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Paul M. Insel / Walton T. Roth

CONNECT CORE CONCEPTS IN HEALTH

FOURTEENTH EDITION

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Note: The health issues and conditions listed above include those that disproportionately influence or affect women or men. For more information, see the Index under gender, women, men, and any of the special topics listed here.

DIVERSITY TOPICS RELATED TO ETHNICITY

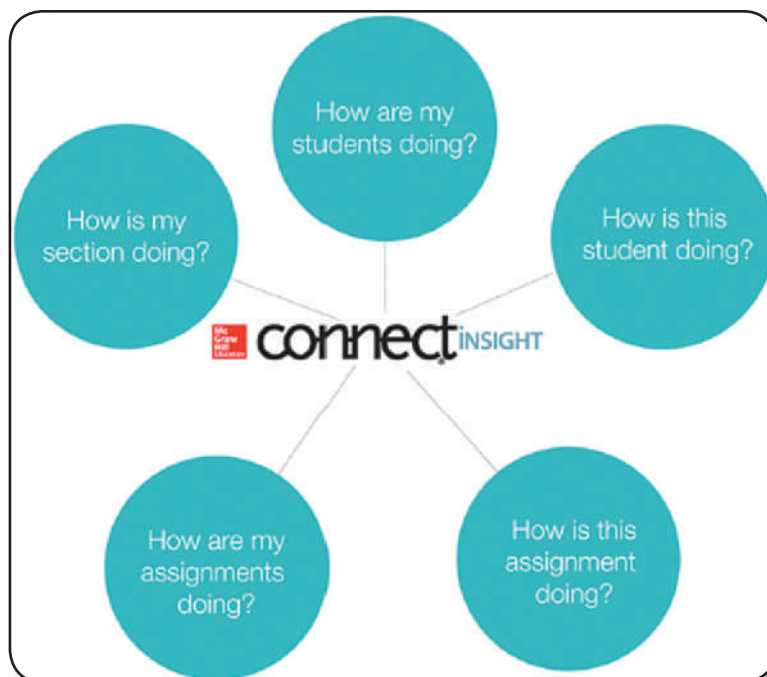
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Note: The health issues and conditions listed above include those that disproportionately influence or affect specific U.S. ethnic groups or for which patterns may appear along ethnic lines. For more information, see the Index under ethnicity, culture, names of specific population groups, and any of the topics listed here.

TEACHING AND LEARNING

Connect Core Concepts in Health is an integrated program designed to personalize the science of personal health and to motivate students to build critical thinking skills and behavior change skills for lifelong health. The new edition of *Connect Core Concepts in Health* combines the expert content and outstanding interactive tools you've come to expect with several exciting new digital resources:

New to Connect for Connect Core Concepts in Health is Connect Insight™, the first and only analytics tool of its kind. Connect Insight is a series of visual data displays—each framed by an intuitive question to provide at-a-glance information for instructors regarding how a class is doing. Instructors can easily view student performance matched with student activity, and the real-time analytics allow instructors to take action early to keep struggling students from falling behind. Instructors can leverage aggregated information about their courses and students to provide a more personalized teaching and learning experience.



WITH CONNECT CORE CONCEPTS IN HEALTH

SmartBook[®] is the first and only adaptive reading experience designed to change the way students read and learn. SmartBook creates a personalized reading experience by highlighting the most impactful concepts a student needs to learn at that moment in time. As a student engages with SmartBook, the reading experience continuously adapts by highlighting content based on what the student knows and doesn't know. Use SmartBook's real-time reports to quickly identify the concepts that require more attention from individual students—or the entire class. The end result? Students are more engaged with course content, can better prioritize their time, and come to class ready to participate.

The screenshot shows the SmartBook interface for a health article. The title is "New Opportunities for Taking Charge". The text discusses wellness, life expectancy, and morbidity/mortality rates. A "QUICK STATS" box highlights that "72% of American men are overweight." (NIH, 2011). The interface includes navigation buttons (PREVIEW, READ, PRACTICE, RECHARGE) and a search bar.

The screenshot shows the liveWell program interface. The title is "Notice Your Influence on Others". The text discusses social networks and the influence of others. A network diagram shows people connected by lines. The interface includes a "back" button and a "next" button.

liveWell[®], an innovative online multimedia program, is designed to help college students improve their exercise, eating, and stress management habits. liveWell, created by noted behavior change theorist Dr. James Prochaska, is a two-part, self-administered program consisting of (1) an online, personalized assessment of current health-related behaviors and readiness to make meaningful behavior change and (2) 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.

PERSONALIZED AND ADAPTIVE LEARNING

Connect Insight, *SmartBook*, and *liveWell* complement the existing digital and print instructional tools that make up the *Connect Core Concepts in Health* program. At the center of these tools is **Connect**, McGraw-Hill’s digital learning platform, featuring LearnSmart and SmartBook, McGraw-Hill’s adaptive learning technology.

