

ELEVENTH EDITION

FIT & WELL

CORE CONCEPTS AND LABS IN PHYSICAL FITNESS AND WELLNESS

Thomas D. Fahey | Paul M. Insel | Walton T. Roth

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Core Concepts and Labs in Physical Fitness and Wellness



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The Behavior Change Workbook and the laboratory activities are also found in an interactive format in Connect (www.mcgrawhillconnect.com).

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Fit & Well gives students the knowledge and skills they need to make meaningful and lasting behavior change. The new edition combines proven science-based content and digital teaching and learning tools with the exciting introduction of *liveWell*—an innovative online, multimedia program designed to help college students improve their exercise, eating, and stress management habits.

liveWell, created by Dr. James Prochaska, is a two-part, **self-administered program** that includes the following:

- An **online, personalized** assessment of current **health-related behaviors** and readiness to make meaningful **behavior change**.
- A **Personal Activity Center** (home page) containing activities, such as exercise videos and stress management tools, matched to each individual's behavior change goals and readiness to change.

liveWell a healthy foundation for life

Your Level of Confidence

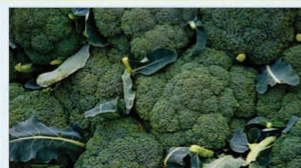
Click on each picture to see some ideas. Select the ones you'd be willing to try. An asterisk (*) means that a recipe will show up in your printed report.



Strawberries

Consider eating strawberries...

- Mixed with cold or hot cereal
- On top of yogurt (even on top of frozen yogurt as a dessert)
- In a spinach salad
- On fat-free angel food cake



Consider eating broccoli...

- As a topping on a whole wheat crust pizza
- Raw in all types of salads
- In a stir-fry with chicken and brown rice

THE *FIT & WELL* LEARNING SYSTEM

liveWell complements the existing digital and print instructional tools that make up the *Fit & Well* program. At the center of these tools is Connect, McGraw-Hill's digital learning platform, featuring LearnSmart.

Connect offers a wealth of interactive online content, including fitness labs and self-assessments, video activities on timely health topics such as tattooing and tanning beds, a fitness and nutrition journal, a behavior-change workbook, exercise demonstration videos, and practice quizzes with immediate feedback. The media-rich e-book available with Connect Plus contains embedded video clips and full-color images and features note-taking and highlighting functionality. LearnSmart, McGraw-Hill's unparalleled adaptive testing program, diagnoses students' knowledge of a subject and then creates an individualized path to help them master fitness and wellness concepts and increase their academic performance. Most important, LearnSmart for *Fit & Well* helps students establish a solid conceptual foundation that will enable them to create a personal path toward healthy change and lifetime wellness.

Instructors have this to say about Connect for *Fit & Well*:

"Since using Connect my overall grades at the end of the semester have improved tremendously. Connect is easy to use and a great addition to my Health and Wellness class."

—Donna Campbell, Abraham Baldwin College

"I am very impressed with Connect and think it a vital part of using this book."

—Jason Slack, Utah Valley University

"McGraw Hill has done a fabulous job of keeping up with HOW students learn . . . Connect is the key to separating this text from all the others."

Connect is an awesome tool which makes our jobs as instructors much easier."

—Alan Kramer, Abraham Baldwin Agricultural College

"I love Connect! I use this exclusively for all the assignments for the course."

—Tracy Yengo, University of Wisconsin–Eau Claire

PROVEN, SCIENCE-BASED CONTENT

The digital teaching and learning tools within Connect are built on the solid foundation of *Fit & Well's* authoritative, science-based content. *Fit & Well* is written by experts who work and teach in the fields of exercise science, physical education, and health education. *Fit & Well* provides accurate, reliable current information on key health and fitness topics while also addressing issues related to mind-body health, research, diversity, gender, and consumer health.



Fitness Tips and Wellness Tips catch students' attention and get them thinking—and doing something—about their fitness and wellness.



Diversity Matters features address the ways that our personal backgrounds influence our health strengths, risks, and behaviors.



Wellness in the Digital Age sections focus on the many fitness- and wellness-related devices and applications that are appearing every day.



In Focus sections explore current trends and topics in fitness and wellness, such as high-interval training and exercising with kettlebells, stability balls, and medicine balls.



Evidence for Exercise sections demonstrate that physical activity and exercise recommendations are based on solid scientific evidence.



Hands-on lab activities give students the opportunity to assess their current level of fitness and wellness and to create their own individualized programs for improvement.



Critical Consumer boxes help students navigate the numerous and diverse set of health-related products currently available.



Exercise photos and online videos demonstrate exactly how to correctly perform exercises described in the text.

CHAPTER-BY-CHAPTER CHANGES

Chapter 1

- The discussion of the dimensions of wellness has been thoroughly updated, with the addition of *financial wellness* as a seventh dimension.
- All of the chapter's statistical material has been updated to reflect the latest information on morbidity, mortality, and measures of quality of life.

Chapter 2

- New information has been added on the negative health effects of prolonged sitting.
- The discussion of the health benefits of moderate and intense exercise has been thoroughly updated with the newest research.
- A new section discusses the relationship between somatype (body build) and preferred exercise types.
- Relevant content has been updated with the most recent statistics available from the CDC on the physical activity and exercise habits of Americans.

Chapter 3

- The discussion of the many health benefits of cardiorespiratory endurance exercise has been updated with the latest research.
- A new section discusses the role of cardiorespiratory exercise in increasing acute inflammation and decreasing chronic inflammation.
- The Beep Test has been added to Lab 3.1, "Assessing Your Current Level of Cardiorespiratory Endurance."
- A new In Focus feature has been added, titled "Cross Training Your Way to Fitness."
- A new section explores the pros and cons of barefoot running and minimalist footwear.

