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Fit & Well

Core Concepts and Labs in
Physical Fitness and Wellness



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THIRTEENTH EDITION

FIT & WELL

Core Concepts and Labs in Physical Fitness and Wellness



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THIRTEENTH EDITION

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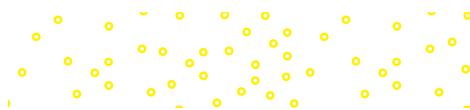
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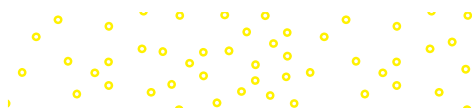
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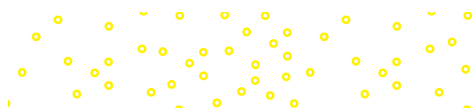
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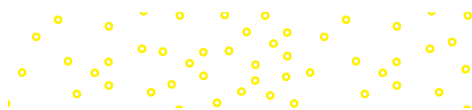
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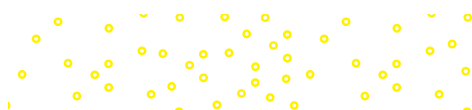
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The Behavior Change Workbook and the laboratory activities are also found in an interactive format in Connect (connect.mheducation.com).

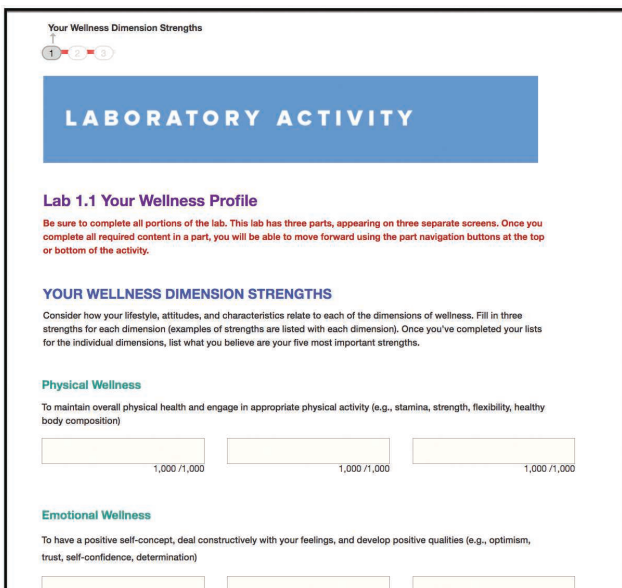


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McGraw-Hill Connect[®] is a reliable, easy-to-use homework and learning management solution that uses learning science and award-winning adaptive tools to improve student results. Connect's assignments help students contextualize what they've learned through application, so they can better understand the material and think critically. Connect content is available through a simple and intuitive interface. Connect for *Fit & Well* offers a wealth of interactive online content, including fitness labs and self-assessments, video activities on timely health topics and exercise techniques, a behavior change workbook, and practice quizzes with immediate feedback.

New to this edition are assignable and assessable **Concept Clips**, which help students master key fitness and wellness concepts. Using colorful animation and easy-to-understand audio narration, Concept Clips provide step-by-step presentations to promote student comprehension; topics covered include the stages of change model, types of diabetes, and the stress response. Also new are **NewsFlash** activities, which tie current news stories to key fitness and wellness concepts. After interacting with a contemporary news story, students are assessed on their understanding and their ability to make the connections



between real-life events and course content. Examples of NewsFlash topics include food fads, stress and obesity, and factors affecting life expectancy.



Connect Insight[®] is a visual analytics dashboard—now available for both instructors and students—that provides immediately actionable, at-a-glance information to empower learners and help improve student performance. Connect Insight presents assignment, assessment, and topical performance results along with a time metric that is easily visible for aggregate or individual results. Using robust visual data displays that are each framed by an intuitive question, Connect Insight gives both instructors and students the ability to take a just-in-time approach to teaching and learning. By providing actionable recommendations, Connect Insight guides students toward behaviors that could increase performance and enables instructors to give targeted tuition precisely when and where it is needed.



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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, diversity, research, and consumer health.



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



Diversity Matters features address the ways that our biological and cultural differences influence our health strengths, risks, and behaviors.



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



Fitness Tips and **Wellness Tips** catch students' attention and get them thinking about—and acting to improve—their fitness and wellness.



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



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.



Take Charge features provide a wealth of practical advice for students on how to apply concepts from the text to their own lives.



