aging and the relevant area agencies on aging, state health departments, and local community organizations such as senior centers, nutrition programs, senior housing projects, religious organizations, and adult day care centers. The goal is to mobilize public–private partnerships at the state and community levels to implement and sustain the delivery of evidence-based programs. The National Council on the Aging's Center for Healthy Aging (http://www.healthyagingprograms.com) serves as a resource center for the successful grantees.

The active self-management of chronic diseases is associated with many challenges, such as depression, pain, fatigue, lack of support from family, and poor communication with physicians (Jerant et al., 2005). A meta-analysis of 112 interventions to improve self-care for persons with chronic illnesses, though, led the researchers to conclude that there were consistently beneficial effects on clinical outcomes and process of care (Tsai et al., 2005). Another meta-analysis of 53 programs found clinically important benefits for self-management interventions with diabetes and hypertension but less so with osteoarthritis (Chodosh et al., 2005).

Creative Career Opportunity: Chronic Disease Management Coordinator

The chronic disease management coordinator helps older adults organize into groups to promote self-management. This job can be structured as an independent consultant for individuals; focused on older workers in a large corporate setting; or coordinated through an area agency on aging, retirement community, senior center, or other local aging or health organization. The coordinator can also work with physicians and other clinicians in medical clinics, helping to organize multiple patients with chronic conditions into ongoing health education and support groups.

MENTAL HEALTH

Typically, aging is viewed as a time of loss and decline. Not surprisingly, the overwhelming majority of research studies document and substantiate this process of accumulating decrements with age in the physical, social, emotional, and cognitive domains. There are a few mavericks in the research world, however, who are suggesting that old age may also be a time of development, particularly in the emotional realm.

Laura Carstensen and colleagues (2000), for instance, asked 184 people between the ages of 18 and 94 to carry a beeper for a week. When the beeper went off, they recorded their emotional state in a journal. After collecting the journals and analyzing the data, the researchers found some surprising results. Older people were less likely than younger people to experience persistent negative emotional states. Conversely, they were more likely to maintain highly positive emotional states.

When remembering the past, older adults are more likely than younger adults to focus on positive experiences (Kennedy et al., 2004). They have more emotionally gratifying memories of past choices and other autobiographical information than younger adults (Mather & Carstensen, 2005). A summary of research studies was conducted on the adaptive value of life review with respect to mental health in later life. The researchers reported on the tendency of older adults to interpret memories in terms of growth, their capacity to transform negative life events into good outcomes, and their ability to focus on positive events during shared life reviews (Cappeliez & O'Rourke, 2006).

There may be a biological basis for older adults' preference for the positive. In the aging brain of older adults—but not in younger adults—the amygdala showed decreased reactivity to negative information, while maintaining, or increasing, reactivity to positive information

(Mather et al., 2004). There may also be changes with age in the orbitofrontal cortex that impairs anger recognition (Ruffman et al., 2006).

Psychology may play an even larger role in this shift toward an emotionally positive focus, specifically in the individual's reaction to the perception that there is a limited amount of time left to live. As time is perceived as being more finite, the regulation of one's emotional state in the present becomes more important than other types of goals (Carstensen, 2006). Present-oriented goals regarding psychological well-being are prioritized over future-oriented goals aimed at acquiring information and achieving instrumental goals (Lockenhoff & Carstensen, 2004).

Studies show that there is a bias in which older adults pay more attention than younger adults to positive information and less attention to negative information. Older adults also select people and situations that will maximize positive emotions and minimize negative ones (Mroczek & Spiro, 2005). Other studies support similar findings:

1. When reminiscing, older adults are more likely to focus on positive emotions than younger adults (Pasupathi & Carstensen, 2003).
2. When shown images on a computer screen, followed by a distraction task, older adults recall more positive and fewer negative images than do younger and middle-aged adults (Charles et al., 2003).
3. When shown a series of faces portraying positive, negative, and neutral emotions, eye-tracking technology reveals that older subjects gaze longer on happy faces and younger subjects on fearful faces (Isaacowitz et al., 2006).
4. When examining facial expressions, older adults tend not to give as negative a rating to individuals who may look dangerous as do younger adults (Ruffman et al., 2006).