LearnSmart is an adaptive study tool designed to strengthen memory recall, increase class retention, and boost grades. Students are able to study more efficiently because they are made aware of what they know and don’t know. Real-time reports quickly identify the concepts that require more attention from individual students—or the entire class. **SmartBook** applies adaptive technology to the reading experience, creating a personalized reading plan for each student, based on what that student knows and doesn’t know.

Through these adaptive technologies, McGraw-Hill Education authors now have access to student performance data to analyze and to inform their revisions. This data is anonymously collected from the many students who use LearnSmart. Because virtually every text paragraph is tied to several questions that students answer while using LearnSmart, the specific concepts with which students are having the most difficulty are easily pinpointed through empirical data in the form of a “heat map” report. This heat map was used to guide the editorial updates and revisions mentioned on p. xx.

Connect additionally offers a wealth of interactive online content, including fitness and wellness self-assessment worksheets, video activities on timely health topics such as tattooing and tanning beds, a fitness and nutrition journal, a behavior change workbook, and practice quizzes with immediate feedback. The media-rich e-book contains embedded video clips and full-color images and features note-taking and highlighting functionality.

Instructors have this to say about Connect and McGraw-Hill’s adaptive technology:

“ I use this textbook because of Connect. Connect is amazing. I am sure there are other textbooks that are just as good, but I do not switch because the support for Connect is excellent. The Wellness Worksheets and Internet Activities connect my students with the concepts that they are learning. The students email me at the end of the course and tell me how much they learned about themselves and tell me that they had enjoyed the class. ”

—Julie Little, *Virginia Highlands Community College*

“ Connect is wonderful! All of my co-workers and I have been very content with Connect and the great opportunities it provides for our students to learn, engage in the courses, and challenge themselves to perform at a high level. We have had very positive feedback with the program and have recently decided to update to the latest version in order to stay on top of the latest and greatest out there! ”

—Matthew Belles, *Central Piedmont Community College*

AUTHORITATIVE CONTENT

McGraw-Hill’s digital teaching and learning tools are built on the solid foundation of *Connect Core Concepts in Health*’s authoritative, science-based content. *Connect Core Concepts in Health* is written by experts who work and teach in the fields of exercise science, medicine, physical education, and health education. The *Connect content* provides accurate, reliable, current information on key health and wellness topics, while also addressing issues related to mind–body health, research, diversity, gender, and consumer health.

The streamlined pedagogical program for the 14th edition maintains important features on diversity, behavior change, and personal reflection, while integrating some key material into the body of the chapter. All features that appear with a Connect icon offer a linked Connect activity.

Ask Yourself (Questions for Critical Thinking and Reflection) encourage critical reflection on students’ own health-related behaviors.

Assess Yourself features provide rubrics and assessments for students to use in analyzing their own health and health-related behaviors.

Behavior Change Strategy sections offer specific behavior management/modification plans related to the chapter topic.

Connect to Your Choices sections challenge students to explore their inner motivations for their health choices and to explore ways of translating this awareness into action.

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

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

Quick Stats sections focus attention on particularly striking statistics related to the chapter content.

Take Charge boxes challenge students to take meaningful action toward personal improvement.

Tips for Today and the Future end each chapter with a quick, bulleted list of concrete actions readers can take now and in the near future.

Wellness on Campus sections focus on health issues, challenges, and opportunities that students are likely to encounter on a regular basis.

WHAT'S NEW IN CONNECT CORE CONCEPTS IN HEALTH, 14TH EDITION?

All chapters have been updated with the latest data and statistics. In addition, the following topics have been added or significantly revised in every chapter. Revision updates were informed by the heat map data available through LearnSmart. For more on the heat map, see p. xviii.