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

Wellness in Digital Age (smartwatch): ©Hong Li / Getty Images RF; Evidence for Exercise (sneakers & stethoscope): ©Vstock LLC / Getty Images RF; Critical Consumer (businessman): ©sam74100/Getty Images; Take Charge (woman in red shirt): ©VisualsCommunications/Getty RF; Diversity Matters (large group): ©Rawpixel Ltd/Getty Images; Fitness Tips (dumbbells): ©Fuse/Getty Images; Hands-on lab activities (smartphone): ©McGraw-Hill Education. Mark Dierker, photographer; Exercise photos and online videos (squat): ©Taylor Robertson Photography

WHAT'S NEW IN *FIT & WELL*, 13TH EDITION

UPDATES INFORMED BY STUDENT DATA

Changes to the 13th edition reflect new research findings, updated statistics, and current hot topics that impact students' fitness and wellness behaviors. Revisions were also guided by student performance data collected anonymously from the tens of thousands of students who have used LearnSmart with *Fit & Well*. Because virtually every text paragraph is tied to several questions that students answer while using LearnSmart, the specific concepts that students are having the most difficulty with can be pinpointed through empirical data.

Aggregated student performance data collected anonymously from LearnSmart helps pinpoint concepts students find most challenging, guiding revisions to the text and Connect program.

	Contemplation
52%	People at this stage know they have a problem and intend to take action within six months. They acknowledge the benefits of behavior change but worry about the costs of changing. To be successful, people must believe that the benefits of change outweigh the costs. People in the contemplation stage wonder about possible courses of action but don't know how to proceed. There may also be specific barriers to change that appear too difficult to overcome.
0:39	
7337	
	Preparation
73%	People at this stage plan to take action within a month or may already have begun to make small changes in their behavior. They may be engaging in their new, healthier behavior but not yet regularly or consistently. They may have created a plan for change but may be worried about failing.
0:24	
4361	
	Action
62%	During the action stage, people outwardly modify their behavior and their environment. The action stage requires the greatest commitment of time and energy, and people in this stage are at risk for reverting to old, unhealthy patterns of behavior.
0:36	
15084	

CHAPTER-BY-CHAPTER CHANGES

Chapter 1: Introduction to Wellness, Fitness, and Lifestyle Management

- New *Wellness in the Digital Age* feature about health behavior tracking apps
- New information on the obesity epidemic and life expectancy, on the costs of cardiovascular disease (CVD), and on the importance of exercise in reducing CVD risk
- Updated statistics on leading causes of death, key contributors to death among Americans, changes in life expectancy, progress toward *Healthy People 2020* targets, and health problems among college students

Chapter 2: Principles of Physical Fitness

- Updated American College of Sports Medicine (ACSM) recommendations for frequency, intensity, time, type, volume, and progression (FITT-VP) for fitness programs
- New and updated information on benefits of fitness, on exercise as a means for reducing anxiety, and on good nutritional choices to support an exercise program
- New information on digital workout aids in the *Wellness in the Digital Age* feature and on fitness trackers in Lab 2.3

- New Physical Activity Readiness Questionnaire for Everyone (PAR-Q+) in Lab 2.1

Chapter 3: Cardiorespiratory Endurance

- New and expanded information on the cardiorespiratory system, on the benefits of endurance exercise, and on applying the FITT-VP principle
- Updated discussion and illustration of ratings of perceived exertion (RPE), including the 0–10 scale
- Updated *Wellness in the Digital Age* feature about fitness trackers, heart rate monitors, and GPS devices

Chapter 4: Muscular Strength and Endurance

- New section on supplements and drugs, including cautions related to anabolic steroids
- New program planning table that includes major muscles, their functions, and related strength training exercises
- Updated coverage of the FITT-VP principle, weight training safety, strength training apps, and the McGill curl-up technique

Chapter 5: Flexibility and Low-Back Health

- Updated information on joint health and on exercises for low-back health

- Updated information on applying the FITT-VP principle to stretching programs

Chapter 6: Body Composition

- Updated statistics on obesity rates and trends in the United States; updated information on the complex relationship between energy intake and body weight
- Expanded discussion of factors that limit the accuracy of body mass index (BMI) as a tool for classifying health risks

Chapter 7: Putting Together a Complete Fitness Program

- New section on exercise guidelines for people with special health concerns (formerly in an appendix)
- Updated information on smartphone apps that support an exercise program

Chapter 8: Nutrition

- New information on the 2015–2020 *Dietary Guidelines for Americans*; the FDA’s nutrition facts and food package nutrient claims; and the USDA’s MyPlate and recommended food patterns
- New *Take Charge* feature with specific recommendations for how to meet the Dietary Guidelines
- New tables focused on dietary fiber and major dietary guidelines; new figure comparing the current U.S. diet versus recommendations
- New and updated information on added sugars, benefits of dietary fiber, nutrient density, the relationship between fats and health, and vegetarian diets

Chapter 9: Weight Management

- Updated discussion on the health effects of overweight/obesity; includes a new figure on the relationship between BMI and mortality
- New material on environmental and physiological factors that affect body composition, as well as how changes in metabolic rate affect weight loss and maintenance
- New information on energy balance and updated discussion of lifestyle factors that affect body fat and body weight
- New *Critical Consumer* feature on research into dietary patterns that promote weight loss; new *Take Charge* feature on techniques for being active during screen time

Chapter 10: Stress Management and Sleep

- New major section on sleep and its role in stress, including the biology of sleep, a new figure on the stages of sleep, sleep drivers, and features on overcoming insomnia and how digital devices affect sleep
- New Lab 10.3: Evaluating and Improving Sleep