Older adults also tend to act less confrontationally when problems come up in their relationships. They regulate their reactions to problems better than younger persons, arguing less and picking their battles better (Birditt & Fingerman, 2005; Birditt et al., 2005).

Despite the likelihood of physical and emotional losses accumulating in old age, the old, according to psychiatrist Gene Cohen (2005), become connoisseurs of "deep pleasure and satisfaction, especially in relationships with family and significant others." Or as a psychologist and her colleagues stated it, "Facing relatively shorter futures … older adults prioritize emotional goals because they are realized in the moment of contact rather than banked for some nebulous future time" (Carstensen et al., 2000).

Tornstam (1989) posited in his theory of gerotranscendence that aging individuals become less interested in the material and the superfluous and more selective in their choice of social engagement and spiritual pursuits. Levenson and colleagues (2005), using the term *self-transcendence*, reported a greater openness to experience, more agreeableness, increasing spirituality, and a connectedness to past and future generations. Lockenhoff and Carstensen (2004), on the basis of socioemotional selectivity theory, described a process in aging individuals where increasing awareness of the boundaries on time led to a greater appreciation of emotional experience in the present.

Erik Erikson's (1950) stages of psychosocial development describe a process where psychologically mature older adults have a greater need to contribute to the lives of others and to seek a basic acceptance of one's own life. Seeking these goals—referred to as *generativity* and *ego integrity*—in late-life maturity has an empirical basis in research (Sheldon & Kasser, 2001). In explaining his theory, Erikson (1950) directly addressed the importance of conducting a life review during the last stage of life in order to help achieve ego integrity (Haber, 2006).

A life review is a structured and systematic review of one's life that often takes place in a paired encounter or in a group, through a series of questions within the important domains of one's life. Family themes range from one's childhood, to the experience of being a parent, to being a grandparent. Work themes range from one's first job, to one's major life's work, to retirement. Once started, life review interviews can take more than an hour, depending on the fatigue level of the older adult, and meetings may occur over several weeks.

Taking the time to conduct life review interviews, however, stands in stark contrast to lives based on time efficiency and productivity. A description of one recent day in my own life can serve as an example. One Sunday afternoon, I went to the supermarket and scanned my goods, not interacting with anyone. I then went to the ATM machine and withdrew money, no teller necessary. I followed that by grabbing a quick bite to eat at a drive-through restaurant, exchanging a minimum of words with a disembodied voice and a few seconds of time with a cashier. I then went home for the rest of the afternoon and sat in front of a computer screen to catch up on some work.

That evening, though, I met with an older person and worked with her on her life review. I learned about the important challenges in her life, some of which were met successfully, others not so successfully. I learned from interesting anecdotes about the historical context in which these challenges took place. I asked such questions as, What was it like growing up in your family in the early 1930s? Tell me about your experiences raising children in the early 1950s. What were the highlights of

your work career? What hobbies have given you great satisfaction? What spiritual activities give your life purpose and meaning? What has been your most significant health challenge, and how have you been dealing with it?

From an afternoon that focused on time efficiency and the avoidance of "unnecessary" human interaction, I experienced an enjoyable evening feeling connected to another human being. That evening was followed by several more evenings to complete an abbreviated version of her life story. The older woman I partnered with also felt a greater sense of connectedness, not only with me, but also when she shared the completed product with her family and friends.

Life reviews are increasingly being done in community settings, as group projects or as multiple individual interviews. One-page summaries of these reviews can be posted on a centrally located bulletin board in a retirement community or at a senior center or outside the doors of individual rooms in a nursing home. The results can be greater socialization among residents and visitors and better relationships between them and staff. In short, this type of project can impact on the culture of a place, on its friendliness and willingness to share important aspects of one's life. People start to know each other better and treat each other more personally.

The research on the existing emotional strength of older persons may be linked to the research that demonstrates the mental health benefits of life reviews, in that aging persons may be able to improve, even more their ability to manage their emotional health (Haber, 2006). Additional psychological and educational benefits may accrue to daughters and sons, granddaughters and grandsons, and others who want to learn about life and history. Young adults may gain insight into their own maturational process, and life reviews can foster intergenerational bonding in an era when many younger and older people are living age-segregated lives.