Chapter	New Coverage	Significant Updates/Revisions
1—Taking Charge of Your Health	<ul style="list-style-type: none"> Cultural wellness 	
2—Stress: The Constant Challenge		<ul style="list-style-type: none"> General adaptation syndrome (GAS) Personality and stress
3—Psychological Health	<ul style="list-style-type: none"> Attention-deficit/hyperactivity disorder (ADHD) Other psychotherapies: dialectical behavior therapy (DBT), acceptance and commitment therapy (ACT) 	<ul style="list-style-type: none"> Positive psychology Post-traumatic stress disorder (PTSD) Depression treatment Affordable Care Act and mental health care
4—Intimate Relationships and Communication	<ul style="list-style-type: none"> Gender and communication Sternberg's three dimensions of love Digital communication and our social networks Issues and trends in marriage 	<ul style="list-style-type: none"> Emotional intelligence Same-sex marriage and civil unions
5—Sex and Your Body		<ul style="list-style-type: none"> The human sex organs <i>Diversity Matters</i>: Genital Alteration Menopause Causes of sexual dysfunction Treatment of sexual dysfunction Gender-role flexibility Origins of sexual orientation
6—Contraception	<ul style="list-style-type: none"> Long-acting reversible contraception (types, advantages and disadvantages) 	<ul style="list-style-type: none"> Choices in contraceptive methods
7—Abortion		<ul style="list-style-type: none"> Definition Indicators (lifestyle, fetal, maternal) Complications Current legal status Public debate
8—Pregnancy and Childbirth		<ul style="list-style-type: none"> <i>Assess Yourself</i>: Creating a Family Health Tree Diagnoses of fetal abnormalities Complications of pregnancy and pregnancy loss Choices in childbirth Postpartum depression
9—Drug Misuse and Addiction	<ul style="list-style-type: none"> Prescription drug misuse 	<ul style="list-style-type: none"> <i>DSM-5</i>—updates to abuse and addiction Synthetic recreational drugs
10—Alcohol Misuse and Alcoholism	<ul style="list-style-type: none"> Alcohol use disorder 	
11—Tobacco Use	<ul style="list-style-type: none"> Tobacco use disorder Hookahs/hookah bars 	<ul style="list-style-type: none"> Who uses tobacco
12—Nutrition Basics	<ul style="list-style-type: none"> New research on saturated fats Global nutrition transitions 	<ul style="list-style-type: none"> Types of dietary fiber Dietary Guidelines for Americans
13—Exercise for Health and Fitness	<ul style="list-style-type: none"> Pros and cons of interval training Footwear: Barefoot or minimalist footwear Cross training to vary workouts 	<ul style="list-style-type: none"> <i>Take Charge</i>: Determining Your Target Heart Rate

Chapter	New Coverage	Significant Updates/Revisions
14—Weight Management	<ul style="list-style-type: none"> • Energy balance • Evaluation of body weight and body composition • Excess body fat and wellness • Problems associated with very low levels of body fat • Body image • Limits to changes to body weight and shape 	<ul style="list-style-type: none"> • Body composition • Body fat distribution • Heart disease and diabetes
15—Cardiovascular Health	<ul style="list-style-type: none"> • Gender and CVD • Cardiac rehabilitation for congestive heart failure 	<ul style="list-style-type: none"> • Blood cholesterol guidelines • Risk factors of CVD that <i>can</i> be changed
16—Cancer	<ul style="list-style-type: none"> • Head and neck cancers • Support during cancer therapy 	<ul style="list-style-type: none"> • The role of DNA in causing cancer • Dietary factors in causing cancer • Cancer treatment • Detection and treatment • Experimental techniques for cancer therapy
17—Immunity and Infection	<ul style="list-style-type: none"> • Efficacy and safety of vaccines 	<ul style="list-style-type: none"> • Immune system (the inflammatory response) • Types of vaccines • Differentiating between symptoms of cold and flu • Support of your immune system
18—Sexually Transmitted Infections		<ul style="list-style-type: none"> • Defining HIV infection • HIV around the world • HIV prevention • Prevention of STIs • HPV—understanding, prevention, treatment • Forms of viral hepatitis
19—Environmental Health	<ul style="list-style-type: none"> • <i>Critical Consumer</i>: Endocrine Disruption (A “New” Toxic Threat) 	<ul style="list-style-type: none"> • Population growth and control • Thinning of the ozone layer • Fracking, water quality and pollution
20—Conventional and Complementary Medicine	<ul style="list-style-type: none"> • Affordable Care Act of 2010 	<ul style="list-style-type: none"> • 2014 implementation of ACA • Integrative medicine and complementary alternative medicine (CAM) • Pharmaceuticals and the placebo effect • Providers of conventional medicine • Choice of a primary care physician • Health insurance
21—Personal Safety		<ul style="list-style-type: none"> • School violence • Family and intimate-partner violence
22—Aging: A Vital Process		<ul style="list-style-type: none"> • Alzheimer’s disease • Suicide among the elderly • <i>Diversity Matters</i>: Why Do Women Live Longer? • Long-term care for the elderly
23—Dying and Death		<ul style="list-style-type: none"> • Forms of death • Preparing for retirement • Grief associated with loss of a partner • Awareness of dying

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Taking Charge of Your Health



CHAPTER OBJECTIVES

- Describe the dimensions of wellness
- Identify major health problems in the United States today
- Describe the influence of gender, ethnicity, income, disability, family history, and environment on health
- Explain the importance of personal decision making and behavior change in achieving wellness
- List some available sources of health information and explain how to think critically about them
- Describe the steps in creating a behavior management plan to change a health-related behavior

TEST YOUR KNOWLEDGE

1. Which of the following lifestyle factors influence wellness?
 - a. managing your finances
 - b. cultivating a support group
 - c. exercising regularly
2. The terms *health* and *wellness* mean the same thing. True or False?
3. What is the leading cause of death for college-age students?
 - a. alcohol abuse
 - b. motor vehicle accidents
 - c. cancer
4. 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?