- New *Diversity Matters* feature on diverse populations, discrimination, and stress; new *Take Charge* feature on mindfulness meditation

Chapter 11: Cardiovascular Health and Diabetes

- Expanded coverage of diabetes, including a new illustration of the underlying processes of normal and disrupted metabolism
- Updated statistics and information on cardiovascular disease (CVD) types, heart-healthy diet recommendations, and tobacco use and CVD, including e-cigarettes

Chapter 12: Cancer

- New illustration of the stages in the development and spread of cancer; new material on genetic changes that contribute to cancer risk and on treatment innovations
- Updated statistics on cancer cases and deaths, and updated recommendations on mammography and breast awareness and on HPV vaccination
- New Common Questions Answered section on the types of cancers most common in young adults

Chapter 13: Substance Use and Misuse

- New sections on how the American Psychiatric Association defines and identifies substance misuse and addiction; on opioids and drug overdose deaths; and on evaluating the severity of alcohol use disorder
- Expanded discussion of addictive behaviors, including Internet gaming disorder, and compulsive exercising
- Updated statistics and information on nonmedical drug use among Americans, medical marijuana, rates of binge drinking, and rates of tobacco use

Chapter 14: Sexually Transmitted Infections

- Updated statistics on major STIs, HIV/AIDS, HIV transmission, and use of condoms by college students
- Updated *Diversity Matters* feature on the global HIV/AIDS epidemic; updated *Critical Consumer* feature on HIV testing

Chapter 15: Environmental Health

- Updated statistics on world population growth, components of solid waste, and the hole in the ozone layer
- Updated information about the greenhouse effect and global warming, including the primary economic sectors responsible for emission of greenhouse gases
- New information on lead poisoning and the drinking water crisis in Flint, Michigan

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Greg Bullock, *William Carey University*



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INSTRUCTOR RESOURCES

Instructor resources available through Connect for *Fit & Well* include a course integrator guide, test bank, image bank, and PowerPoint presentations for each chapter.

Jamie L. Famiglietti, *Indiana University Bloomington*
Karen K. Dennis, *Illinois State University*
Phyllis Eckler, *Los Angeles City College*
Rick Canter, *Longwood University*
Ronnie Nespeca, *Lone Star College*
Shinya Takahashi, *University of Nebraska*
Shrehan Lynch, *University of Alabama*
Teresa Moore, *University of South Carolina*
Virginia Trummer, *University of Texas San Antonio*

1

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 and lifestyle problems in the United States today.
- Describe the behaviors that are part of a wellness lifestyle.
- Explain the steps in creating a behavior management plan.
- Evaluate some of the available sources of wellness information.

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 seem unrelated, 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** 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 to its fullest. Although we use the terms *health* and *wellness* interchangeably, they differ in two important ways:

Answers (Test Your Knowledge)

1. **b.** Smoking causes about 480,000 deaths per year. Obesity is responsible for as many as 400,000 premature deaths, and alcohol is a factor in 90,000 deaths per year.
2. **False.** Although the words are used interchangeably, they 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.

- 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, a man with a family history of prostate cancer will have a higher-than-average risk for developing prostate cancer.
- 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 reduce its effects and live a rich, meaningful life. This means not only caring for himself physically, but also maintaining a positive outlook, keeping up his relationships with others, challenging himself intellectually, and nurturing other aspects of his life.

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 exercising, eating a healthy diet, and choosing not to smoke are well within your control.

The Dimensions of Wellness

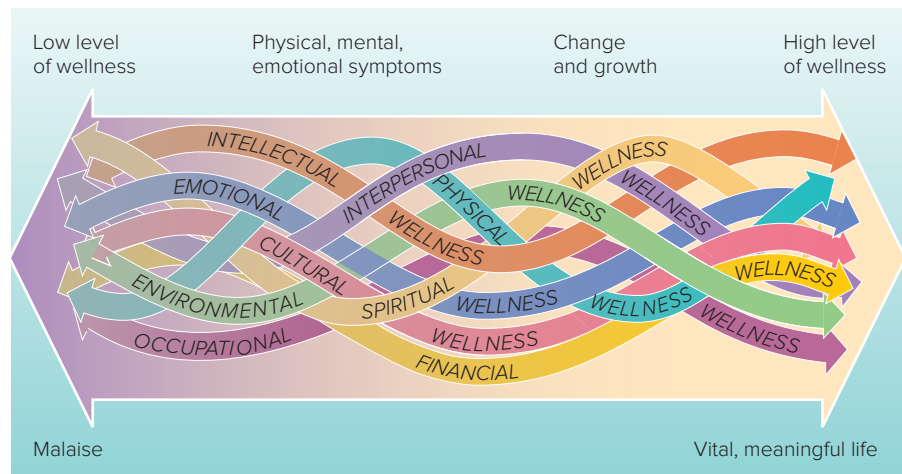
Here are nine dimensions of wellness:

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

Each dimension affects the others. Furthermore, 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. The following

FIGURE 1.1 The wellness continuum.

