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7TH EDITION

YOUR HEALTH TODAY

Choices in a Changing Society

Your Health Today

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Seventh Edition

Your Health Today
Choices in a Changing Society

Seventh Edition

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Dear Readers,

The story of this book began almost 20 years ago when three friends—a health educator, a family physician, and a family therapist—had a conversation about their beliefs about teaching health. While our clinical and academic paths differed, we found that we shared a fundamental belief that, although the individual plays a role in the wellness process, society has a responsibility to promote the well-being of all individuals. Many personal health books at the time focused on personal responsibility for health. That is indeed a major part of health, but we wanted to emphasize a model where individuals make health decisions within the context of their relationships, cultures, communities, policies, and physical surroundings. What eventually came of that conversation was the decision to create a book that emphasizes putting personal health in context.

Since we started working on the first edition of what became *Your Health Today,* we have visited health educators across the country and learned from their many different approaches to teaching personal health. We have tried to incorporate a range of those strategies and resources into our revisions and our own personal health courses.

Like instructors who use our book, we too have been challenged through the years by the dynamic nature of health. The world is changing—interpersonally, financially, politically, and environmentally—so, what does that mean to personal health? How do students of the 21st century learn best, and where does their current understanding of personal health come from? What will be the health priorities of the future? What skills will today's students need 20 years from now to maintain a healthy lifestyle? Examining history and our own beliefs about those questions encouraged us to incorporate several health topics that are not traditionally covered (or covered only briefly) in other personal health books. As learners, we also believe that today's students generally do not need to memorize facts so much as learn how to access and assess health information, critically consider implications, and respond. In essence, our program fills the need for an approach to personal health that balances individual and cultural responsibility.

Our mission and passion for this endeavor has remained true years later. We continue to learn how to create small change in personal, professional, and community lives in an attempt to improve the health outcomes for all future generations. We hope that the seventh edition will challenge students to think of themselves as agents of change. Students can make personal changes in lifestyle behaviors that affect their own health, and they can also influence communities to make changes in response to social, political, and economic factors that affect the health of broader segments of the population.

Michael Teague
Sara Mackenzie
David Rosenthal

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things influence the
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Learn Without Limits

Your Health Today teaches personal health from a perspective of social responsibility. While each of us has a unique set of individual characteristics that shape our health, environmental factors have an impact on our well-being, too. *Your Health Today* incorporates the individual, interpersonal, and broader social factors that affect our health, acting as a guide for healthy living in college and beyond.

The student-focused features in the seventh edition of *Your Health Today* highlight current topics, illustrate concepts with new photos and graphs, and invite dialogue among personal health students. These features serve as entry points to classroom discussion, critical thought, and practical application of health concepts to students' lives. Many also have accompanying assignable online activities within Connect.

Connect is proven effective

McGraw-Hill Connect® is a digital teaching and learning environment that improves performance over a variety of critical outcomes; it is easy to use; and it is proven effective. Connect® empowers students by continually adapting to deliver precisely what they need, when they need it, and how they need it, so your class time is more engaging and effective. Connect for Personal Health offers a wealth of interactive online content, including health labs and self-assessments, video activities on timely health topics, and practice quizzes with immediate feedback.

New to this edition are assignable and assessable Concept Clips, which help students master key personal health concepts. Using colorful animation and easy-to-understand audio narration, Concept Clips provide step-by-step presentations to promote student comprehension. Topics include the stages of change model, diabetes types and metabolism, changes to the Nutrition Facts label, the cardiorespiratory system, and the stress response.
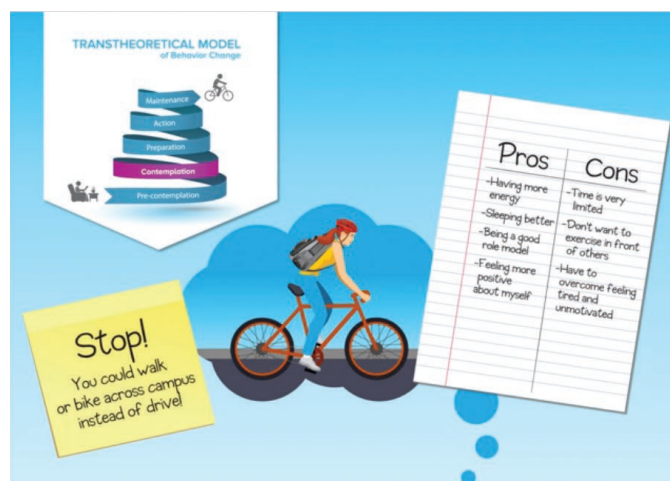
Also new are NewsFlash activities, which tie current news stories to key personal health concepts. After interacting with a contemporary news story, students are assessed on their understanding and their ability to make the connections between real-life events and course content. NewsFlash covers topics such as hands-only CPR, reducing sun damage, and vaccination rates.

Personalized Learning

SMARTBOOK™

Available within Connect, **SmartBook**® makes study time as productive and efficient as possible by identifying and closing knowledge gaps. SmartBook identifies what an individual student knows and doesn't know based on the student's confidence level, responses to questions, and other factors. SmartBook builds an optimal, personalized learning path for each student, so students spend less time on concepts they already understand and more time on those they don't. As a student engages with SmartBook, the reading experience continuously adapts by highlighting the most impactful content a student needs to learn at that moment in time. This ensures that every minute spent with SmartBook is returned to the student as the most value-added minute possible. The result? More confidence, better grades, and greater success.

New to this edition, SmartBook is now optimized for phones and tablets and accessible for students with disabilities using interactive features.