Chapter 4

- Extensive new coverage (with photographs) provides instructions for strength-training exercises that can be done with no or minimal equipment, outside of the gym. A set of related videos are available in Connect.

- New coverage (with photographs) describes the techniques and benefits of working out with a kettlebell. Related videos are available in Connect.
- A new section addresses the efficacy of vibration training.
- New content addresses the insignificance of THR when writing FITT plans for strength/endurance.

Chapter 5

- The Front Plank test has been added to Lab 5.4, "Assessing Muscular Endurance for Low-Back Health."
- Stability ball exercises have been added to the section on Low-Back Stretches, along with a related video in Connect.

Chapter 6

- All data and information on the prevalence of overweight and obesity among American adults has been updated; two new figures better represent these data visually.
- The coverage of BMI has been significantly updated with new information regarding the problems of using BMI to predict health and longevity.
- A new section outlines the relationship between body composition and somatotype.
- Bioelectrical Impedance and U.S. Navy Circumference Methods have been added to Lab 6.1, "Assessing Body Mass Index and Body Composition."

Chapter 7

- The section on stability balls includes new information regarding their efficacy as a training tool.
- New content addresses the link between weight training programs and blood vessel stiffness.
- The section on using apps in your training programs now includes the Nike Training Club.

Chapter 8

- The coverage of fats has been completely revised to reflect the latest research on the health effects of saturated, trans, monosaturated, and polysaturated fats.
- The section on carbohydrates has been extensively updated and revised.
- A new section addresses the prevalence of functional foods in the American diet.

- Coverage of the 2011 Food Safety Modernization Act has been added.

Chapter 9

- Statistics on overweight and obesity in the United States have been updated throughout the chapter.
- A new section, “Overweight and Obesity Defined,” clarifies the definitions and implications of these two terms.
- A new “Critical Consumer” box titled “Is Any Diet Best for Weight Loss?” addresses the proven success rates of various popular weight-loss diets.
- The discussion of hidden and undisclosed ingredients in weight-loss drugs has been extensively updated.
- The box “Diversity Matters: Gender, Ethnicity, and Body Image” has been updated to reflect the latest research.

Chapter 10

- The discussion of the relationship between exercise and mental health has been extensively updated to reflect the latest research and recommendations.
- Relevant statistics have been updated with the latest findings from the 2011 *Stress in America* survey.
- Coverage of the relationship between sleep problems and stress has been updated with the latest data from the National Sleep Foundation.

Chapter 11

- All statistics have been updated to reflect the latest data from the American Heart Association’s Heart Disease and Stroke Statistics, 2013.
- The section “What To Do in Case of a Heart Attack, Stroke, or Cardiac Arrest” has been updated with the latest recommendations from the American Heart Association.
- Coverage of the effect of exercise on CVD risk has been extensively updated with new research findings and guidelines.

Chapter 12

- All statistics have been updated to reflect the latest data from authoritative sources, including the American Cancer Society’s Cancer Facts and Figures, 2013.

- A new “In Focus” box, “Genetic Testing,” discusses genetic testing for and possible genetic treatment of cancer.
- Table 12.2, “Screening Guidelines for the Early Detection of Cancer,” has been updated with the latest recommendations from the American Cancer Society.
- New coverage addresses emerging cancer treatments, such as monoclonal antibody therapy.

Chapter 13

- The chapter has been revised throughout to reflect the new definitions of dependence and addiction present in *DSM-5*.
- A new section discusses the “flushing syndrome” exhibited by some people in response to alcohol.
- The discussion of the effects of smoking during pregnancy has been updated to reflect the latest research.
- The section “Action Against Tobacco” has been updated with the latest legislation against tobacco at the local, state, and federal levels.

Chapter 14

- The chapter has been updated with the terminology “sexually transmitted infection,” to reflect the latest scientific usage.
- Statistics throughout the chapter have been updated with the latest information from sources such as the CDC, WHO, Guttmacher Institute, and others.
- The box “Evidence for Exercise: Does Exercise Help or Harm the Immune System?” has been updated with the latest research.

Chapter 15

- All data and statistics have been updated with the latest findings from the World Health Organization, World Wildlife Fund, United Nations, and others.
- New coverage addresses the prevalence, pros, and cons of biodiesel and all-electric vehicles.
- Updated coverage of nuclear power includes the 2011 Fukushima Daiichi nuclear disaster.
- A new section on noise pollution includes recommendations for avoiding hearing damage.

IMPROVE YOUR COURSE OUTCOMES



Connect for *Fit & Well* is a highly interactive learning environment designed to help students connect to the resources they will need to achieve success. Connect provides a wealth of assignments to encourage and track behavior change and to help ensure that students comprehend what they are reading and will succeed in the course.

Connect Plus includes the addition of an integrated, interactive e-book. Optimized for the Web, the e-book immerses students in a flexible, interactive environment.



LearnSmart, McGraw-Hill's adaptive learning system, helps assess student knowledge of course content and maps out a personalized study plan for success. Accessible within **Connect for *Fit & Well***, **LearnSmart** uses a series of adaptive questions to pinpoint the concepts students understand—and those they don't. The result is an online tool that helps students learn faster and study more efficiently and enables instructors to customize classroom lectures and activities to meet their students' needs.



Fueled by LearnSmart—the most widely used and intelligent adaptive learning resource—**SmartBook** is the first and only adaptive reading experience available today.