The concept of wellness includes vitality in nine interrelated dimensions, all of which contribute to overall wellness.



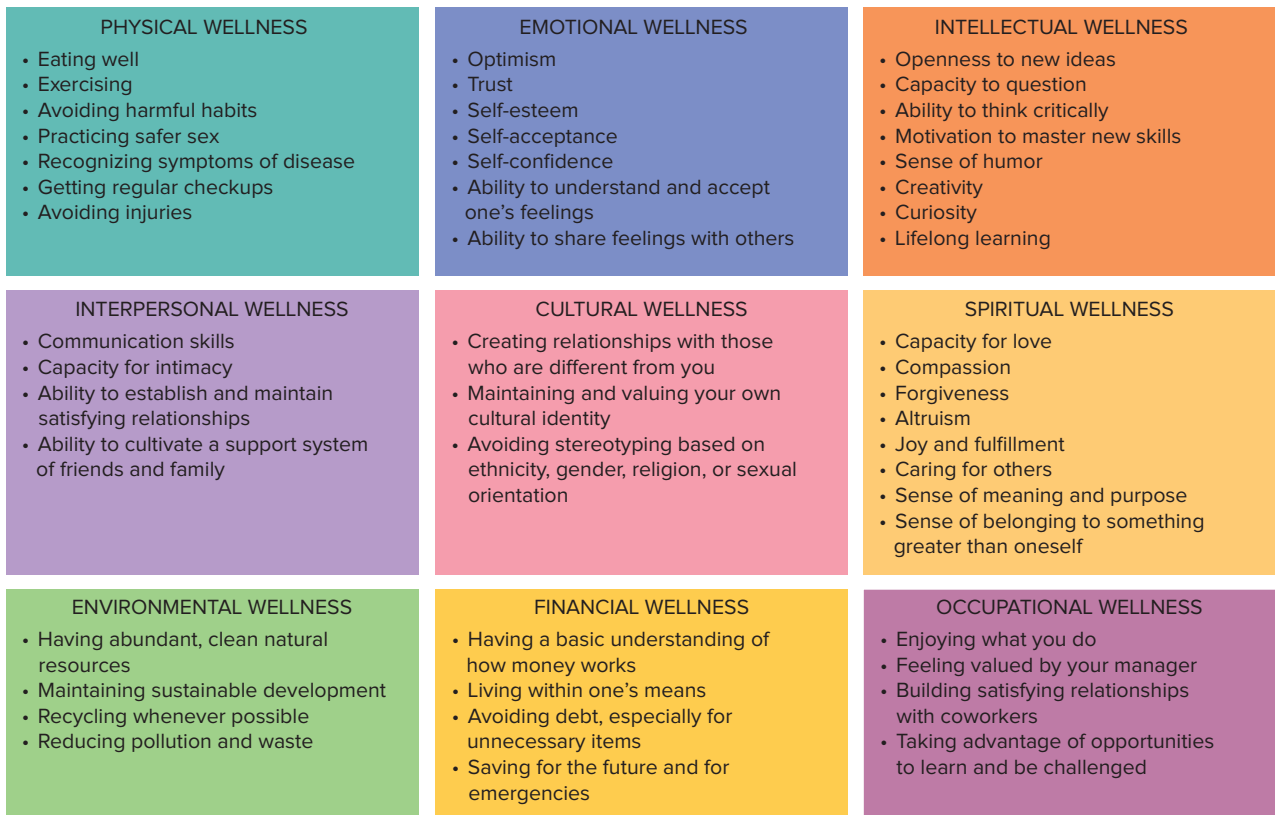


FIGURE 1.2 Qualities and behaviors associated with the dimensions of wellness.

sections briefly introduce the dimensions of wellness. Figure 1.2 lists 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 also your fitness level and your ability to care for yourself. The higher your fitness level, the higher your level of physical wellness will be. Similarly, as you take better care of 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.

Intellectual Wellness Those who enjoy intellectual wellness continually challenge their minds. An active mind is essential to wellness because it detects problems and finds solutions. People who enjoy intellectual wellness never stop learning. They seek out and relish new experiences and challenges.

Interpersonal Wellness Satisfying and supportive relationships are important to physical and emotional wellness. Learning good communication skills, developing the capacity for intimacy, and cultivating a supportive network are all important to interpersonal (or social) wellness. Social wellness requires participating in and contributing to your community and to society.

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

TERMS

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

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



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.

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Cultural Wellness Cultural wellness refers to the way you interact with others who are different from you in terms of ethnicity, religion, gender, sexual orientation, age, and customs (practices). It involves creating relationships with others and suspending judgment on others' behavior until you have lived with them or "walked in their shoes." It also includes accepting, valuing, and even celebrating the different cultural ways people interact in the world. The extent to which you maintain and value cultural identities is one measure of cultural wellness.

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

TERMS

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 well person uses spirituality to focus on positive aspects of life and to fend off 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. 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 related to money. For more on this topic, see the box "Financial Wellness".