Advanced Reporting

connect INSIGHT™

Connect Insight® is Connect's one-of-a-kind visual analytics dashboard—available for both instructors and students—that provides at-a-glance information regarding student performance, which is immediately actionable. By presenting assignment, assessment, and topical performance results together with a time metric that is easily visible for aggregate or individual results, Connect Insight gives the user the capability to take a just-in-time approach to teaching and learning, which was never before available. Connect Insight presents data that empowers students and helps instructors improve class performance in a way that is efficient and effective.
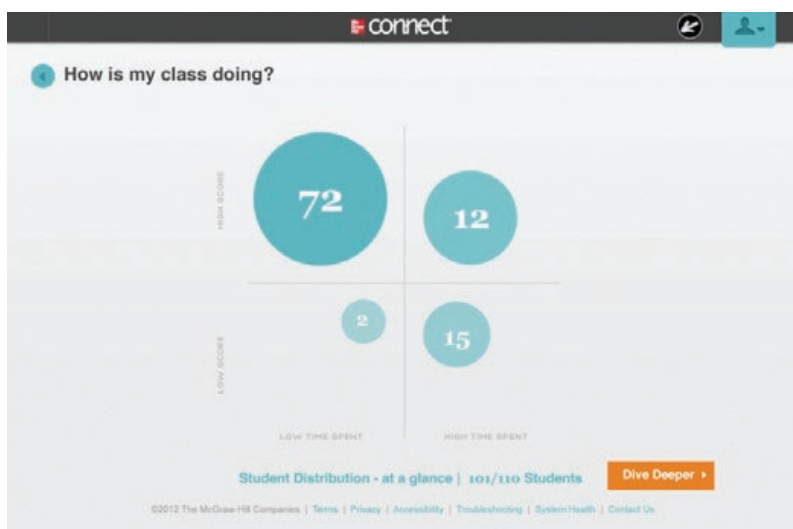
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Dietary Analysis Tool

NutritionCalc Plus is a suite of powerful dietary self-assessment tools that help students track their food intake and activity and analyze their diet and health goals. Students and instructors can trust the reliability of the ESHA database while interacting with a robust selection of reports. This tool is provided at no additional charge inside Connect for *Your Health Today,* seventh edition.

Features of *Your Health Today*

Action Skill-Builders present manageable first steps in making meaningful behavior changes and show that a small change can make a big difference. Topics include moving toward healthier eating, getting a better night's sleep, overcoming barriers to physical activity, and discussing contraception.

Consumer Clipboards show students how to weigh information, evaluate product claims, and make savvy health-related choices in a world full of misinformation and gimmicks. Topics include getting the most out of menu labeling, evaluating online health information, and selecting a pair of running shoes.

Public Health Is Personal boxes highlight broader community factors that influence personal health. They ask students to consider how systemic factors and policies that might seem remote—free early childhood education, community-sponsored needle-exchange programs, or community walkability—can have a profound impact on individual health choices and priorities.

Who's at Risk? boxes highlight data that show inequities in health outcomes and trends among diverse groups of people: for example, causes of death by geographic region and race, drinking problems by gender, or illicit drug use by geographic region. Featuring graphs and visuals, these boxes invite students to consider and critically discuss systemic reasons for these trends.

Life Stories boxes feature lively and relatable stories that personalize chapter concepts and show how topics play out in real life. Among the topics covered are online genetic testing, unintended pregnancy, culture and eating habits, and sexual assault.

Starting the Conversation boxes are designed to invite meaningful classroom discussion. Each box poses a question, presents information to inform the discussion, and ends with two critical thinking questions. Topics in the seventh edition include the role of voting in affecting public policy, the reason asthma rates are rising, and proposals to lower the legal limit for driving under the influence.

You Make the Call features present the facts behind a contentious social issue, followed by the pros and cons of two opposing positions. Topics include health insurance access, marijuana legalization, vaccination requirements for college students, mandatory calorie counts on menus, and digital connectivity.

A **Personal Health Portfolio** activity accompanies each chapter and can be completed on paper or online. Each includes a self-assessment or journaling activity and self-reflection questions. Students explore their personal health strengths and challenges and reflect on how friends, family, culture, community, and policy influence their personal health decisions. Activities include developing a family health tree; monitoring sleep, food, and activity levels; and assessing personal levels of stress.

Chapter-by-Chapter Changes—Informed by Student Data

Changes to the seventh edition include new research findings, updated statistics, and current hot topics that affect students' health choices and challenges. We have used inclusive language whenever possible. New pictures were added to chapters for relevance. Personal Health Portfolios were updated as necessary and moved from appendices to the end of chapters for convenient student access. Revisions to the seventh edition were also guided by student performance data collected anonymously from the thousands of students who have used Smartbook with *Your Health Today.* Because virtually every text paragraph is tied to several questions that students answer while using Smartbook, the specific concepts with which students are having the most difficulty can be pinpointed through this empirical data.

Chapter 1: Self, Family, and Community
- Reorganized discussion of health equities and socioecological model. Heredity and creating a family health tree is now the last section of the chapter.
- Updated discussion of health equity, with international comparison.
- New figure clarifying the stages of change.

Chapter 2: Mental Health and Stress
- Expanded discussion of the developing adolescent brain.
- New discussion of neurodevelopmental disorders, such as ADHD and the autism spectrum.
- Updated and expanded discussion of PTSD.
- Updated citations and relevant demographic statistics.
- Modified resilience scale.

Chapter 3: Social Connections
- Updated discussion of gay and lesbian partnerships to reflect the Supreme Court decision legalizing gay marriage.
- Updated "Who's at Risk?" box that looks at divorce rates not only by ethnicity, but also by gender and education.
- New "Starting the Conversation" box that addresses voting as a way to influence public policy.
- New "You Make the Call" box.