Distinguishing what a student knows from what they don't, and honing in on concepts they are most likely to forget, **SmartBook** personalizes content for each student in a continuously adapting reading experience. Reading is no longer a passive and linear experience, but an engaging and dynamic one where students are more likely to master and retain important concepts and come to class better prepared. Valuable reports provide instructors insight as to how students are progressing through textbook content and are useful for shaping in-class time or assessment. As a result of the adaptive reading experience found in SmartBook, students are more likely to retain knowledge, stay in class, and get better grades. This revolutionary technology is available only from McGraw-Hill Education and for hundreds of course areas as part of the LearnSmart Advantage series.



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ONLINE LEARNING CENTER FOR FIT & WELL

The **Online Learning Center (OLC)** at www.mhhe.com/fahey11e contains a wealth of instructor resources, including a Course Integrator Guide, Test Bank, and PowerPoint presentations for each chapter. The vast majority of images from the print text are also included on the site.

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Introduction to Wellness, Fitness, and Lifestyle Management



LOOKING AHEAD...

After reading this chapter, you should be able to:

- Describe the dimensions of wellness.
- Identify the major health problems in the United States today and discuss their causes.
- Describe the behaviors that are part of a wellness lifestyle.
- Explain the steps in creating a behavior management plan to change a wellness-related behavior.
- List some of the available sources of wellness information and explain how to think critically about them.

TEST YOUR KNOWLEDGE

1. Which of the following lifestyle factors is the leading preventable cause of death for Americans?
 - a. excess alcohol consumption
 - b. cigarette smoking
 - c. obesity
2. The terms *health* and *wellness* mean the same thing. True or false?
3. A person's genetic makeup determines whether he or she will develop certain diseases (such as breast cancer), regardless of that person's health habits. True or false?

See answers on the next page.

A college sophomore sets the following goals for herself:

- Join new social circles and make new friends whenever possible.
- Exercise every day.
- Clean up trash and plant trees in blighted neighborhoods in her community.

These goals may differ, but they have one thing in common. Each contributes, in its own way, to this student's health and well-being. Not satisfied merely to be free of illness, she wants more. She has decided to live actively and fully—not just to be healthy, but to pursue a state of overall wellness.

WELLNESS: NEW HEALTH GOALS

Generations of people have viewed health simply as the absence of disease, and that view largely prevails today. The word **health** typically refers to the overall condition of a person's body or mind and to the presence or absence of illness or injury. **Wellness** is a relatively new concept that expands this idea of health to include our ability to achieve optimal health. Beyond the simple presence or absence of disease, wellness refers to optimal health and vitality—to living life

Answers (Test Your Knowledge)

1. **b.** Smoking causes about 467,000 deaths per year. Obesity is responsible for more than 112,000 premature deaths, and alcohol is a factor in as many as 43,000 deaths.
2. **False.** Although the words are used interchangeably, they actually have different meanings. The term *health* refers to the overall condition of the body or mind and to the presence or absence of illness or injury. The term *wellness* refers to optimal health and vitality, encompassing all the dimensions of well-being.
3. **False.** In many cases, behavior can tip the balance toward good health even when heredity or environment is a negative factor.

to its fullest. Although we use the terms *health* and *wellness* interchangeably, there are two important differences between them:

- Health—or some aspects of it—can be determined or influenced by factors beyond your control, such as your genes, age, and family history. For example, consider a man with a strong family history of prostate cancer. These factors place this man at a higher-than-average risk for developing prostate cancer himself.
- Wellness is largely determined by the decisions you make about how you live. That same man can reduce his risk of cancer by eating sensibly, exercising, and having regular screening tests. Even if he develops the disease, he may still rise above its effects to live a rich, meaningful life. This means choosing not only to care for himself physically, but also to maintain a positive outlook, keep up his relationships with others, challenge himself intellectually, and nurture other aspects of his life.

Enhanced wellness, therefore, involves making conscious decisions to control **risk factors** that contribute to disease or injury. Age and family history are risk factors you cannot control. Behaviors such as choosing not to smoke, exercising, and eating a healthy diet are well within your control.

The Dimensions of Wellness

Social scientists have defined seven dimensions of wellness:

- Physical
- Emotional
- Intellectual
- Interpersonal
- Spiritual
- Environmental
- Financial

Each dimension of wellness affects the others. Further, the process of achieving wellness is constant and dynamic (Figure 1.1), involving change and growth. Ignoring any dimension of wellness can have harmful effects on your life.

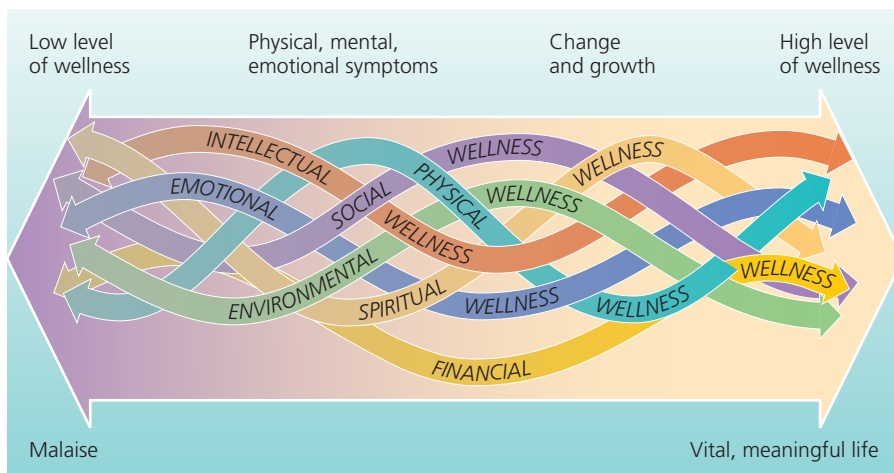


FIGURE 1.1 The wellness continuum. The concept of wellness includes vitality in seven interrelated dimensions, all of which contribute to overall wellness.

