FOURTH EDITION

HEALTH PSYCHOLOGY

Richard O. Straub

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A BIOPSYCHOSOCIAL APPROACH

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Richard O. Straub

University of Michigan, Dearborn

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Bill McNeece

About the Author

Richard O. Straub is professor of psychology, chair of the Department of Behavioral Sciences, and founding director of the graduate program in health psychology at the University of Michigan, Dearborn. After receiving his Ph.D. in experimental psychology from Columbia University and serving as a National Institute of Mental Health Fellow at the University of California, Irvine, Dr. Straub joined the University of Michigan faculty in 1979. Since then, he has focused on research in health psychology, especially mind–body issues in stress, cardiovascular reactivity, and the effects of exercise on physical and psychological health. His research has been published in such journals as *Health Psychology,* the *Journal of Applied Social Psychology,* and the *Journal of the Experimental Analysis of Behavior.*

A recipient of the University of Michigan's Distinguished Teaching Award and the Alumni Society's Faculty Member of the Year Award, Dr. Straub is extensively involved in undergraduate and graduate medical education. In addition to serving on the board of directors of the Southeast Michigan Consortium for Medical Education and lecturing regularly at area teaching hospitals, he has created an online learning management system for medical residency programs and authored a series of Web-based modules for teaching core competencies in behavioral medicine.

Dr. Straub's interest in enhancing student learning is reflected further in the study guides, instructor's manuals, and critical thinking materials that he has developed to accompany several leading psychology texts by other leading authors.

The author's professional devotion to health psychology dovetails with his personal devotion to fitness and good health. Dr. Straub has completed hundreds of road races and marathons (including multiple Boston Marathons, Ironman triathlons, and the 2010 Ironman-Hawaii World Championship) and is a nationally ranked, USAT All-American triathlete. With this text, Dr. Straub combines his teaching vocation with a true passion for health psychology.

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Preface

"Your cancer is advanced. Inoperable. Try for whatever quality of life you can maintain. You have 11 weeks to live." Irv Kingston refused to believe this prognosis and instead mobilized every psychological, social, and environmental resource that he could think of to battle his illness. With his positive, upbeat attitude, he insisted on undergoing a grueling (and useless, according to his doctor) regimen of cancer treatment. And his bravery worked: 12 months later, he received a clean bill of health and resumed his normal life.

Of course, some diseases take their toll, no matter what biological, psychological, or social defenses we offer. However, study after study has shown that attitude and environment matter—that good health is more than a physiological state. Just 30 years ago, health and psychology were separate disciplines, each aware of the other but unable to connect in any meaningful way. Then, in 1978, the field of *health psychology* was born, and it has grown explosively since then. From the earliest research linking Type A behavior to increased risk for cardiovascular disease, to the most current discoveries regarding psychosocial influences on the inflammatory processes involved in cardiovascular disease, cancer, and other chronic diseases, health psychology already has accomplished much.

More important than individual research findings has been the ongoing refinement of the *biopsychosocial (mind–body) model* as an interdisciplinary template for the study of health issues (the importance of which is reflected in the new subtitle of this text). Increasingly, researchers are able to pinpoint the physiological mechanisms by which anger, loneliness, and other psychosocial factors adversely affect health, and by which optimism, social connectedness, and a strong sense of self-empowerment exert their beneficial effects.

Experiencing these exciting and productive early years of health psychology inspired me to write this text—to share with aspiring students this vitally important field. My goals in this text have been to present current, relevant, well-supported summaries of the main ideas of the field, and to model a scientific way of thinking about those ideas in the process. Understanding human behavior and teaching students are my two professional passions, and nowhere have these passions come together more directly for me than in writing this text about how psychology and health are interconnected.

What's New in the Fourth Edition?

In this thoroughly revised fourth edition, my aim continues to be to present the science of health psychology clearly, accurately, and in an accessible voice that helps students make meaningful connections with their own lives. Yet I've introduced a number of significant changes:

- Over **700 new research citations** that provide a complete and up-to-date picture of the field

- **Updated throughout** to reflect the new DSM-5
- **A new chapter** on exercise, sleep, and injury control (Chapter 7)
- **New coverage** of positive psychology and epigenetics
- **New coverage** of the health effects of the Affordable Health Care Act, including cross-cultural comparisons of how other countries address the basic human right of health care
- **New material** on biological verification of health outcome measures and newer measures of stress, including ecological momentary assessment (EMA), electronically activated recording (EAR), and ambulatory blood pressure (ABP)
- **New topics,** including mindfulness, cognitive-behavioral interventions, eating disorder interventions, prescription drug abuse, sugar and obesity, the neurobiology of resilience, and more
- New research and expanded coverage of **cultural and gender diversity** in health and health care
- Added coverage of **psychoneuroimmunology** and the associated shift in medical education, highlighting the growing importance of mind–body issues in health (and best practices in health care)