Chapter 4: Sleep
- New "Public Health Is Personal" box on whether accidents resulting in fatalities or serious injuries caused by sleep deprivation should be viewed as criminal acts in the judicial system.
- Revised "Action Skill-Builders" box that looks more deeply at how blue light from electronics disrupts sleep and how to prevent this disruption with blue-light filters.
- Expanded section on pain and sleep.
- New section on how unfamiliar environments—for example, a hotel room—interfere with good-quality sleep, and a new "Life Stories" box on this topic.

Chapter 5: Nutrition
- Beverage nutrient ratings from the Beverage Guidance Panel added to the chapter's "Types of Nutrients" section.
- Discussion of the paradox of cooking meat too rare or too well to avoid food pathogens or cancer.
- Discussion of the cafeteria traffic-light system used by many colleges and universities to help students make healthy food choices.
- Coverage of the USDA's new label mandates that help consumers to understand food expiration dates.
- Inclusion of the caramel food color (4-Mels) used in diet soda as a possible carcinogen.
- Addition of the health concerns of people who are gluten sensitive and adopt gluten diets but do not have celiac disease.
- New section on food insecurity on college campuses.
- New "Public Health Is Personal" box on hunger on campus.

Chapter 6: Fitness
- Added section on neuromuscular fitness (functional fitness).
- New discussion of exercising in dirty air.
- New "Public Health Is Personal" box, on active lifestyles and built environments, discussing how communities are being designed to facilitate physical activity.
- A new planning framework that facilitates active lifestyles, the Ecological Model for Designing Active Communities.

Chapter 7: Body Weight and Body Composition
- Updated and expanded discussion of the multifactorial effect of genes on BMI and obesity.
- Revised approach to types of diets that emphasizes critical thinking about their characteristics and individual dieting goals.
- Increased emphasis on a holistic approach to body composition and health.
- New "Public Health Is Personal" box about walkable communities.

Chapter 8: Body Image
- New focus on positive body image development and resiliency.
- Increased inclusion of gender identity and sexual identity formation.
- Updates on media role, incorporating social media and media literacy.
- Updated data on and discussion of body art and cosmetic surgery.

Chapter 9: Alcohol and Tobacco
- New "Who's at Risk?" box, on heavy drinkers at risk for alcohol-related diseases, with risks according to diversity classification.
- Discussion of Wernicke-Korsakoff as a "wet brain" disease.
- New "Starting the Conversation" box about whether to lower the blood alcohol limit for driving under the influence.
- New section on what happens to the body after someone stops drinking alcohol.
- New section on how states are cracking down on fake IDs used for underage alcohol consumption.
- Updated information about FDA efforts to regulate tobacco, particularly e-cigarettes.

Chapter 10: Drugs
- Updated table of "Commonly Abused Drugs."
- Addition of synthetic cannabinoids to "Emerging Drugs of Abuse."
- Updated discussion of marijuana legalization.
- Modified discussion of sources of pain relievers.
- Expanded section on opiate addiction and overdose.

Chapter 11: Sexual Health
- Discussion of "stealthing" during intercourse as a potentially criminal act, and a new "Life Stories" box on this topic.
- A new "Public Health Is Personal" box on framing sex trafficking as a public health issue.
- A new section on the future of sex, addressing virtual reality, teledildonics, augmented reality, affective technology, and sex robots.
- A new figure, "The Future of Sex."

Chapter 12: Reproductive Choices
- Reordering of presentation of contraceptives to emphasize long-acting reversible contraceptives.
- Addition of LARCs to the "Starting the Conversation" box.
- More inclusive language and data on sexual-minority and gender-minority reproductive health.

Chapter 13: Infectious Diseases
- Updated discussion of food-related pathogens, including the 2017 SoyNut Butter–related *E. coli* outbreak.
- Updated "Starting the Conversation" box about the Zika virus and the risk for pregnant women.
- Updated figure about the adult immunization schedule.
- Updated and expanded discussion of antibiotic resistance in both the chapter and in the "Public Health Is Personal" box introducing the One Health model.
- Updated statistics and focus on prevention of HIV, including new sections on treatment as prevention (TasP), post-exposure prophylaxis (PEP), and pre-exposure prophylaxis (PrEP).

Chapter 14: Cardiovascular Disease, Diabetes, and Chronic Lung Diseases
- Updated discussion of aspirin therapy in the "Consumer Clipboard" box.
- "Promoting Cardiovascular Health" reorganized to focus on the Life's Simple 7, behaviors and factors that promote cardiovascular health.
- Updated data on and impact of chronic diseases.
- Expanded discussion of rising asthma rates and contributing factors.

Chapter 15: Cancer
- Updated cancer diagnosis and death data.
- New discussion of disparities in access to cancer screening by education, sexual identity, insurance status, and immigration status.

Chapter 16: Injury and Violence
- In-depth discussion of campus speech and conduct codes to confront hate speech.
- New "You Make the Call" box on free speech on campus.
- New "Starting the Conversation" box on why colleges and universities are soft targets for terrorism.
- A new "Public Health Is Personal" box on college grievance procedures for sexual violence cases.
- New coverage of infotainment systems causing distracted driving, safety of recreational drones, campus security uses of drones for safety, LED light strips for accident prevention, textalyzer used by law enforcement to crack down on texting while driving, Vision Zero campaign for bicycle safety, coercive control as a form of intimate partner violence, historical efforts by black colleges to respond to campus sexual assaults, safety apps, and concealed guns marketed to women.
- New Personal Health Portfolio activity focuses on violence prevention and personal safety.

connect **Chapter 17:** Complementary and Integrative Medicine

- Revisions throughout to reflect the National Center for Complementary and Alternative Medicine's name change to the National Center for Complementary and Integrative Health.