The next time you ask someone, “How are you?” and you get the automatic response “Fine,” be grateful. If that person had told you how he or she actually felt—physically, emotionally, mentally—you might wish you had never asked. Your friend might be one of the too many people who live most of their lives feeling no better than just all right, or so-so, or downright miserable. Some do not even know what optimal wellness is. How many people do you know who feel great most of the time? Do you?

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 the dimensions of well-being.

ANSWERS

1. **A, B, AND C.** All of these practices affect your sense of well-being.
2. **FALSE.** 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. **B.** Motor vehicle accidents are the leading cause of death for college-age students, whereas they are listed as the seventh cause of death in the general population.
4. **FALSE.** In many cases, behavior can counter the effects of heredity or environment. For example, diabetes may run in families, but this disease is also associated with controllable factors, such as being overweight and inactive.

WELLNESS: NEW HEALTH GOALS

Generations of people have viewed good 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 good health to include living a rich, meaningful, and energetic life. Beyond the simple presence or absence of disease, wellness can refer to optimal health and vitality—to living life to its fullest. Although we use the words *health* and *wellness* interchangeably, there are two important differences.

- Health—or some aspects of it—can be determined or influenced by factors beyond your control, such as your genes, age, and family history. Consider, for example, a 50-year-old man with a strong family history of early heart

disease. This factor increases this man’s risk of having a heart attack at an earlier age than might be expected.

- Wellness is determined largely by the decisions you make about how you live. That same 50-year-old man can reduce his risk of an early heart attack by eating sensibly, exercising, and having regular screening tests. Even if he develops heart disease, he may still live a long, rich, meaningful life. These factors suggest he should choose to not only care for himself physically but also maintain a positive outlook, enjoy his relationships with others, challenge himself intellectually, and nurture other aspects of his life.

Wellness, therefore, involves our making conscious decisions that affect **risk factors** that contribute to disease or injury. We cannot control risk factors such as age and family history, but we can control lifestyle behaviors.

Dimensions of Wellness

The process of achieving wellness is continuing and dynamic (Figure 1.1), involving change and growth. Wellness is not static. The encouraging aspect of wellness is that you can actively pursue it. Here are nine dimensions of wellness:

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

These dimensions are interrelated and may affect each other, as the following sections explain.

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, the higher your level of physical wellness. Similarly, as you develop the ability to take care of your own physical needs, you ensure greater physical wellness. The decisions you make now, and the habits you develop over your lifetime, will help determine the length and quality of your life.

Emotional Wellness Trust, self-confidence, optimism, satisfying relationships, and self-esteem are some of the qualities of emotional wellness. Emotional wellness is dynamic and involves the ups and downs of living. No one can achieve an emotional “high” all the time. Emotional wellness fluctuates with your intellectual, physical, spiritual, cultural, and interpersonal health. Maintaining emotional wellness requires exploring thoughts and feelings. *Self-acceptance* is your personal satisfaction with yourself—it 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 emotional wellness means finding solutions to emotional problems, with professional help if necessary.

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. Throughout their lifetimes people who enjoy intellectual wellness never stop learning. Often they discover new things about themselves.

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

risk factor A condition that increases your chances of disease or injury.

TERMS

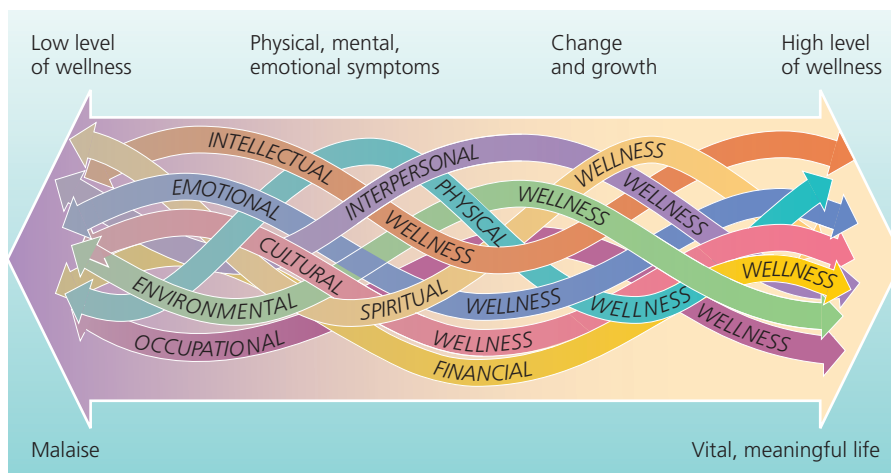


FIGURE 1.1 The wellness continuum. The concept of wellness includes vitality in a number of interrelated dimensions, all of which contribute to overall wellness.