Creative Career Opportunity: Life Review Specialist

The life review specialist helps older adults, on an individual or group basis, to record their life stories (mostly written, but can be on audiotapes, videotapes, and CD-ROMs as well). This job can be structured as an independent consultant for individuals, or it can be focused on residents in retirement communities, older adults at senior centers, older congregation members, or even with family members of the terminally ill or the deceased (in coordination with a hospice or funeral home).

The specialist, for instance, can approach a retirement home administrator and offer to conduct life reviews or to train staff to conduct life reviews and to help in the editing process. A full copy can go to the resident,

who can share it with friends and family. For those who are willing, a one-page abbreviated version can be posted in a heavily trafficked location to create conversations and more supportive social interactions. Staff themselves can participate, including the administrator, and relationships between residents and staff can become more personal as commonalities are discovered, achievements admired, and communities developed.

SUPPORTIVE HOUSING

Supportive housing for aging people is typically informally organized within a private home, with reliance on family members, friends, neighbors, and connections with religious organizations. If affordable, paid caregiving is used to compensate for inadequate family caregiving resources or the declining health of the care recipient.

More formal arrangements outside of the home include congregate housing options with oversight of meal planning, housekeeping, laundry, medication usage, and personal or health care services. There are no standard terms to describe these arrangements, but they are typically identified as assisted living facilities, residential care facilities, and adult foster care homes. These facilities tend to be locally defined with inconsistent terminology, policies, scope of services, and design features across and sometimes within states.

Because of this inconsistency, the term *assisted living* is often used as a generic term for any residential long-term service setting that is not licensed as a nursing home. Many assisted living facilities provide individual rooms, and most provide communal dining. Services can range from minimal to comprehensive—though less than nursing homes. Half of the facilities are for-profit and half are nonprofit, with very few being government run. Assisted living facilities are often unaffordable for persons with low or moderate incomes. There is no Medicare or Medigap insurance for assisted living, and public subsidies for these facilities, such as Medicaid waiver programs, are limited.

Most states require assisted living facilities to discharge residents who have medical conditions needing continuous nursing care. Some states have a waiver process that allows a limited number of residents to remain in place, despite significant functional decline.

Most assisted living residencies fall far short of providing the following ideal set of features in its entirety:

1. private sleeping areas and bathrooms
2. resident empowerment, if capable, in the areas of the timing and content of meals, hygiene, and social activities

3. a homelike, versus an institutional-looking, setting, with the option of having pets and allowing overnight guests
4. a sufficient number of well-trained staff who are available when needed
5. the opportunity to age in place until, and including, death.

Beginning in 2021, when the leading edge of boomers turns age 75, there will be a rapid growth in the need for supportive housing. There are innovative housing options emerging, and they are likely to be more fully developed by the boomer generation unwilling to be unnecessarily institutionalized, bureaucratized, or medicalized in late life and wanting to be surrounded by caring people and with the opportunity for purposeful things to do. Two such innovations are summarized.

Elder Cohousing

If you are in your 50s or 60s, you have probably had a conversation centered around the following question: Would it not be neat if several of us who share similar values get together in retirement and live out our remaining days together in a supportive community? The details vary, of course. Some boomers discuss buying homes near each other. Others discuss taking over a large home, dividing it up, and figuring out ways to live together and share expenses.

Well, some people are starting to do something about it. There is a new housing concept, called cohousing, where older adults figure out how to live interdependently as housemates or neighbors. There is even a cohousing organization that provides ideas on shared visions and values; strategies for architectural innovation, such as designs to enhance the sense of community that allows both common areas and privacy; and approaches to shared management and decision making. Elder cohousing refers to privately owned homes that are socially and architecturally innovative with resident input, in a caring, noninstitutional environment.

The cohousing concept is designed not only to help people live more communally in late life, but to live in these homes until they die. The term *aging in place* is often a misnomer because sooner or later, the overwhelming majority of people leave their homes and wind up dying in a hospital or nursing home.