- Reorganization so that two aspects of complementary medicine—natural products and mind and body practices—are followed by the discussion of alternative medical systems

connect **Chapter 18:** Environmental Issues

- A new "Public Health Is Personal" box on whether the United States should pull out of the Paris Agreement.

- New sections on ocean acidification and coral reefs.

- A more in-depth discussions of smart growth.

- An updated Personal Health Portfolio activity with more personal assessment instruments on carbon, water, and lifestyle footprint.

- Discussion of the health hazards of PBDEs as a source of indoor pollution.

- Discussion of lead exposure in Flint, Michigan, as an example of health problems from lead in public water systems.

- Discussion of PFASs in water.

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Instructor Resources

Instructor resources available through Connect for Personal Health include a Test Bank, Image Bank, and PowerPoint presentations for each chapter. All test questions are available within TestGen™ software. PowerPoint presentations now contain improved accessibility.

Acknowledgments

Self, Family, and Community

Ever Wonder...

- why it's so hard to break a bad habit?
- how much your parents' health predicts your own?
- how your neighborhood influences your health?

As individuals, we are all responsible for our own health. Each of us makes choices about how we live—about whether to be physically active, whether to eat a healthy diet, whether to get enough sleep, and whether to see a doctor. And yet to talk about health only as a matter of individual choice assumes that we are always aware of the choices we are making and that we are always "free" to make them. The truth is that there are differences in the way we live and the contexts in which we make decisions.

In this book, we explore personal health within the context of our social, cultural, and physical environment. We recognize that individuals are ultimately responsible for their own health, but we also know that people make healthier choices when the environment in which they live, learn, work, and play supports those choices. Our goal is to challenge and empower individuals to enact personal and collective change to improve their health and the health of their communities.

YOUR HEALTH IN CONTEXT

To begin, we consider the difference between the terms *health* and *wellness,* and then we explore the personal and environmental factors that shape and influence our personal health.

Health and Wellness

health
A state of complete physical, mental, social, and spiritual well-being.

wellness
A process of adopting patterns of behavior that can lead to improved health and heightened life satisfaction; wellness has several domains and can be conceptualized as a continuum.

Traditionally, people were considered "healthy" if they did not have symptoms of disease. In 1947, the World Health Organization (WHO) broke new ground with its positive definition of **health** as a state of complete physical, mental, and social well-being, not merely the absence of disease and infirmity. *Physical health* refers to the biological integrity of the individual. *Mental health* includes emotional and intellectual capabilities, or the individual's subjective sense of well-being. *Social health* means the ability of the individual to interact effectively with other people and the social environment.[1]

More recently, a *spiritual domain* has been added to the WHO definition, reflecting the idea that people's value systems or beliefs have an impact on their overall health. Spiritual health does not require participation in a particular organized religion but suggests a belief in (or a search for) some type of greater or higher power that gives meaning and purpose to life. Spiritual health involves a connectedness to self, to significant others, and to the community.

Wellness is a slightly different concept from health. It is generally defined as an active process of adopting patterns of behavior that can lead to improved health and heightened life satisfaction. Like health, wellness encompasses multiple dimensions (note that wellness includes more dimensions than health does):

- Physical
- Emotional
- Intellectual
- Spiritual
- Interpersonal or social
- Environmental
- Occupational

Wellness may also be conceptualized as a continuum. At one end is extreme illness and premature death; at the other is wellness and optimal health (see Figure 1.1). Historically, Western medicine has focused on the illness side of the continuum, treating people with symptoms of disease. Other approaches focus on the wellness side of the continuum, seeking to understand root causes of health to help people live their lives fully, with vitality and meaning. For example, in the approach called *salutogenesis,* individuals (or communities) are encouraged to assess their current situation, culture, life stress, and assets in order to find reasons to move in a direction that promotes health and then develop the capacity to do it.[2]

How do you know whether you are healthy? Does your body physically do what you want it to do? Can you actively participate in daily life? Are your physical needs for food and shelter met? Do you awake feeling rested? Mentally sharp?

Premature death — Terminal illness — Chronic disease — Minor illness — Physical, mental, social, and spiritual health — Sense of vitality — Wellness

figure 1.1   **The wellness continuum.**
Source: Adapted from O'Donnell, M.P. (1986). Definition of health promotion. *American Journal of Health Promotion, 1*(5).

not only on your personal health decisions, but also on the context in which you live your life. Your environment can promote or deter your capacity for good health.

What Determines Health?

Because this is a personal health book, our focus will be on your personal behavior. However, it is impossible to ignore the fact that individual behavior occurs in a context—we do not all have equitable access to social, economic, environmental, and structural conditions that promote or support our health and well-being. As shown in Figure 1.2, the **socioecological model of health and wellness** identifies the complex levels and interrelationships that influence your health. We can use it not only to understand differences in health outcomes between people but also as a framework to consider how to take action to improve health outcomes.

socioecological model of health and wellness
A framework that recognizes the inter-relationship between individuals and their environment; emphasizes that where we live, work, and play strongly influences our health.