Table 1.1

Examples of Qualities and Behaviors Associated with the Dimensions of Wellness

PHYSICAL	EMOTIONAL	INTELLECTUAL	INTERPERSONAL	SPIRITUAL	ENVIRONMENTAL	FINANCIAL
• Eating well	• Optimism	• Openness to new ideas	• Communication skills	• Capacity for love	• Having abundant, clean natural resources	• Having a basic understanding of how money works
• Exercising	• Trust	• Capacity to question	• Capacity for intimacy	• Compassion	• Maintaining sustainable development	• Living within one's means
• Avoiding harmful habits	• Self-esteem	• Ability to think critically	• Ability to establish and maintain satisfying relationships	• Forgiveness	• Recycling whenever possible	• Avoiding debt, especially for unnecessary items
• Practicing safer sex	• Self-acceptance	• Motivation to master new skills	• Ability to cultivate a support system of friends and family	• Altruism	• Reducing pollution and waste	• Saving for the future and for emergencies
• Recognizing symptoms of disease	• Self-confidence	• Sense of humor		• Joy		
• Getting regular checkups	• Ability to understand and accept one's feelings	• Creativity		• Fulfillment		
• Avoiding injuries	• Ability to share feelings with others	• Curiosity		• Caring for others		
		• Lifelong learning		• Sense of meaning and purpose		
				• Sense of belonging to something greater than oneself		

The following sections briefly introduce the dimensions of wellness. Table 1.1 lists some of the specific qualities and behaviors associated with each dimension. Lab 1.1 will help you learn what wellness means to you and where you fall on the wellness continuum.

Physical Wellness Your physical wellness includes not just your body's overall condition and the absence of disease, but your fitness level and your ability to care for yourself. The higher your fitness level (which is discussed throughout this book), the higher your level of physical wellness will be. Similarly, as you become more able to care for your own physical needs, you ensure greater physical wellness. To achieve optimum physical wellness, you need to make choices that help you avoid illnesses and injuries. The decisions you make now—and the habits you develop over your lifetime—will largely determine the length and quality of your life.

Emotional Wellness Your emotional wellness reflects your ability to understand and deal with your feelings.

Emotional wellness involves attending to your own thoughts and feelings, monitoring your reactions, and identifying obstacles to emotional stability. *Self-acceptance* is your personal satisfaction with yourself, which might exclude society's expectations, whereas *self-esteem* relates to the way you think others perceive you. *Self-confidence* can be a part of both acceptance and esteem. Achieving this type of wellness means finding solutions to emotional problems, with professional help if necessary.

health The overall condition of body or mind and the presence or absence of illness or injury.

wellness Optimal health and vitality, encompassing all the dimensions of well-being.

risk factor A condition that increases one's chances of disease or injury.

TERMS



Wellness Tip

Enhancing one dimension of wellness can have positive effects on others. For example, joining a meditation group can help you enhance your spiritual well-being, but it can also affect the emotional and interpersonal dimensions of wellness by enabling you to meet new people and develop new friendships.

Intellectual Wellness Those who enjoy intellectual wellness constantly challenge their minds. An active mind is essential to wellness because it detects problems, finds solutions, and directs behavior. People who enjoy intellectual wellness never stop learning; they continue trying to learn new things throughout their lifetime. They seek out and relish new experiences and challenges.

Interpersonal Wellness Your interpersonal (or social) wellness is defined by your ability to develop and maintain satisfying and supportive relationships. Such relationships are essential to physical and emotional health. Social wellness requires participating in and contributing to your community and to society.

Spiritual Wellness To enjoy spiritual wellness is to possess a set of guiding beliefs, principles, or values that give meaning and purpose to your life, especially in difficult times. The spiritually well person focuses on the positive aspects of life and finds spirituality to be an antidote for negative feelings such as cynicism, anger, and pessimism. Organized religions help many people develop spiritual health. Religion, however, is not the only source or form of spiritual wellness. Many people find meaning and purpose in their lives on their own—through nature, art, meditation, or good works—or with their loved ones.

Environmental Wellness Your environmental wellness is defined by the livability of your surroundings. Personal health depends on the health of the planet—from the safety of the food supply to the degree of violence in society. Your physical environment either supports your wellness or diminishes it. To improve your environmental wellness, you can learn about and protect yourself against hazards in your surroundings and work to make your world a cleaner and safer place.

Financial Wellness Financial wellness refers to your ability to live within your means and manage your money

in a way that gives you peace of mind. It includes balancing your income and expenses, staying out of debt, saving for the future, and understanding your emotions about money. For more on this topic, see the “Financial Wellness” box.

Other Aspects of Wellness *Occupational wellness* refers to the level of happiness and fulfillment you gain through your work. Although high salaries and prestigious titles are nice, they alone generally do not bring about occupational wellness. An occupationally well person truly likes his or her work, feels a connection with others in the workplace, and has opportunities to learn and be challenged. Other aspects of occupational wellness include enjoyable work, job satisfaction, and recognition from managers and colleagues. An ideal job draws on your interests and passions, as well as your vocational or professional skills, and allows you to feel that you are contributing to society in your everyday work.