TAKE CHARGE

Financial Wellness

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. For example, instead of the expense of cable TV, you can stream news and entertainment shows from the Internet through your television or Blu-ray player. Or you can view programs online on Hulu.com and movies on Netflix.com. If you spend money going out at night, 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: Students tend to be overconfident in their financial decisions and have easy access to credit but little training in finances. Students then may participate in enhanced lifestyles and may compete with peers to consume more. Thus, the government passed the Credit Card Accountability, Responsibility, and Disclosure Act of 2009 to require people age 21 and younger to have a guarantor co-sign their credit card applications to ensure they can make their payments. It was found that students who learn about finance from parents are more likely to pay off their credit card balance in full and regularly.

It is important to understand 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).

Get Out of Debt

A 2011 study indicated that graduating college students often had debts of \$25,250 and that this number would likely increase by several thousand dollars over the next several years. If you have credit card debt, stop using your cards and start paying them off. If you can't pay the whole balance, 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, paying off a credit card balance of \$2000 at 10% interest with monthly payments of \$20 would take 203 months—17 years. Check out an online credit card calculator like <http://money.cnn.com/calculator/pf/debt-free/>. Note that by carrying a balance and incurring finance charges, you are also paying back much more than your initial loan.

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

How well do you manage your money? Most Americans have not received any kind of basic financial training. For this reason, the U.S. government has established the Financial Literacy and Education Commission ([MyMoney.gov](http://www.mymoney.gov)) to help Americans learn how to save, invest, and manage money better, a skill called financial literacy. Developing lifelong financial skills should begin in early adulthood, during the college years, if not earlier.

SOURCES. Smith, C., and 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!* (<http://www.plymouth.edu/office/financial-aid/smart/>); U.S. Financial Literacy and Education Commission. 2013. *MyMoney.gov* (<http://www.mymoney.gov>).



important to interpersonal (or social) wellness. Social wellness requires participating in and contributing to your community and to society.

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.

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 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

**QUICK
STATS**

More than two-thirds of American adults are overweight.

—NIH, 2013

physical environment can support your wellness or diminish 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. See the "Financial Wellness" box.

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 may not bring about occupational wellness. An occupationally well person enjoys his or her work, feels a connection with others in the workplace, and takes advantage of the 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 in your everyday work.

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

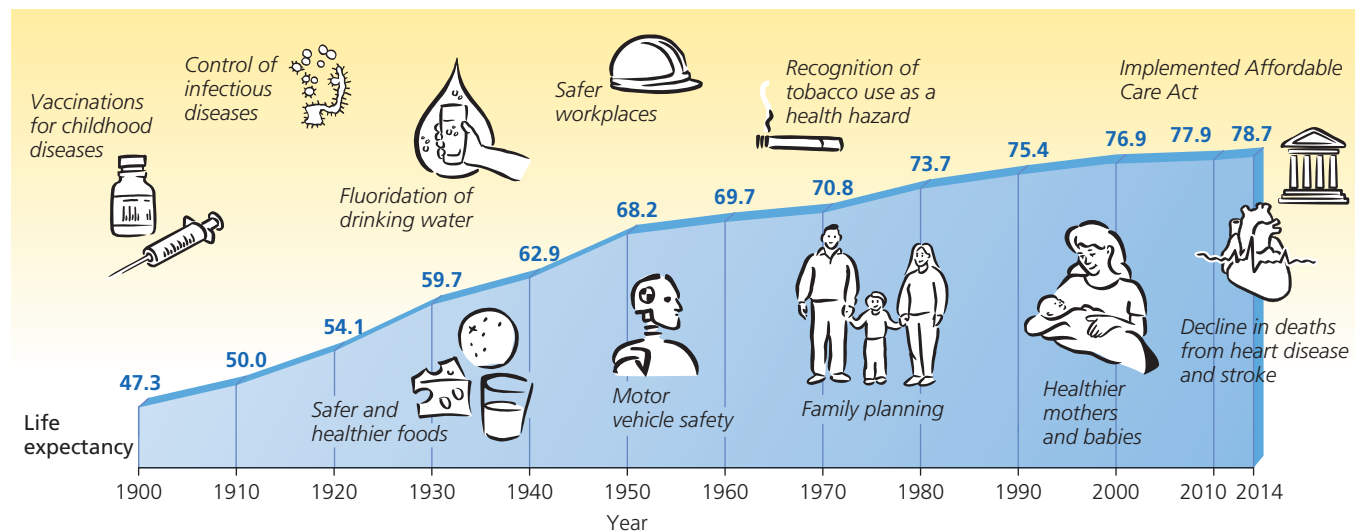


FIGURE 1.2 Public health achievements of the past century. From 1900 to 2000, public health achievements greatly improved Americans' quality of life and dramatically reduced the number of deaths from infectious diseases. In 2013, the government mandated that all Americans be covered by health insurance, a protection already long established in most other industrialized countries.