You are situated in the center as an individual. Your unique set of characteristics—genetics, age, sex, gender, sexual identity, economics, race, and ethnicity—along with your knowledge, beliefs, values, and skills frame the way you experience the world and guide the decisions you make about how to live your life. But you do not live in isolation—you live within

■ Qualities associated with wellness include self-confidence, optimism, a sense of humor, an active mind, vitality, and joy in life. *(©Stockbyte/Getty Images)*

Calm and peaceful? Do you have a network of supportive family, friends, and colleagues? Are you active in your community? Does your life have meaning and purpose? These questions can help guide your sense of personal health and well-being and suggest areas of focus. The answers depend

figure 1.2   **The socioecological model of health and wellness.**
Our health is shaped both by our unique set of individual characteristics and by the context in which we live. *(©BJI/Blue Jean Images/Getty Images)*
Source: Rudolph, L., Caplan, J., Ben-Moshe, K., & Dillon, L. (2013). *Health in all policies: A guide for state and local governments.* Washington, DC and Oakland, CA: American Public Health Association and Public Health Institute.

social and physical environments. These environments include your relationships with other people, community resources, the physical and built environment, and the public policies that affect each. These complex environments can either create opportunities for you to achieve your full health potential or limit your ability to do so. Our communities create a context with norms, values, opportunities, and sanctions.

According to the socioecological model, friends, family, community norms, economic, social and public policy, and even global events, such as climate change, affect your health opportunities. In addition, society's practices shape your environment in ways that increase or decrease your opportunities for making health or unhealthy choices. For example, if your neighborhood has sidewalks and safe parks, you are more likely to get out and walk. If affordable housing is located near good schools, you are more likely to receive a better education, which prepares you for a better job. The complex external factors that influence an individual's and a population's health are known as the **social determinants of health**. This term highlights that the conditions in which you are born, grow, live, work, and age influence the options you have and the choices you make. Social determinants include income, economic status, educational attainment, literacy, employment status, working conditions, housing, transportation, social support networks, and access to health care services.[3,4,5]

Environmental factors that influence your health can be divided into built and natural factors. The *built* physical environment—such as kinds of housing, streets, schools, and sanitation and transportation systems—and factors in the *natural* physical environment—such as air and water quality, proximity to environmental hazards, and access to parks and natural settings—all affect your health.

How does the socioecological model play out in your life? As an example, let's say you decide you want to have a healthier diet. According to the socioecological model, what influences your ability to achieve this goal? First, consider your knowledge, attitudes, and skills—knowledge about what constitutes a healthy diet, attitudes toward different foods and diets, and skills at preparing and cooking. In addition, depending on your genetic predisposition, age, and health conditions, you may need to pay extra attention to certain components of your diet, such as salt or sugars if you have high blood pressure or diabetes.

Next, consider how your family, friends, coworkers, and peers influence your eating patterns. As you were growing up, you became familiar with the foods your family ate. In turn,

social determinants of health
Societal conditions that affect health and can potentially be altered by social and health policies and programs.

demographics
The statistical characteristics of a population in terms of such categories as age, gender, ethnicity and race, income, disability, geographical location, and migration patterns.

population health
The health outcomes of a group of individuals, including the distribution of those outcomes within the group.

your family's food preferences were influenced by their cultural background and geographical location. You may still prefer those foods. Your friends may like to eat out at fast-food restaurants, and you may go with them. Or your friends may be vegetarian, so you find yourself eating more vegetarian foods. If your friends are overweight or if they gain weight, it's likely that you will find weight gain more acceptable for yourself.[6,7]

Your decisions about what to eat also take place in the context of where you live, work, learn, and play. Your dining hall may have unlimited soda refills and fried foods, or your church may serve donuts after services. In your community, you may have opportunities to buy local fresh fruits and vegetables, or the corner store may have only candy and liquor. Your income can also significantly affect your diet because fast foods and packaged and processed foods are less expensive than fresh fruits, vegetables, meats, and nuts. Finally, local, state, and national laws influence the safety of the food you eat, its nutritional labeling, and its cost. When all these factors are taken into account, it is clear that a healthy diet is not just a matter of your individual choices—though the choices you make within the context of your environment are critical. Promoting healthful eating options in your community can also help you have a healthy diet.

Population Health

How long on average can you expect to live? **Demographics**, statistical data about populations or groups of people, allow us to start answering this question. In the United States, the average life span has increased from 47 years in 1900 to 78.8 years in 2015.[8] You may be pleased about this trend. However, if you compare the average U.S. life span to that of other countries, you may be surprised. Life expectancy has increased faster in other developed countries, and the United States has fallen behind. If there had been a Health Olympics 2014, the United States would have placed 35th for life expectancy, behind most other developed countries (Figure 1.3). To address this growing disadvantage, we must recognize population differences and consider how they affect health.