To achieve occupational wellness, set career goals that reflect your personal values. For example, a career in sales might be a good choice for someone who values financial security, whereas a career in teaching or nursing might be a good choice for someone who values service to others.

New Opportunities for Taking Charge

Wellness is a fairly new concept. A century ago, Americans considered themselves lucky just to survive to adulthood (Figure 1.2). A child born in 1900, for example, could expect to live only about 47 years. Many people died from common **infectious diseases** (such as pneumonia, tuberculosis, or diarrhea) and poor environmental conditions (such as water pollution and poor sanitation).

Since 1900, however, life expectancy has nearly doubled, and as of 2011, the average American’s life expectancy was 78.7 years. This increase in life span is due largely to the

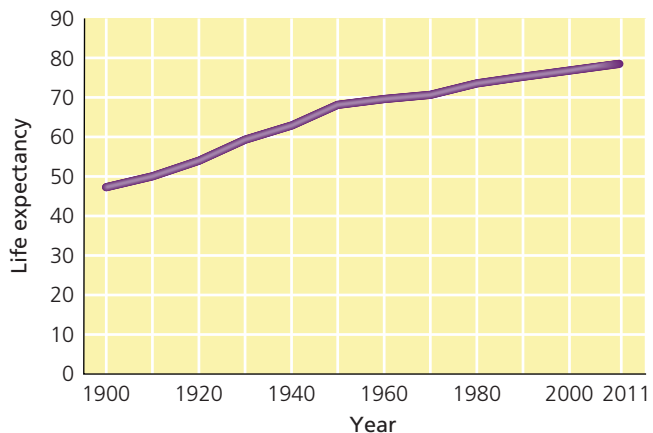


FIGURE 1.2 Life expectancy of Americans from birth, 1900–2011.

SOURCE: National Center for Health Statistics. 2012. Deaths: Preliminary data for 2011. *National Vital Statistics Reports* 61(6).

infectious disease A disease that can spread from person to person; caused by microorganisms such as bacteria and viruses.

TERMS



With the news full of stories of home foreclosures, credit card debt, and personal bankruptcies, it has become painfully clear that many Americans do not know how to manage their finances. You can avoid such stress—and gain financial peace of mind—by developing skills that contribute to financial wellness.

Financial wellness means having a healthy relationship with money. It involves knowing how to manage your money, using self-discipline to live within your means, using credit cards wisely, staying out of debt, meeting your financial obligations, having a long-range financial plan, and saving.

Learn to Budget

Although the word *budget* may conjure up thoughts of deprivation, a budget is really just a way of tracking where your money goes and making sure you're spending it on the things that are most important to you. To start one, list your monthly income and your expenditures. If you aren't sure where you spend your money, track your expenses for a few weeks or a month. Then organize them into categories, such as housing, food, transportation, entertainment, services, personal care, clothes, books and school supplies, health care, credit card and loan payments, and miscellaneous. Use categories that reflect the way you actually spend your money. Knowing where your money goes is the first step in gaining control of it.

Now total your income and expenditures. Are you taking in more than you spend, or vice versa? Are you surprised by your spending patterns? Use this information to set guidelines and goals for yourself. If your expenses exceed your income, identify ways to make some cuts. If you have both a cell phone and a land line, for example, consider whether you can give one up. If you spend money on movies and restaurants, consider less expensive options like having a weekly game night with friends or organizing an occasional potluck.

Be Wary of Credit Cards

College students are prime targets for credit card companies, and most undergraduates have at least one card. In fact, many college students use credit cards to live beyond their means, not just for convenience. According to a recent report, half of all students have four or more cards, and the average outstanding balance on undergraduate credit cards is more than \$3000.

The best way to avoid credit card debt is to have just one card, use it only when necessary, and pay off the entire balance every month. Make sure you understand terms like *APR* (annual percentage rate—the interest you're charged on your balance), *credit limit* (the maximum amount you can borrow at any one time), *minimum monthly payment* (the smallest payment your creditor will accept each month), *grace period* (the number of days you have to pay your bill before interest or penalties are charged), and *over-the-limit* and *late fees* (the amount you'll be charged if your payment is late or you go over your credit limit).

Get Out of Debt

If you have credit card debt, stop using your cards and start paying them off. If you can't pay the whole balance, at least try to pay more than the minimum payment each month. It can take a very long time to pay off a loan by making only the minimum payments. For example, to pay off a credit card balance of \$2000 at 10% interest with monthly payments of \$20 would take 203 months—17 years. To see for yourself, check out an online credit card calculator like <http://www.bankrate.com/calculators/credit-cards/credit-card-payoff-calculator.aspx>. And remember: By carrying a balance and incurring finance charges, you are also paying back much more than your initial loan.

Start Saving

The same miracle of compound interest that locks you into years of credit card debt can work to your benefit if you start saving early (for an online compound interest calculator, visit http://www.moneychimp.com/calculator/compound_interest_calculator.htm). Experts recommend “paying yourself first” every month—that is, putting some money into savings before you start paying your bills, depending on what your budget allows. You may want to save for a large purchase, or you may even be looking ahead to retirement. If you work for a company with a 401(k) retirement plan, contribute as much as you can every pay period.

Become Financially Literate

Although modern life requires financial literacy, most Americans have not received any basic financial training. Even before the economic meltdown that began in 2008, the U.S. government had established the Financial Literacy and Education Commission (<http://www.MyMoney.gov>) to help Americans develop financial literacy and learn how to save, invest, and manage their money better. The consensus is that developing lifelong financial skills should begin in early adulthood, during the college years, if not earlier.