SOURCES: Hoyert, D. L., and J.Q. Xu. 2012. Deaths: Preliminary Data For 2011. *National Vital Statistics Reports* 61(6). Hyattsville, Md: National Center For Health Statistics; Centers For Disease Control and Prevention. Ten Great Public Health Achievements—United States, 1900–1999. *Morbidity and Mortality Weekly Report* 48(50): 1141; U.S. Department of Health and Human Services. 2012. *Healthcare.Gov: Take Health Care Into Your Own Hands* (<http://www.healthcare.gov>).

to live only about 47 years. **Morbidity** and **mortality rates** (rates of illness and death, respectively) from common **infectious diseases** (such as pneumonia, tuberculosis, and diarrhea) were much higher than Americans experience today.

Since 1900, **life expectancy** has nearly doubled, due largely to the development of vaccines and antibiotics to fight infections, and to public health measures such as water purification and sewage treatment to improve living conditions.

But even though life expectancy has increased, poor health will limit 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 health threat: Heart disease, cancer, and chronic lower respiratory diseases are now the three leading causes of death for Americans (Table 1.1). 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

morbidity rate The relative incidence of disease among a population. TERMS

mortality rate The number of deaths in a population in a given period of time; usually expressed as a ratio, such as 75 deaths per 1000 members of the population.

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

life expectancy The period of time a member of a given population is expected to live.

impaired life The period of a person's life when he or she may not be able to function fully due to disease or disability.

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

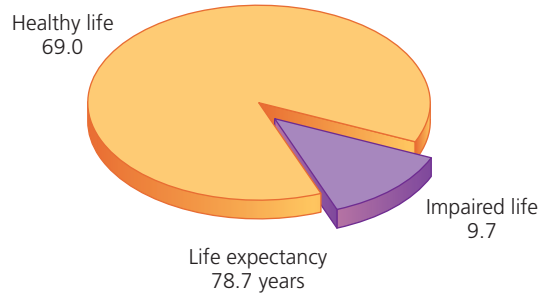


FIGURE 1.3 Quantity of life versus quality of life. Years of healthy life as a proportion of life expectancy in the U.S. population. **SOURCE:** National Center for Health Statistics. 2012. *Healthy People 2010 Final Review*. Hyattsville, MD.

VITAL STATISTICS

Table 1.1 Leading Causes of Death in the United States, 2011

RANK	CAUSE OF DEATH	NUMBER OF DEATHS	PERCENTAGE OF TOTAL DEATHS	LIFESTYLE FACTORS
1	Heart disease	596,339	23.7	D I S A
2	Cancer	575,313	22.9	D I S A
3	Chronic lower respiratory diseases	143,382	5.7	I S A
4	Stroke	129,180	5.2	D I S A
5	Unintentional injuries (accidents)	118,043	4.9	I S A
6	Alzheimer's disease	83,308	3.8	I S A
7	Diabetes mellitus	68,905	2.8	D I S A
8	Influenza and pneumonia	53,667	2.1	D I S A
9	Kidney disease	45,731	1.8	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	I S A
15	Lung inflammation due to solids and liquids	18,090	0.7	I S A
	All other causes	512,723		I S A
	All causes	2,512,873	100.0	I S A

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 (8,352 deaths in 2010) is a major killer. In 2011 HIV/AIDS was the 12th leading cause of death for Americans aged 15–24 years and the 8th leading cause of death for those aged 25–44 years.

SOURCE: Hoyert, D. L., and J. Q. Xu. 2012. Deaths: Preliminary data for 2011. *National Vital Statistics Reports* 61(6).

choices every day that increase or decrease their risks for such diseases. Each of us can take personal responsibility for **lifestyle choices** that include behaviors such as smoking, diet, exercise, and alcohol use. 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 ages 15–24, for example, the top three causes of death are unintentional injuries (accidents), suicide, and homicide (Table 1.3).

VITAL STATISTICS

Table 1.2

Lifestyle and Environmental Contributors to Death among Americans

	NUMBER OF DEATHS PER YEAR	PERCENTAGE OF TOTAL DEATHS PER YEAR
Tobacco	467,000	19.1
Obesity ^a	216,000	8.8
Alcohol consumption ^b	64,000	2.6
Toxic agents ^c	55,000	2.3
Microbial agents ^d	50,003	2.0
Illicit drug use	40,239	1.3
Motor vehicles	34,677	1.1
Firearms	30,867	0.9
Sexually transmitted infections	20,000	0.8

^aThe number of deaths related to obesity is an area of ongoing controversy and research. Recent estimates have ranged from 112,000 to 365,000.