Population health is the study of health outcomes in or between groups of individuals.[5,9] The population (or group of individuals) of interest might be college students or racial/ethnic groups in the United States or urban and rural populations within a country or people living in different countries. Other demographics that researchers consider include gender, age, sexual orientation, ability or disability, educational attainment, socioeconomic status, and geographical location. As an individual, you belong to many different populations—the intersecting advantages and disadvantages of each population will influence your health. Measuring differences in health outcomes between populations allows us to document and investigate why health gains are not equally shared, and it creates opportunity for intervention.
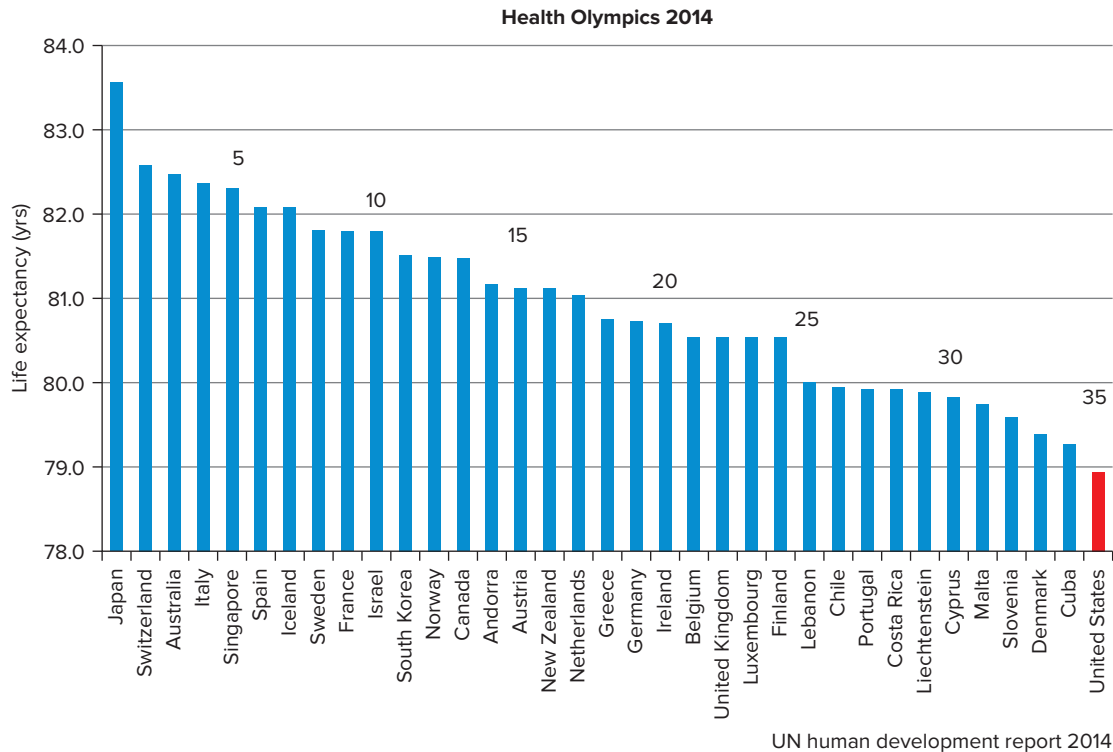
figure 1.3   **Health Olympics 2014, life expectancy in 35 countries.**

Sources: University of Washington, School of Public Health. (2015). *Population health forum*. Retrieved from http://depts.washington.edu/eqhlth/; United Nations Development Program. (2015). Table 1, *Human development report*. Retrieved http://hdr.undp.org/sites/default/files/hdr_2015_statistical_annex.pdf.

Health Equity

Over the past 100 years, advances in medical technology, living conditions, and environmental protections have produced significant health gains around the world. These advances, however, have not produced equal health benefits for all. Differences in health outcomes between specific populations, such as differences between racial or ethnic groups, are **health disparities**. Such differences can exist across a multitude of dimensions such as gender, sexual orientation, disability status, geographical residence, economic status, and educational attainment. Disparities can result from systemic and avoidable social and economic practices and policies that create barriers to opportunity for some groups. **Health equity** occurs when all people have the equal opportunity to attain their full health potential. Here, let's consider geography, ethnicity and race, socioeconomic status, and age as they can affect opportunity and health.[9]

Geography   Life expectancy is not the only measure in which the United States has fallen behind peer countries. In comparison to 16 other high-income countries (Australia, Austria, Canada, Denmark, Finland, France, Germany, Italy,

health disparities
Differences in health outcomes between populations.

health equity
When all people have the opportunity to attain their full health potential.

Japan, Norway, Portugal, Spain, Sweden, Switzerland, the Netherlands, and the United Kingdom):

- U.S. children are more likely to die at birth and less likely to live to age 5.

- U.S. adolescents are more likely to die from homicide and motor vehicle crashes and have higher rates of unplanned pregnancy and sexually transmitted infections.

- U.S. adults lose more years to alcohol and drug addiction.

- U.S. adults have the highest rates of obesity and diabetes.

Overall, compared to those in peer countries, people in the United States have the lowest probability of surviving to age 50. If they do survive to 50, they have higher rates of lung disease, cardiovascular disease, and disability.[10] Within the United States, health gains have not been shared equally. The southeastern states have the lowest life expectancy and highest rates of obesity, diabetes, and other chronic diseases. People in urban areas have two years longer life expectancy than people in rural areas. Rural areas have higher rates of tobacco use, obesity, heart disease, cancer, and unintentional injury.[11] Approximately 85 percent of the U.S. population now lives in urban centers. But since 2000, the Hispanic population has grown in nonmetropolitan areas, and immigrants in general are dispersing throughout rural areas.

Speaking English as a second language may further amplify health disparities. Analysis by ZIP code also shows significant differences. Neighboring residential areas differ in opportunities for employment, education, safety, and public service.[11]

Ethnicity and Race The United States has always been a melting pot of different races and ethnic groups, and it will become even more diverse as the 21st century unfolds. Immigration currently accounts for approximately 50 percent of population growth in the United States. According to the U.S. Census Bureau, the primary racial/ethnic groups in the country are Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, and White. Hispanic origin is treated as a separate category because people of Hispanic origin may be of any race or ethnic group. Within each group, there is tremendous diversity: Asian Americans, for example, include people from China, Japan, Korea, Vietnam, Laos, Cambodia, the Philippines, and many other countries. In 2015, approximately 38 percent of the population consisted of members of racial or ethnic minority groups. In Hawaii, California, New Mexico, Texas, the District of Columbia, and other cities, minorities are the new majority—that is, non-Hispanic Whites now make up less than 50 percent of the population.[12]

Ethnicity refers to the sense of identity individuals draw from a common ancestry, as well as from common national, religious, tribal, language, and cultural origins. Ethnic identity nurtures a sense of social belonging, helping to shape how we think, feel, and behave both within and outside our group. Ethnicity is often confused with **race**, a term used to describe ethnic groups based on physical characteristics such as skin color or facial features. Although classifying people by race has been a common practice, the fact is that biologically distinct and separate races do not exist within the human species. Genetic traits are inherited individually, not in groups or "races." Thus, it is more accurate to view race as a social category rather than a biological one and to think of similarities or differences among people as a matter of culture or ethnicity. Differences in health outcomes are closely linked to historical and ongoing differences in access to social, economic, and environmental resources due to social structure.[10,13]

ethnicity
The sense of identity an individual draws from national, religious, tribal, language, and cultural origins.

race
A term used in the social sciences to describe ethnic groups based on physical characteristics; race does not exist as a biological reality.