Occupational Wellness Occupational wellness refers to the level of happiness and fulfillment you gain through your work. Although high salaries and prestigious titles are gratifying, they alone do not bring about occupational wellness. An occupationally well person likes his or her work, feels a connection with others in the workplace, and takes advantage of opportunities to learn and be challenged. Another important aspect of occupational wellness is recognition from managers and colleagues. An ideal job draws on your interests and passions, as well as your vocational skills, and allows you to feel that you are making a contribution.

New Opportunities for Taking Charge

One hundred and sixty-five years ago, Americans considered themselves lucky just to survive to adulthood. A boy born in 1850, for example, could expect to live only about 38 years, and a girl, 40 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).

By 2015, however, life expectancy nearly doubled, to 78.8 years (Figure 1.3). This increase in life span is due largely to the 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



Researchers surveyed nearly 90,000 college students about their financial behaviors and attitudes. According to results released in 2016, a large percentage of students feel less prepared to manage their money than to handle almost any other aspect of college life. They also express distress over their current and future financial decisions. Front and center in their minds is how to manage student loan debt. Financial wellness means having a healthy relationship with money. Here are strategies for establishing that relationship:

Follow a Budget

A budget is 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. Knowing where your money goes is the first step in gaining control of it.

Be Wary of Credit Cards

Students have easy access to credit but little training in finances. The percentage of students who have access to credit cards has increased from 28% in 2012 to 41% in 2015. This increase in credit card use has also correlated with an increase in paying credit card bills late, paying only the minimum amount, and having larger total outstanding credit balances.

Shifting away from using credit cards and toward using debit cards is a good strategy for staying out of debt. Familiarity with financial terminology helps as well. Basic financial literacy with using credit cards involves understanding terms like APR (annual percentage rate—the interest you're charged on your balance), credit limit (the maximum amount you can borrow), 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 amounts you'll be charged if you go over your credit limit or your payment is late).

Manage Your Debt and Get Politically Active

A 2016 study indicated that the average student loan debt was \$37,000—and this number is expected to rise. When it comes to student loans, having a personal plan for repayment can save time and money, reduce stress, and help you prepare for the future. However, only about 10% of students surveyed feel they have all the information needed to pay off their loans. Work with your lender and make sure you know how to access your balance, when to start repayment, how to make payments, what your repayment plan options are, and what to do if you have trouble making payments. Information on managing federal student loans is available from (<https://studentaid.ed.gov/sa/>).

Your student debt may reflect circumstances beyond your control. For example, financial aid programs may require

students to hold down jobs while also maintaining certain grade point averages. Consider contacting policymakers and asking them to pass measures to help students in need. One suggestion is for the Free Application for Federal Student Aid (FAFSA) to take into account how much debt a family or student already has when determining how much aid to grant.

Start Saving

If you start saving early, the same miracle of compound interest that locks you into years of credit card debt can work to your benefit (for an online compound interest calculator, visit <http://www.interestcalc.org>). 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

Most Americans have not received basic financial training. For this reason, the U.S. government has established the Financial Literacy and Education Commission (MyMoney.gov) to help Americans learn how to save, invest, and manage money better. Developing lifelong financial skills should begin in early adulthood, during the college years, if not earlier, as money-management experience appears to have a more direct effect on financial knowledge than does education. For example, when tested on their basic financial literacy, students who had checking accounts had higher scores than those who did not.



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SOURCES: Smith, C., & G. A. Barboza. 2013. *The role of trans-generational financial knowledge and self-reported financial literacy on borrowing practices and debt accumulation of college students*. Social Science Electronic Publishing, Inc. (<http://ssrn.com/abstract=2342168>); Plymouth State University. 2013. *Student Monetary Awareness and Responsibility Today!* Plymouth State University. (<http://www.plymouth.edu/office/financial-aid/smart/>); U.S. Financial Literacy and Education Commission, MyMoney.gov, 2013. (<http://www.mymoney.gov>); Mitchell, J., “Student Debt Is About to Set Another Record, But the Picture Isn't All Bad,” *Wall Street Journal*, May 2, 2016. (<https://blogs.wsj.com/economics/2016/05/02/student-debt-is-about-to-set-another-record-but-the-picture-isnt-all-bad/>); and EverFi, *Money Matters on Campus: Examining Financial Attitudes and Behaviors of Two-Year and Four-Year College Students*. www.moneymattersoncampus.org.