One cohousing organization, called the Elder Cohousing Network, is based in Boulder, Colorado, and has helped 85 individuals or groups to develop these innovative housing options. It began in 1991 in Davis, California, and focuses on those who are aged 55 and older. In August 2004, this network registered as a nonprofit organization to help existing groups figure out how to implement their housing ideas. They also

help to network individuals in the same area who might want to consider forming a group for cohousing. For more information, contact the Elder Cohousing Network, 1460 Quince Avenue, #102, Boulder, CO 80304; 303-413-8066; http://www.eldercohousing.org.

One such cohousing project, facilitated by the Elder Cohousing Network, began in 2002 and called itself the Glacier Circle Community. About two dozen people, mostly friends from a Unitarian Universalist Church in Davis, California, hired lawyers and architects to help them create a small cooperative-style housing community of seniors. The members of the community, ranging in age from 70 to 84, participated in facilitation training at the local university in order to enhance their communication skills with each other in the planning of their vision.

They came up with a plan for eight townhomes, ranging in size from 1,000 to 1,400 square feet and designed for energy efficiency with skylights and sun tubes. There is a common garden that includes fruit trees, vegetables, and flowering plants and a common house with an affordable second-floor apartment that is offered to individuals in exchange for help with cooking and maintenance as residents age in place. For additional information, contact Glacier Circle Senior Community, 2358 Glacier Place, Davis, CA 95616.

Green House

For people who are frail, William Thomas, MD, has created the Green House, an innovative long-term care home—not facility—that does not succumb to the problems of institutionalization and the medical model. In traditional nursing homes, residents are viewed as sick and dependent, which fosters learned helplessness and induced disability. Staff, for example, may encourage wheelchair dependency to serve the needs of staff members who are pressed for time. Dressing, feeding, bathing, and toileting need to be routinized and sped up for aides needing to stay on schedule. A staff member is more likely to rely on incontinence briefs than to take the time to develop individualized toileting routines.

Green Houses, in contrast, look like surrounding homes in a residential community. They are homes, not homelike, though they are bigger than the average home. The first ones were constructed in Tupelo, Mississippi, in 2003 and were 6,400 square feet. The rooms in these homes include extra expense, such as ceiling lifts, but these innovations can save costs over the long term by reducing back injuries, employee turnover, and workers' compensation.

Green House workers are paid more and are better trained, but the extra costs are offset by employee empowerment that reduces staff turnover and additional training expenses. The annual turnover rate in the

average nursing home is 75%, while it was less than 10% in the first Green House in Tupelo. Moreover, not one staff person left during the first 3 years of existence.

About 10 people live in a Green House, each having a private room and bath and access to a central hearth, where cooking and socializing are done. There is a surrounding garden for contemplative walks and for growing vegetables and flowers. Doors can be opened to view the garden and hearth from an individual room or closed for privacy. With the circular nature of the individual rooms, both the garden and the central hearth are within 30 feet. There is strategically placed furniture to help with cruising to central areas and to help with gains in mobility.

Green Houses promote autonomy. Residents awaken, eat, and go to bed when they want. They decide on which foods to eat, and that may even include pizza, wine, or ice cream. Medications are locked in individual rooms, rather than distributed by a cart that is wheeled from room to room. There are few features that are different from the typical home. If there are unusual features, they are de-emphasized, like a ceiling lift that is recessed and used only when needed for transfer. Induction cooking in the kitchen prevents residents from burning themselves on a stove. Stoves have shut-off valves, with pot trappers to prevent hot pots from burning residents. A safety gate around the kitchen can be used when necessary.

People in the first 10 Green Houses were selected from nursing homes and represented a typical nursing home population. Of the first 40 selected, 12 had advanced dementia, and all Green House residents had the typical array of physical and cognitive limitations associated with the average nursing home resident.

Decision making is lodged in residents and workers, unless there are safety or budget issues that cannot be handled at that level. Aides are called *shahbazim* (derived from the mythical Persian royal falcon that protected the king), with the primary job responsibility being to protect, nurture, and sustain.

The desired staff to resident ratio is 1:5; the nurse to house ratio is 1:2 (or 1:20 people), and one administrator (and one assistant) for every 12 houses (or 1:120 people). Staff find replacements for themselves if sick, either through a substitute pool or through overtime (which is managed within the allowable budget).