SOURCES: Federal Deposit Insurance Corporation. 2010. *Money Smart: A Financial Education Program* (<http://www.fdic.gov/consumers/consumer/moneysmart/young.html>; retrieved March 22, 2013); Plymouth State University. 2013. *Student Monetary Awareness and Responsibility Today!* (<http://www.plymouth.edu/office/financial-aid/smart/>); U.S. Financial Literacy and Education Commission. 2013. *Do You Want to Learn How to Save, Manage, and Invest Your Money Better?* . *MyMoney.gov* (<http://www.mymoney.gov>).

development of vaccines and antibiotics to fight infections, and to public health measures to improve living conditions. But even though life expectancy has increased, poor health limits most Americans' activities during the last 15% of their lives, resulting in some sort of impaired life (Figure 1.3). Today, a different set of diseases has emerged as our major

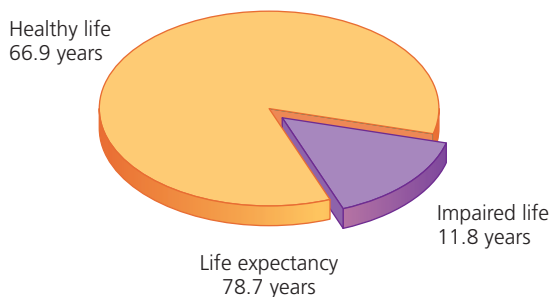


FIGURE 1.3 Quantity of life versus quality of life. Years of healthy life as a proportion of life expectancy in the U.S. population.

SOURCE: National Center for Health Statistics. 2012. Deaths: Preliminary data for 2010 (data release). *National Vital Statistics Report 60(4)*.

health threat: heart disease, cancer, and chronic lower respiratory diseases are now the three leading causes of death for Americans (Table 1.2). Treating such **chronic diseases** is costly and difficult.

The good news is that people have some control over whether they develop chronic diseases. People make choices every day that increase or decrease their risks for such diseases. These **lifestyle choices** include behaviors such as smoking, diet, exercise, and alcohol use. As Table 1.3 makes clear, lifestyle factors contribute to many deaths in the United States, and people can influence their own health risks. The need to make good choices is especially true for teens and young adults. For Americans age 15–24, for example, the top three causes of death are accidents, suicide, and homicide (Table 1.4).

The Healthy People Initiative

Wellness is a personal concern, but the U.S. government has financial and humanitarian interests in it, too. A healthy population is the nation's source of vitality, creativity, and wealth. Poor health drains the nation's resources and raises health care costs for all.

VITAL STATISTICS

Table 1.2 Leading Causes of Death in the United States, 2011

RANK	CAUSE OF DEATH	NUMBER OF DEATHS	PERCENTAGE OF TOTAL DEATHS*	LIFESTYLE FACTORS
	All causes	2,512,873	100.0	D I S A
1	Heart disease	596,339	23.7	D I S A
2	Cancer	575,313	22.9	I S A
3	Chronic lower respiratory diseases	143,382	5.7	D I S A
4	Stroke	128,931	5.1	D I S A
5	Unintentional injuries (accidents)	122,777	4.9	D I S A
6	Alzheimer's disease	84,691	3.4	
7	Diabetes mellitus	73,282	2.9	D I S A
8	Influenza and pneumonia	53,667	2.1	I S A
9	Kidney disease	45,731	1.8	D I S A
10	Intentional self-harm (suicide)	38,285	1.5	I S A
11	Septicemia (systemic blood infection)	35,539	1.4	I S A
12	Chronic liver disease and cirrhosis	33,539	1.3	I S A
13	Hypertension (high blood pressure)	27,477	1.1	D I S A
14	Parkinson's disease	23,107	0.9	
15	Lung inflammation due to inhaling solids and liquids	18,090	0.7	I S A
	All other causes	512,723		

Key	D Diet plays a part	S Smoking plays a part
	I Inactive lifestyle plays a part	A Excessive alcohol use plays a part

NOTE: Although not among the overall top 15 causes of death, HIV/AIDS is a major killer. In 2011, HIV/AIDS was the twelfth leading cause of death for Americans age 15–24 years and the eighth leading cause of death for those age 25–44 years.

SOURCE: National Center for Health Statistics. 2012. Deaths: Preliminary data for 2011. *National Vital Statistics Report 61(6)*.

VITAL STATISTICS

Table 1.3 Key Contributors to Death among Americans

	NUMBER OF DEATHS PER YEAR	PERCENTAGE OF TOTAL DEATHS PER YEAR
Tobacco	440,000	18.1
Obesity*	112,000	4.6
Alcohol consumption	85,000	3.5
Microbial agents	75,000	3.1
Toxic agents	55,000	2.3
Motor vehicles	43,000	1.8
Firearms	29,000	1.2
Sexual behavior	20,000	0.8
Illicit drug use	17,000	0.7

NOTE: The factors listed here are defined as lifestyle and environmental factors that contribute to the leading killers of Americans (health experts often refer to these as the *actual causes of death*). Microbial agents include bacterial and viral infections like influenza and pneumonia; toxic agents include environmental pollutants and chemical agents such as asbestos.

*The number of deaths due to obesity is an area of ongoing controversy and research. Recent estimates have ranged from 112,000 to 365,000.

SOURCES: Centers for Disease Control and Prevention. 2005. *Frequently Asked Questions about Calculating Obesity-Related Risk*. Atlanta: Centers for Disease Control and Prevention; Mokdad, A. H., et al. 2005. Correction: Actual causes of death in the United States, 2000. *Journal of the American Medical Association* 293(3): 293–294; Mokdad, A. H., et al. 2004. Actual causes of death in the United States, 2000. *Journal of the American Medical Association* 291(10): 1238–1245.