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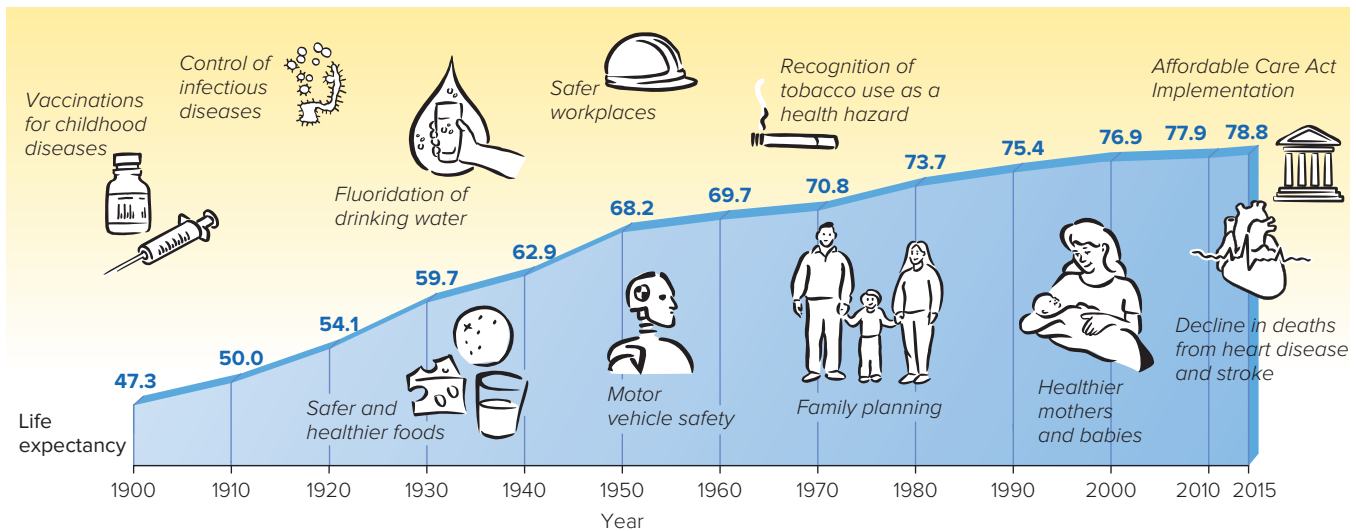


FIGURE 1.3 Public health and life expectancy of Americans from birth, 1900–2015. Public health achievements during the 20th century are credited with adding more than 25 years to life expectancy for Americans, greatly improving quality of life, and dramatically reducing deaths from infectious diseases. Public health improvements continue into the 21st century, including greater roadway safety, a steep decline in childhood lead poisoning, and an expansion of health insurance coverage.

SOURCES: Xu, J., et al. 2016. "Mortality in the United States, 2015," NCHS Data Brief, No. 267; Centers for Disease Control and Prevention. "Ten great public health achievements—United States, 2001–2010," *MMWR* 60(19): 619–623; Centers for Disease Control and Prevention 1999. "Ten great public health achievements—United States, 1900–1999," *MMWR* 48(50): 1141.

10–15% of their lives, resulting in some sort of impaired life (Figure 1.4).

Today, a different set of diseases has emerged as our major health threat: Heart disease, cancer, and chronic lower respiratory diseases are now the three leading causes of death for Americans (Table 1.1). While life expectancy has consistently increased each decade in the United States since 1850, the rate of improvement has slowed (and as of 2015 actually dropped for the first time in decades). A recent increase in deaths from heart disease, stroke, and diabetes may be linked to the obesity epidemic that began in the late 1970s. Medical treatments may be reaching their limits in treating heart disease and in preventing other early deaths related to obesity. Moreover, people are becoming obese at earlier ages, exposing them to the adverse effects of excess body fat over a longer period of time. Obesity and poor eating habits can lead to all the major **chronic diseases**.

The good news is that people have some control over whether they develop chronic diseases. Every day people can make choices that increase or decrease their risks. These

lifestyle choices include decisions regarding smoking, diet, exercise, sleep, and alcohol use. Table 1.2 shows the estimated number of annual deaths tied to selected underlying causes. For example, the estimated 90,000 deaths due to alcohol include deaths due directly to alcohol poisoning as well as alcohol-related deaths from liver cancer and accidents. As Table 1.2 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 aged 15–24, for example, the leading cause of death is unintentional injuries (accidents), with the greatest number of deaths linked to car crashes (Table 1.3).

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

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

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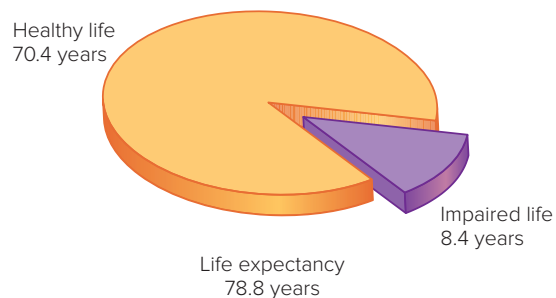


FIGURE 1.4 Quantity of life versus quality of life. Years of healthy life as a proportion of life expectancy in the U.S. population. **SOURCE:** National Center for Health Statistics, 2016. "Healthy People 2020," *Midcourse Review*, Hyattsville, MD.