Workers receive 120 hours of additional training in areas such as CPR, first aid, culinary skills, safe food handling, communication, and dementia care. They are better paid than the average long-term care worker ($11 vs. $7.50) and are given rotating responsibility (purchasing food and cooking, housekeeping, scheduling, budget, etc.). Unless the nonclinical work teams endanger safety or overspend a budget, administrators cannot overrule their decisions.

Every Green House has been fully staffed so far, never a day understaffed. Wheelchair use has declined, and strength of residents has increased. Residents have the option to eat in a group or alone, with an individualized menu and pleasant surroundings—referred to as a "convivium." A local cookbook is assembled to cater to the tastes of people born in a region. *Shahbazim* can eat with residents and participate in activities with them, along with family and friends.

Most of these ideas are summarized in William Thomas's (2004) book *What Are Old People For?* and in a journal article (Rabig et al., 2006). In a publication called *CNS SeniorCare* (Winter, 2006), Thomas sums up his philosophy:

> Old age, like all the other phases of our lives, should be about life and living. Treating aging as a medical condition that must be managed with the professional distance prescribed by the medical model is wrong and leads to terrible suffering. For decades we have organized the life of the elder or disabled individual in a skilled nursing facility around the needs of the institution, rather than individuals who live there. (p. 14)

The Robert Wood Johnson Foundation provided a $10 million grant (from 2006 to 2010) to establish at least 30 Green Houses around the United States and to allow other long-term care owners and administrators to replicate them through training support and up to $125,000 in predevelopment loans.

Miscellaneous

The following ideas are not quite as innovative as elder cohousing and Green Houses but need to be refined and expanded.

Granny-flat apartments added to single-family homes can provide living areas to older relatives. These accessory dwelling units balance the need for family privacy with easy accessibility for family caregiving. These add-on dwelling units, however, are often blocked by zoning ordinances concerned more about population density in a community than about the needs of aging family members.

The National Association of Home Builders, in collaboration with AARP, developed the Certified Aging-in-Place Specialist (http://www.nahb.org). These specialists are trained in the unique needs of older adults and in the home modifications that can help older adults to continue to live independently.

Reverse mortgages are loans made to retirees against a portion of their home equity to allow older adults to age in place. The loans come due, with interest, only when the house is sold, often after the borrower dies. These loans are readily available, mostly through the Federal

Housing Administration, but only 180,000 of them have been obtained to date. The major obstacle is that a hefty insurance premium has been required to protect the lender in case the value of the house declines.

Volunteer home modification programs provide home improvements that allow older adults to remain in their homes. These efforts take place in most communities through one of a variety of community groups, including ones sponsored by area agencies on aging, faith-based organizations, other community groups, and corporations. These programs attempt to keep their costs down by utilizing volunteer labor and donated materials.

Creative Career Opportunity: Supportive Housing Specialist

The supportive housing specialist helps create housing alternatives for older adults needing assistance to remain as independent, autonomous, and socially connected as possible. This job can be structured as an independent consultant for individuals interested in cohousing, or it can be a government position that will likely be created to help find cost-effective alternatives for an aging population that will more than double in size between 2000 and 2029.

New ideas are emerging all the time, including 30 recently developed college-affiliated retirement communities and 25 more in various stages of development (June, 2006). There will be positions for supportive housing specialists in the creation of financial support for innovative housing options and for the design, marketing, and management of these facilities.

These new career opportunities in housing may be interrelated with the other jobs previously described as there will likely be a need for innovative physical health programming (such as chronic disease self-management) and mental health programming (life reviews) at these newly developed supportive housing sites.

CONCLUSION

The four content areas selected for this concluding chapter caught my fancy, but if you skim through this book one more time, you will see many innovative and creative ways to work in the fields of gerontology and geriatrics. Many of these career paths are just beginning to emerge, like the examples in this chapter, and some have not yet been invented.

What better way to end this book than by quoting Peter Drucker (1909–2005), an innovative thinker, a productive author in the field of work, and a spirited person into his mid-90s, who declared, “The best way to predict the future is to create it.”

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