VITAL STATISTICS

Table 1.4 Leading Causes of Death among Americans Age 15–24, 2011

RANK	CAUSE OF DEATH	NUMBER OF DEATHS	PERCENTAGE OF TOTAL DEATHS
1	Accidents:	12,032	40.6
	Motor vehicle	6,984	23.6
	All other accidents	5,048	17.1
2	Suicide	4,688	15.8
3	Homicide	4,506	15.2
4	Cancer	1,609	5.4
5	Heart disease	948	3.2
	All causes	29,605	100.0

SOURCE: National Center for Health Statistics. 2012. Deaths: Preliminary data for 2011. *National Vital Statistics Report* 61(6).

The national Healthy People initiative aims to prevent disease and improve Americans’ quality of life. Healthy People reports, published each decade since 1980, set national health goals based on 10-year agendas. The initiative’s most recent iteration, *Healthy People 2020*, was developed

Fitness Tip



In Table 1.2, notice how many causes of death are related to lifestyle. This is an excellent motivator for adopting healthy habits and staying in good condition. Maintaining physical fitness and a healthy diet can lead to a longer life. It’s a fact!

in 2008–2009 and released to the public in 2010. *Healthy People 2020* envisions “a society in which all people live long, healthy lives” and proposes the eventual achievement of the following broad national health objectives:

- *Eliminate preventable disease, disability, injury, and premature death.* This objective involves activities such as taking more concrete steps to prevent diseases and injuries among individuals and groups, promoting healthy lifestyle choices, improving the nation’s preparedness for emergencies, and strengthening the public health infrastructure.
- *Achieve health equity, eliminate disparities, and improve the health of all groups.* This objective involves identifying, measuring, and addressing health differences between individuals or groups that result from a social or economic disadvantage. (See the box “Wellness Issues for Diverse Populations.”)
- *Create social and physical environments that promote good health for all.* This objective involves the use of health interventions at many different levels (such as anti-smoking campaigns by schools, workplaces, and local agencies), improving the situation of undereducated and poor Americans by providing a broader array of educational and job opportunities, and actively developing healthier living and natural environments for everyone.
- *Promote healthy development and healthy behaviors across every stage of life.* This goal involves taking a cradle-to-grave approach to health promotion by encouraging disease prevention and healthy behaviors in Americans of all ages.

In a shift from the past, *Healthy People 2020* emphasizes the importance of health determinants—factors that affect the health of individuals, demographic groups, or entire populations. Health determinants are social (including factors such as ethnicity, education level, and economic status) and environmental (including natural and human-made environments). Thus, one goal is to improve living conditions in ways that reduce the impact of negative health determinants.

chronic disease A disease that develops and continues over a long period of time, such as heart disease or cancer.

TERMS

lifestyle choice A conscious behavior that can increase or decrease a person’s risk of disease or injury; such behaviors include smoking, exercising, and eating a healthy diet.



DIVERSITY MATTERS

Wellness Issues for Diverse Populations

When it comes to striving for wellness, most differences among people are insignificant. We all need to exercise, eat well, and manage stress. We all need to know how to protect ourselves from disease and injuries.

But some of our differences—both as individuals and as members of groups—have important implications for wellness. Some of us, for example, have grown up with eating habits that increase our risk of obesity or heart disease. Some of us have inherited predispositions for certain health problems, such as osteoporosis or high cholesterol levels. These health-related differences among individuals and groups can be biological (determined genetically) or cultural (acquired as patterns of behavior through daily interactions with family, community, and society). Many health conditions are a function of biology and culture combined.

Every person is an individual with her or his own unique genetic endowment as well as unique experiences in life. However, many of these influences are shared with others of similar genetic and cultural backgrounds. Information about group similarities relating to wellness issues can be useful. For example, it can alert people to areas that may be of special concern for them and their families.

Wellness-related differences among groups can be described along several dimensions, including the following:

Gender. Men and women have different life expectancies and different incidences of many diseases, including heart disease, cancer, and osteoporosis. Men have higher rates of death from injuries, suicide, and homicide, whereas women are at greater risk for Alzheimer's disease and depression. Men and women also differ in body composition and certain aspects of physical performance.

Race and Ethnicity. A genetic predisposition for a particular health problem can be linked to race or ethnicity as a result of each group's relatively distinct history. Diabetes is more prevalent among individuals of Native American or Latino heritage, for example, and African Americans have higher rates of hypertension. Racial or ethnic groups may also vary in other ways that relate to wellness: traditional diets; patterns of family and interpersonal relationships; and attitudes toward using tobacco, alcohol, and other drugs, to name just a few.

Income and Education. Inequalities in income and education underlie many of the health disparities among Americans. People with low incomes (low



socioeconomic status, or SES) and less education have higher rates of injury and disease, are more likely to smoke, and have less access to health care. Poverty and low educational attainment are far more important predictors of poor health than any racial or ethnic factor.



Table 1.5 shows examples of individual health promotion goals from *Healthy People 2020*, as well as estimates of how well Americans are achieving those goals.

Behaviors That Contribute to Wellness

A lifestyle based on good choices and healthy behaviors maximizes quality of life. It helps people avoid disease, remain strong and fit, and maintain their physical and mental health as long as they live.