Table 1.1 Leading Causes of Death in the United States, 2015

RANK	CAUSE OF DEATH	NUMBER OF DEATHS	PERCENTAGE OF TOTAL DEATHS	LIFESTYLE FACTORS
1	Heart disease	633,842	23.4	D I S A O
2	Cancer	595,930	22.0	D I S A O
3	Chronic lower respiratory diseases	155,041	5.7	D I S A O
4	Unintentional injuries (accidents)	146,571	5.4	I S A
5	Stroke	140,323	5.2	D I S A O
6	Alzheimer's disease	110,561	4.1	I S
7	Diabetes mellitus	79,535	2.9	D I S A O
8	Influenza and pneumonia	57,062	2.1	S A
9	Kidney disease	49,959	1.8	D S A O
10	Intentional self-harm (suicide)	44,193	1.6	A
	All causes	2,712,630	100.0	

Key

D	Diet plays a part	S	Smoking plays a part
I	Inactive lifestyle plays a part	A	Excessive alcohol use plays a part
		O	Obesity is a contributing factor

NOTE: Although not among the overall top 10 causes of death, HIV/AIDS (6,465 deaths in 2015) is a major killer. In 2015, HIV/AIDS was the 13th leading cause of death for Americans aged 15–24 years and the 9th leading cause of death for those aged 25–34 years.

SOURCE: Centers for Disease Control and Prevention. 2017. *10 Leading Causes of Death by Age Group, United States, 2015*. Web-based Injury Statistics Query and Reporting System (www.cdc.gov/injury/wisqars); Centers for Disease Control and Prevention. 2016. *Cause of Death 1999-2015 on CDC WONDER Online Database* (<http://wonder.cdc.gov/ucd-icd10.html>).

National Health

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.

A Plan for National Health Care Total health care expenditures in the United States are the highest in the world and growing; by 2016, they exceeded \$10,000 per person each year, including both out-of-pocket payments by individuals and costs paid by private and government health insurance. These costs are not distributed evenly across individuals, and people's healthcare costs may vary significantly from year to year. Health insurance helps people pay for routine preventive care and protects them financially in the event of a serious and expensive illness or injury. Many people obtain health insurance through an employer, while others qualify for government-sponsored programs, such as Medicare, which covers nearly all adults age 65 and older. Still, the United States over time has had a high number of people who lacked insurance, peaking at approximately 50 million (16% of the population) in 2010. People without insurance are less likely to receive preventive care or treatment for major health problems.

The 2010 Affordable Care Act (ACA), also called "Obamacare," aimed to both reduce the number of uninsured and control the rise in healthcare costs. It mandated that most people obtain health insurance or pay a federal penalty. It

provided financial assistance for people with low incomes by expanding Medicaid (a joint federal/state insurance program) and by providing tax credits and income-based subsidies for people who obtained insurance through newly established insurance exchanges. The ACA also broadened requirements for all health insurance plans, including those offered by employers; these provisions allowed young adults to stay on their parents' plans until age 26, eliminated annual and lifetime coverage limits, capped annual out-of-pocket payments, and provided protections for people with pre-existing conditions.

According to the National Center for Health Statistics, between 2010 and 2016, the overall number of Americans without insurance dropped by 20 million, down to 9% of the population, the lowest rate in decades. In 2016, among adults age 18-64 years, about 12% were uninsured (down from 22% in 2010), 20% were covered under a government-sponsored health plan, and 69% were covered by private insurance, including about 5% using an ACA insurance exchange. Defenders of the ACA argue that in addition to reducing the number of people without insurance, the act slowed the rise in health care costs and increased quality of care through changes in payment structures and delivery methods. Detractors of the law cite higher premiums and fewer insurance options as reasons to repeal and replace some or all of the law.

At this writing, major changes to the law have been proposed by Congress, and debate is ongoing about the costs and benefits of key ACA provisions. The ACA insurance requirements and expansion set new benchmarks for this debate over national health care policy.

VITAL STATISTICS

Table 1.2 Key Contributors to Death among Americans

	NUMBER OF DEATHS PER YEAR	PERCENTAGE OF TOTAL DEATHS PER YEAR
Tobacco	480,000	18.3
Diet/activity patterns (obesity)*	400,000	15.2
Alcohol consumption	90,000	3.4
Microbial agents**	80,000	3.0
Firearms	30,000	1.1
Illicit drug use***	25,000+	1.0
Motor vehicles	20,000	0.8
Sexual behavior****	15,000	0.6

*The number of deaths due to obesity is an area of ongoing controversy and research. Recent estimates have ranged from 112,000 to 400,000.

**Microbial agents include bacterial and viral infections, such as influenza, pneumonia, and hepatitis. Infections transmitted sexually are counted in the “sexual behavior” category, including a proportion of deaths related to hepatitis, which can be transmitted both sexually and nonsexually.

***Drug overdose deaths have increased rapidly in recent years, making it likely that this estimate will rise.

****Estimated deaths linked to sexual behavior include deaths from cervical cancer and sexually acquired HIV, hepatitis B, and hepatitis C.