^bThe number of deaths due to alcohol excludes those that indirectly resulted in fatal injury.

^cToxic agents include environmental pollutants and chemical agents such as asbestos.

^dMicrobial agents include bacterial and viral infections like influenza and pneumonia.

SOURCES: Danaei, G., et al. 2009. The preventable causes of death in the United States: comparative risk assessment of dietary, lifestyle, and metabolic risk factors. *PLoS Medicine* 6(4): e1000058; Centers for Disease Control and Prevention. 2008. Smoking-attributable mortality, years of potential life lost, and productivity losses—United States, 2000–2004. *Morbidity and Mortality Weekly Report* 57(45): 1226–1228; National Center for Health Statistics. 2012. Deaths: final data for 2009 (data release). *National Vital Statistics Report* 60(3); National Center for Health Statistics. 2012. Deaths: preliminary data for 2011 (data release). *National Vital Statistics Report* 61(6).

Promoting Health and Preventing Disease

People are a nation’s most important resource. A country’s creativity, vitality, and prosperity depend on the health of its people. Governments as well as communities find it in their long-term interests to promote health and prevent disease. The World Health Organization (WHO) defines **health promotion** as “the process of enabling people to increase control over their health and its determinants, and thereby improve their health.” The primary means of promoting health are public health policies and agencies that identify and discourage unhealthy and high-risk behaviors and that encourage and provide incentives for judicious health behaviors. Many college campuses have health promotion programs or activities.

In the United States, the National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDC) are federal agencies charged with promoting the public’s health. The NIH is the primary federal agency for conducting and supporting medical research. NIH scientists investigate ways to prevent disease as well as the causes, treatments, and cures for common and rare diseases. Composed of 27 institutes and centers, the NIH provides

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 healthful diet.

TERMS

health promotion The process of enabling people to increase control over their health and its determinants, and thereby improve their health.

VITAL STATISTICS

Table 1.3

Leading Causes of Death among Americans Ages 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

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

leadership and financial support to researchers in every state as well as around the world. The NIH translates research results into interventions and communicates research findings to patients, health care providers, and the public.

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 developed 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.
- Achieve health equity, eliminate disparities, and improve the health of all groups.
- Create social and physical environments that promote good health for all.
- Promote healthy development and healthy behaviors across every stage of life.

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, or economic status) and

When it comes to wellness, personal responsibility can make the difference.

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.

Examples of individual health promotion goals from *Healthy People 2020*, along with estimates of how well Americans are tracking toward achieving those goals, appear in Table 1.4.

Health Issues for Diverse Populations

Most health issues concern us all equally. We all need to eat well, exercise, manage stress, and cultivate satisfying personal relationships. We need to know how to protect ourselves from heart disease, cancer, sexually transmitted infections, and injuries. We need to know how to use the health care system.

But some of our differences, as individuals and as members of groups, have important implications for health. Some of us, for example, have a genetic predisposition for developing certain health problems, such as high cholesterol. Some of us have grown up eating foods that raise our risk of heart disease or obesity.

Some of us live in an environment that increases the chance that we will smoke cigarettes or abuse alcohol. These health-related differences among individuals and groups can be biological—that is, determined genetically—or cultural—acquired as patterns of behavior through daily interactions with our families, communities, and society. Many health conditions result from a combination of biology and culture.

Health-related differences among groups can be identified and described in the context of several different dimensions.

Table 1.4

Select *Healthy People 2020* Objectives

OBJECTIVE	BASELINE (% MEETING GOAL IN 2008)	MOST RECENT PROGRESS (% MEETING GOAL IN 2012)	TARGET (% BY 2020)	PROGRESS
Increase proportion of people with health insurance	83.2	83.1	100.0	○
Increase proportion of people with a primary care provider	76.3 (2007)	77.3 (2011)	83.9	○
Help adults with hypertension get blood pressure under control	43.7	48.9	61.2	+
Reduce proportion of obese adults	33.9	35.3	30.5	-
Reduce proportion of adults who drank excessively in past 30 days	27.1	27.1	24.4	○
Increase proportion of adults who exercise	18.2	20.6	20.1	✓
Reduce proportion of adults who use cigarettes	20.6	18.2	12.0	+
Increase daily intake of vegetables (age adjusted, cup equivalents per 1,000 calories)	0.8 (2001–2004)	0.8 (2007–2010)	1.1	○

Target met
 Improving
 Insignificant or no change
 Getting worse

SOURCE: *Healthy People 2020 Leading Health Indicators: Progress Update*, March 2014 (<http://www.healthypeople.gov/2020/LHI/LHI-ProgressReport-ExecSum.pdf>)

Those highlighted by the Healthy People initiative are sex and gender, ethnicity, income and education, disability, geographic location, and sexual orientation.