Be Physically Active The human body is designed to work best when it is active. It readily adapts to nearly any level of activity and exertion. **Physical fitness** is a set of physical attributes that allows the body to respond or adapt to the demands and stress of physical effort. The more we ask of our bodies, the stronger and more fit they become. When our bodies are not kept active, however, they deteriorate.

Bones lose their density, joints stiffen, muscles become weak, and cellular energy systems degenerate. To be truly well, human beings must be active.

Unfortunately, a **sedentary** lifestyle is common among Americans. According to recent estimates from the Healthy People program, fewer than one-third of adult Americans regularly engage in some sort of moderate physical activity. A recent study by the National Center for Health Statistics (NCHS) found that nearly 40% of adult Americans get no leisure-time activity at all.

The benefits of physical activity are both physical and mental, immediate and long term (Figure 1.4). In the short term, being physically fit makes it easier to do everyday tasks, such as lifting; it provides reserve strength for emergencies; and it helps people look and feel good. In the long term, being physically fit confers protection against chronic diseases and lowers the risk of dying prematurely. (See the box “Does Being Physically Active Make a Difference in How Long You Live?”) Physically active people are less likely to

Table 1.5 Selected *Healthy People 2020* Objectives

OBJECTIVE	ESTIMATE OF CURRENT STATUS*	GOAL*
Reduce the proportion of adults who engage in no leisure-time physical activity	36.2	32.6
Increase the proportion of adults who are at a healthy weight	30.8	33.9
Reduce tobacco use (cigarette smoking) among adults	20.6	12.0
Increase the proportion of adults with mental health disorders who receive treatment	58.7	64.6
Reduce the proportion of adults with hypertension	29.9	26.9
Increase the proportion of adults who get sufficient sleep	69.6	70.9
Reduce the proportion of adults who drank excessively in the previous 30 days	28.1	25.3
Increase the proportion of persons who use the Internet to communicate with their health care provider	13	15

*Percentage of adult Americans

SOURCE: U.S. Department of Health and Human Services. 2013. *Healthy People 2020* (<http://www.healthypeople.gov>; retrieved March 20, 2013).

develop or die from heart disease, respiratory disease, high blood pressure, cancer, osteoporosis, and type 2 diabetes (the most common form of diabetes). As they get older, they may be able to avoid weight gain, muscle and bone loss, fatigue, and other problems associated with aging.

Choose a Healthy Diet In addition to being sedentary, many Americans have a diet that is too high in calories, unhealthy fats, and added sugars, as well as too low in fiber, complex carbohydrates, fruits, and vegetables. Like physical inactivity, this diet is linked to a number of chronic diseases. A healthy diet provides necessary nutrients and sufficient energy without also providing too much of the dietary substances linked to diseases.

Maintain a Healthy Body Weight Overweight and obesity are associated with a number of disabling and potentially fatal conditions and diseases, including heart disease, cancer, and type 2 diabetes. The Centers for Disease Control and Prevention (CDC) estimates that obesity kills 112,000 Americans each year. Healthy body weight is an important

part of wellness—but short-term dieting is not part of fitness or wellness. Maintaining a healthy body weight requires a lifelong commitment to regular exercise, a healthy diet, and effective stress management.

Manage Stress Effectively Many people cope with stress by eating, drinking, or smoking too much. Others don't deal with it at all. In the short term, inappropriate stress management can lead to fatigue, sleep disturbances, and other symptoms. Over longer periods of time, poor stress management can lead to less efficient functioning of the immune system and increased susceptibility to disease. Learning to incorporate effective stress management techniques into daily life is an important part of a fit and well lifestyle.

Avoid Tobacco and Drug Use and Limit Alcohol Consumption Tobacco use is associated with 8 of the top 10 causes of death in the United States; personal tobacco use and second-hand smoke kill about 443,000 Americans each year, more than any other behavioral or environmental factor. With 19% of adult Americans describing themselves as current smokers as of 2011, lung cancer is the most common cause of cancer death among both men and women and one of the leading causes of death overall. On average, the direct health care costs associated with smoking exceed \$96 billion per year. If the cost of lost productivity from sickness, disability, and premature death is included, the total is closer to \$193 billion.

Excessive alcohol consumption is linked to 6 of the top 10 causes of death and results in about 85,000 deaths a year in the United States. The social, economic, and medical costs of alcohol abuse are estimated at more than \$224 billion per year. Alcohol or drug intoxication is an especially notable factor in the death and disability of young people, particularly

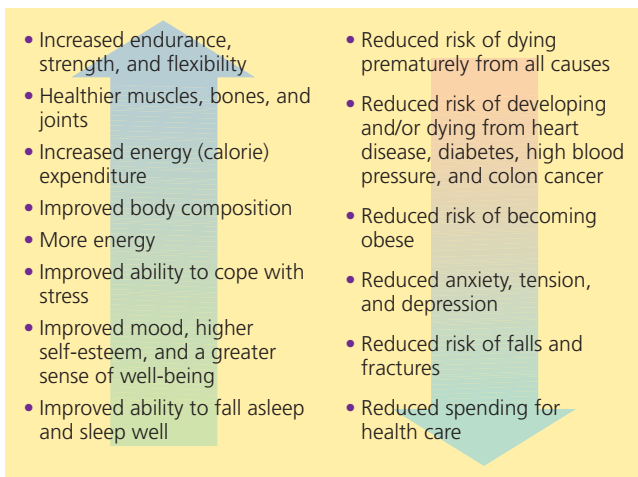


FIGURE 1.4 Benefits of regular physical activity.

TERMS

physical fitness A set of physical attributes that allows the body to respond or adapt to the demands and stress of physical effort.

sedentary Physically inactive; literally, "sitting."