SOURCES: Kochanek, K. D., et al. 2016. “Deaths: Final data for 2014,” *National Vital Statistics Reports* 65(4).; National Research Council, Institute of Medicine, *Measuring the Risks and Causes of Premature Death: Summary of Workshops*, 2015. Washington, DC: National Academies Press; Stahre, M., et al. 2014. “Contribution of excessive alcohol consumption to deaths and years of potential life lost in the United States,” *Preventing Chronic Disease: Research, Practice, and Policy* 11: 130293; U.S. Department of Health and Human Services. *The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention.

The Healthy People Initiative 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 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 taking more concrete steps to prevent diseases and injuries, 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

VITAL STATISTICS

Table 1.3 Leading Causes of Death among Americans Aged 15–24, 2015

RANK	CAUSE OF DEATH	NUMBER OF DEATHS	PERCENTAGE OF TOTAL DEATHS
1	Unintentional injuries		
	(accidents)	12,514	41.0
	Motor vehicle	6,787	22.3
	Poisoning*	3,920	12.9
	All other unintentional injuries	1,807	5.9
2	Suicide	5,491	18.0
3	Homicide	4,733	15.5
4	Cancer	1,469	4.8
5	Heart disease	997	3.3
	All causes	30,494	100.0

*Poisoning deaths in this age group are primarily due to drug and alcohol overdose.

SOURCE: Centers for Disease Control and Prevention. 2017. *10 Leading Causes of Death by Age Group, United States, 2015*. Web-based Injury Statistics Query and Reporting System (www.cdc.gov/injury/wisqars).

identifying, measuring, and addressing health differences between individuals or groups that result from 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 levels (such as anti-smoking campaigns by schools, workplaces, and local agencies), providing a broader array of educational and job opportunities for undereducated and poor Americans, 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.

Table 1.4 shows examples of individual health promotion goals from *Healthy People 2020*, as well as estimates of how well Americans are achieving those goals. To gain an idea of

DIVERSITY MATTERS

Wellness Issues for Diverse Populations



We all need to exercise, eat well, manage stress, and cultivate positive relationships. Protecting ourselves from disease and injuries is important, too. But some of our differences—both as individuals and as members of groups—have important implications for wellness. These differences 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. You share patterns of influences with others; and information about groups can be useful in identifying areas that may be of concern to you and your family. Wellness-related differences among groups can be described in terms of a number of characteristics, including the following:

Sex and Gender. Sex represents the biological and physiological characteristics that define men, women, and intersex people. In contrast, *gender* refers to how people identify themselves and also the roles, behaviors, activities, and attributes that a given society considers appropriate. A person's gender is rooted in biology and physiology, but it is shaped by experience and environment—how society responds to

individuals based on their sex. Examples of gender-related characteristics that affect wellness include the higher rates of smoking and drinking found among men and the lower earnings found among women compared with men doing similar work. Although men are more biologically likely than women to suffer from certain diseases (a sex issue), men are less likely to visit their physicians for regular exams (a gender issue). 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. Although the concept of race is complex, with the number of people who identify themselves as biracial or multiracial growing, it is still useful to identify and track health risks among population groups. Some diseases are concentrated in certain gene pools, the result of each racial or ethnic 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 and ethnic groups may vary in their

traditional diets; their family and interpersonal relationships; their attitudes toward tobacco, alcohol, and other drugs; and their health beliefs and practices.

Income and Education. Of all the variables, inequalities in income and education are the most highly correlated to health status. Income and education are closely related, and groups with the highest poverty rates and least education have the worst health status. These Americans have higher rates of infant mortality, traumatic injury, violent death, and many diseases. They are more likely to eat poorly, be overweight, smoke, drink, and use drugs. They are exposed to more day-to-day stressors and have less access to health care services.

Disability. People with disabilities have activity limitations or need assistance due to a physical or mental impairment. About one in five people in the United States has some level of disability, and the rate is rising, especially among younger segments of the population. People with disabilities are more likely to be inactive and overweight. They report more days of depression than people without disabilities. Many also lack access to health care services.

Box icon: © Rawpixel Ltd/Getty Images RF

Table 1.4 Progress toward *Healthy People 2020* Targets

OBJECTIVE	BASELINE (% MEETING GOAL IN 2008)	MOST RECENT PROGRESS (% MEETING GOAL IN 2014–15)	TARGET (% BY 2020)	PROGRESS TOWARD GOAL
Increase proportion of people with health insurance	83.2	89.4	100.0	○
Help adults with hypertension get blood pressure under control	43.7	50.3	61.2	+
Reduce proportion of obese adults	33.9	37.7	30.5	–
Reduce proportion of adults who drank excessively in past 30 days	27.1	27.0	24.4	○
Increase proportion of adults who meet federal guidelines for exercise	18.2	21.4	20.1	✓
Reduce proportion of adults who use cigarettes	20.6	15.3	12.0	+

Key

- ✓ Target met
- Insignificant progress
- +
- Significant progress Getting worse

SOURCE: U.S. Department of Health and Human Services. *Healthy People 2020* data search (<https://www.healthypeople.gov/2020/data-search/Search-the-Data>).