■ Health disparities between racial and ethnic groups are largely attributable to social and economic conditions. A poor neighborhood does not provide the same opportunities for a healthy life as a more affluent neighborhood.
(©FatCamera/E+/Getty Images)

When we look at rates of illness and death for ethnic and racial minority populations, we see that health improvements are not shared equally. For example, in the United States, Whites at birth have a life expectancy of 79.0 years and Blacks have a life expectancy of 75.6 years. Many minorities have higher rates of cancer, diabetes, cardiovascular disease, infant mortality, alcoholism, drug abuse, unintentional injury, and premature death than the general population does (see the box, "Variations in Causes of Death Among Americans"). Many also have significantly higher lifestyle risk factors, such as high-fat diets, lack of exercise, and more exposure to carcinogens and other environmental toxins.[10,13]

Socioeconomic Status   Complicating, or perhaps explaining, geographical and racial/ethnic differences is socioeconomic status. It has possibly the most significant impact on health outcomes, with poorer health status associated with low socioeconomic status. This is particularly disconcerting in the United States because we are experiencing increasing income inequality. Poverty creates a vicious cycle as it limits access to education, job opportunities, safe housing, food, and transportation. Low socioeconomic status increases overall stress level. People are more vulnerable if something goes wrong—such as unexpected medical expenses or a car breaking down. Living in lower income communities exposes children and families to increased levels of violence. The absence or existence of policies such as minimum wage requirements, parental leave legislation, and residential zoning laws can perpetuate cycles of poverty or create opportunities for families to have equitable access to factors that influence health.[10,14]

Age   A life-course approach to health is important because our health trajectory plays out over our life span and even across generations. Higher rates of chronic illness are expected in older populations, making awareness of the age distribution in a population important for health and community planning. If we look at the overall leading causes of death for all ages, we see that the major health concerns are chronic diseases—heart disease, cancer, stroke, diabetes, chronic respiratory diseases—and the lifestyle behaviors that contribute to them. The overall makeup of the U.S. population is changing in terms of age. With the large baby boomer generation (those born between 1946 and 1964) reaching retirement age, the nation is aging. This profile places complex new pressures on society and the economy as the number of people in retirement facilities increases quickly while the number of people in the workforce decreases.

In consideration of the relationship between age and health, perhaps the more important concept in a life-course approach is recognizing that there are critical phases in your life during which healthy or harmful environments have the potential for greater impact. The United States has more children growing up in poverty and less social mobility than its peer countries. Poverty and stress during early childhood lead to adverse events over a life span. Children raised in poverty experience higher rates of poor nutrition, greater exposure to toxins, and fewer educational opportunities. Adolescence is another critical transitional period during which completion of high school, college education, and healthy behaviors can improve life-course trajectory.[10,14]

YOUR HEALTH AND YOUR COMMUNITY'S HEALTH

Because this is a personal health book, we will be focusing on the personal, but we will also look at how public health influences the health of populations and communities. Your community influences you, and you will have opportunities to influence aspects of your community. Responsibility for health and wellness extends beyond the individual to public health practices and policies.

Public Health

Your health is inherently linked to the health of the people around you. **Public health** is a discipline that focuses on the health of populations of people (in contrast, the discipline of medicine focuses on the health of individuals). Public health efforts include both health promotion and disease prevention. **Health promotion** focuses on actions designed to maintain a current health state or encourage a more desirable state of health (such as

public health
The study and practice of health promotion and disease prevention at the population level.

health promotion
Public health–related actions designed to maintain a current healthy state or advance to a more desirable state.

■ Natural disasters affect whole populations. Forest fires, for instance, can necessitate the evacuation of entire communities. Preparing for, and responding to, their needs falls into the domain of public health.
(©Elmer Frederick Fischer/Corbis)

Public Health Is Personal

What Is Public Health?

The benefits of public health are all around you, reducing your risk for disease and injury and helping you live a healthier life.

When you get up in the morning, you brush your teeth with the water from your tap. In general, you don't worry about contracting an infectious disease from tap water in the United States because your local health department monitors the water in an attempt to keep it safe. You have had fewer cavities and dental problems than people did a century ago because the tap water you drink contains fluoride, which strengthened your teeth when you were younger.

If you drive to campus, you buckle your seat belt out of habit. Your state has seat belt laws in place to reduce traffic fatalities, and even if you would prefer not to buckle up, you do not want to get a ticket. If you bike to campus, you can avoid dodging cars by taking the bike lane, which has been put in place to protect bicyclists. You meet a friend for a bagel and cream cheese before class. You don't worry about eating the food from a coffee shop because sanitation inspectors ensure that all restaurants follow regulations that reduce incidences of foodborne illness.

After breakfast, you continue your commute to school, past "clean buses" that run on emissions-controlled diesel as part of your city's green energy campaign. A road worker directs you around a lane closure, where construction workers are wearing helmets and hearing protection, following occupational safety and health laws.

You enter your class building, where the air you breathe is fresh and smoke-free. Because tobacco smoke has been recognized as a health hazard, your campus follows regulations that prohibit smoking within 25 feet of public buildings.