Sex and Gender Sex and gender profoundly influence wellness. The WHO defines **sex** as the biological and physiological characteristics that define men and women. These characteristics are related to chromosomes and their effects on reproductive organs and the functioning of the body. Menstruation in women and the presence of testicles in men are examples of sex-related characteristics.

Gender is defined as roles, behaviors, activities, and attributes that a given society considers appropriate for men and women. 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 higher rates of smoking and drinking among men and lower earnings among women (compared with men doing similar work).

Both sex and gender have important effects on wellness, but they can be difficult to separate. For example, in the early 20th century, more women began smoking with changes in culturally defined ideas about women's behavior (a gender issue). Because women are more vulnerable to the toxins in tobacco smoke (a sex issue), their cancer rates also increased.

QUICK STATS

One in three Americans reported that in 2013 they delayed seeking medical treatment due to the cost.

—Gallup poll 2013

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). As a result, 55% of American men have not seen their doctors for checkups in the past year, and 29% of men say they wait as long as possible before seeing a doctor—even when they are sick. About one in three American men don't have a regular health care provider, compared to about one in five American women.

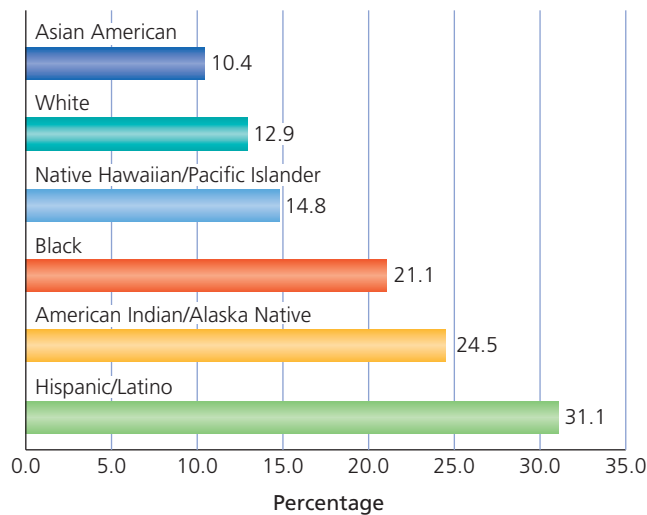
Ethnicity Compared with the U.S. population as a whole, American ethnic minorities have higher rates of death and disability from many causes (Figure 1.4). These disparities result from a complex mix of genetic variations, environmental factors, and health behaviors.

Some diseases are concentrated in certain gene pools, the result of each ethnic group's relatively distinct history. Sickle-cell disease is most common among people of African

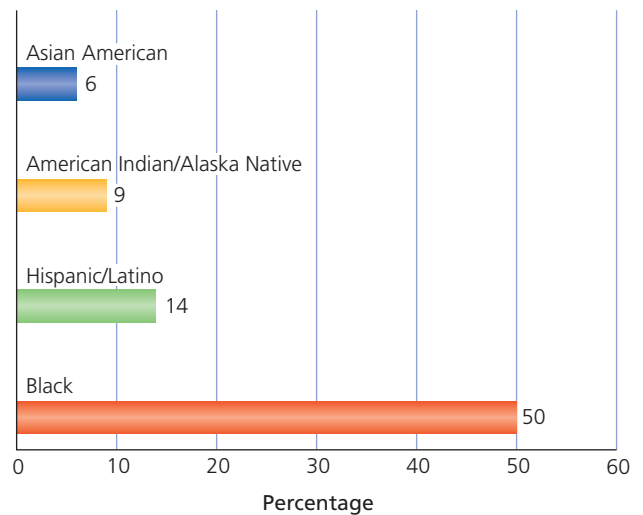
TERMS

sex The biological and physiological characteristics that define men and women.

gender The roles, behaviors, activities, and attributes that a given society considers appropriate for men and women.



(a) Americans self-reporting health status as fair or poor



(b) Ethnic groups receiving worse health care than white Americans, based on key core measures

FIGURE 1.4 Self-rated health status and quality of care. White Americans are less likely than most ethnic minorities to report their health status as being fair or poor. Meanwhile, significant percentages of minority groups receive lower-quality health care than white Americans, based on comparisons of key measures of treatment quality.

SOURCES: Centers for Disease Control and Prevention. 2008. Racial/ethnic disparities in self-rated health status among adults with and without disabilities—United States, 2004–2006. *Morbidity and Mortality Weekly Report* 57(39): 1069–1073; U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality. 2010. *2009 National Healthcare Disparities Report*. Rockville, MD: U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality, AHRQ Pub. No. 10-0003.