After class, you head to the campus health center to pick up a month's worth of contraceptive supplies. You and your partner are not ready for pregnancy; you're planning to delay starting a family until after you finish school. While at the center, you pass signs promoting HIV/AIDS awareness and a supply of free condoms. Free vaccinations are available as part of a campaign to reduce students' risk of illness during the approaching flu season.

Later in the day, you go for a run on a trail in a city park near your home. People are out walking their dogs and obeying the signs to clean up after them in compliance with local ordinances. On your way home, you stop at a local grocery store to pick up some fruit and packaged foods for dinner. You assume the ingredients list printed on the packaged foods accurately reflects what is in them because food-labeling laws have been in place your whole life. When you get home, you know you need to wash the fruit you bought, just as you know you should wash your hands frequently. The wealth of information you have about keeping yourself well and safe comes from the health education you have received in your schools and community.

Ten great public health achievements in the past century include vaccination, motor vehicle safety, safer workplaces, control of infectious diseases, safer and healthier foods, healthier mothers and babies, family planning, fluoridation of drinking water, the recognition of tobacco as a health hazard, and reduced deaths from heart attacks and stroke. Beyond these achievements, innumerable other developments and advances have contributed to your health, including health education initiatives and campaigns. In this book, you can learn more about public health from the "Public Health Is Personal" boxes that appear in each chapter and draw your attention to the different ways that your personal health depends on public health.

connect

Source: Centers for Disease Control and Prevention. (1999; updated 2013). Ten great public health achievements—United States, 1900–1999. *Morbidity and Mortality Weekly Reports, 48*(12): 241–243. Retrieved from http://www.cdc.gov/about/history/tengpha.htm.

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disease prevention
Public health–related actions designed to ward off or protect against specific diseases.

campaigns to promote physical activity). **Disease prevention** focuses on defensive actions to ward off specific diseases and their consequences (such as food and water safety standards or flu shot campaigns). Public health measures can improve the health of populations through education, engineering, and enforcement (see the box "What Is Public Health?"). Public health initiatives must balance the needs and rights of individuals against the needs and rights of other members of the population.

Community Health

Public health agencies are often part of national governments (one responsibility of government is to ensure the safety of society). In the United States, nationwide government-sponsored public health initiatives are conducted by the Public Health Service, led by the surgeon general and the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia. There are also state, tribal, county, and city health departments, and many public health actions take place at the local, or community, level. Funding for governmental public health was drastically reduced during the Great Recession of 2007–2009 and has not recovered.[15]

Nongovernmental organizations also promote population health by researching, educating people about, and advocating for a range of health-related issues, including environmental rights, women's health, economic development, health care, and cancer research. An increasing need for work by agencies and organizations not traditionally considered health-related has arisen due to the vital role of social determinants in health.[3] For example, city planners may not consider themselves in a health-related field, but parks and community walkability directly influence

health and are determined by zoning and planning decisions.

Community implies an interdependence between people and organizations within a defined region. A community has historically been defined by geographical boundaries rather than by people with shared characteristics, and it specifically recognizes ties and connections within the community. **Community health** refers to activities directed toward improving the health of those people, or activities employing resources shared by the members of the community. For example, the health department in a town (the community) with a large immigrant population may decide as part of its emergency preparedness planning to design messages in different languages in order to reach all members of the community. Ideally, the health department would create partnerships with members of the various groups within the town to ensure cultural sensitivity, relevance, and engagement. Research suggests that a healthy community is one that meets the basic needs of *all* its members, offering adequate housing; transportation; access to quality schools, health care, healthy foods, and parks; job opportunities and living wages; and opportunities for civic engagement and social cohesion free from violence.[3]

Communities can plan their services better when they understand population trends (demographics) that affect their members. For example, the growth of Hispanic populations in nonmetropolitan areas suggests that services in rural areas increasingly need to be bilingual or multilingual.[12,14] Knowing the composition of communities helps community members address the needs of all.

A healthy community provides services that support the health and wellness of community members. As an example, community pedestrian and bike trails encourage physical activity and decrease the need for automobiles. *(©Tyler Olson/Shutterstock)*

The Healthy People Initiative

Another example of government interest in the health of the population is the Healthy People initiative, an effort among federal, state, and territorial governments and community partners (private and public) to set health objectives for the United States. The objectives identify the significant preventable threats to health and establish goals for improving the quality of life for all Americans.[16] The U.S. government issued the first *Healthy People* report in 1980 and has issued revised reports every 10 years since then.

Healthy People 2020 envisions "a society in which all people live long, healthy lives" and sets the following broad national health goals:[16]

- Attain high-quality, longer lives free of 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 quality of life, healthy development, and healthy behaviors across every stage of life

Healthy People 2020 emphasizes "health determinants"—factors that affect the health of individuals, communities, or entire populations. Using the same concepts as the socioecological model, the report focuses on the range of personal, social, economic, and environmental factors that affect health. It also takes a life stages focus by recognizing that risk factors are different at different life stages, so interventions are more effective at different critical moments. The report emphasizes the importance of reducing health disparities—differences in health outcomes between populations. We see again that race or ethnicity, socioeconomic status, gender, sexual identity, age, and geographical location can all contribute to differences in health outcomes.

The Healthy People initiative identifies the nation's "leading health indicators"—a set of priority public health issues that can be targeted and measured—as follows:

- Nutrition, physical activity, and obesity

- Maternal, infant, and child health

- Tobacco

- Substance abuse

community health
Issues, events, and activities related to the health of a whole community, as well as activities directed toward bettering the health of the public and/or activities employing resources available in common to members of the community.