In addition, there are the following new pedagogy and features:

- **New *Your Health Assets*** boxes that give students self-testing opportunities to connect the material to their own experiences
- **New *Interpreting Data*** boxes that help students become more comfortable with the crucial quantitative component of research in a health psychology context
- End-of-chapter ***Weigh In on Health*** features that have been reworked with a new focus on critical thinking to help students assess their understanding of material, and to make meaningful connections between the course and their own life experiences
- A redesigned Worth Companion Web site that includes **Health Psychology Videos** and special section on **Health Psychology Today and Tomorrow**

Trademark Features

In an effort to communicate the excitement and value of the field, I have maintained my focus on ensuring that students understand—rather than just memorize—the concepts that make up health psychology. I have retained the following key features:

- **Biopsychosocial approach.** The book follows the biopsychosocial (mind–body) model as the basic organizing template. Throughout, I have strived to convey how the components of this model interact dynamically in influencing the well-being of the *whole* person. Each chapter dealing with a specific health problem—on AIDS, cardiovascular disease, cancer, and substance abuse, for

example—presents a critical analysis of what we know to be the underlying biological, psychological, and social factors in the onset of the health problem, as well as how these factors affect the course of the disease and the outcome. My commitment to this interdisciplinary *systems* perspective on behavior stems from my eclectic graduate training (some would say, inability to make up my mind as to which career path I would follow!) as a student of learning theorist Herbert Terrace, physiological psychologist Richard Thompson, and social psychologist (and health psychology pioneer) Stanley Schachter.

- **Up-to-date coverage.** Few psychological disciplines generate more research each year, and from such a wide variety of related fields, than does health psychology. I have retained the field's classic studies and concepts, but I have also presented the most important recent developments. More than 25 percent of its references are from research published since 2010.
- **Fully integrated gender and cultural diversity coverage.** One of my major goals has been to promote understanding of, and respect for, differences among groups of people and how these differences affect health and illness. This effort extends beyond merely cataloging ethnic, cultural, and gender differences in disease, health beliefs, and behaviors. I have made an in-depth effort to stimulate students' critical thinking regarding the origins of these differences. For example, many differences in health-related behaviors are the product of restrictive social stereotypes and norms, economic forces, and other overarching ecological processes. Whenever possible, the text digs deeply into diversity issues by considering the origins of these behaviors and their implications for health-promoting treatments and interventions. Examples of this integrated coverage are provided in Tables 1, 3, and 4 on pages xvi–xviii. The ***Diversity and Healthy Living* boxes** found throughout the text expand the integrated coverage of gender and multicultural issues by highlighting specific health issues. For example, students will explore differences in how women and men cope with a grave national crisis, why hypertension is so prevalent among African-Americans, and the role of sociocultural factors in AIDS prevention.
- **The life-course perspective.** In integrated coverage through the text, students will learn about the special needs and health challenges of people in every season of life. As with gender and diversity, my approach is to teach students to think critically about aging and health. Increasingly, researchers are realizing that much of what was once considered normal aging is actually disease. Many older people who have made healthy lifestyle choices are rewriting the book on successful aging. The choices people make as children and adolescents may determine their fates in later years. Table 2 on page xvii outlines examples of coverage of life-span issues.
- **Coverage of complementary and alternative medicine.** According to a recent *Journal of the American Medical Association* report, 4 out of 10 Americans use acupuncture, massage therapy, naturopathy, or some other form of nontraditional medicine. Chapter 15 carefully explores the validity of these high-interest, alternative interventions.

- **Helpful study aids.** This text is designed to bring health psychology alive and reinforce learning at every step. Its clean, student-friendly visual appeal is enhanced by numerous clear graphs of research findings, useful and interesting photos, and compelling artwork that illustrates anatomical structures as well as important concepts and processes. In addition, each chapter includes the following learning aids:
  a. An engaging **case study or vignette** at the beginning of each chapter connects the world of health psychology to some concrete experience and weaves a thread of human interest throughout the chapter. All of these describe real situations. For example, Chapter 11 describes my own family's life-changing battle against the cancer that threatened my young son's life.
  b. All important **terms,** which are boldfaced in the body of the text, are defined concisely and clearly in the margins to enhance students' study efforts. They are also listed, with their page numbers, at the end of each chapter.
  c. **End-of-chapter summaries** distill the important points, concepts, theories, and terms discussed in the chapters.

Table 1 Coverage of Culure and Multicultural Experience

Coverage of culture and multicultural experiences can be found on the following pages:

Acculturation and immigrant stress, pp. 126–127
African-Americans and hypertension, pp. 54–55, 375–377
African-American adolescents and personal control, p. 171
Alcohol use, p. 333
Antismoking campaigns, p. 352
Body mass and hypertension among African-Americans, p. 43
Cancer
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Health insurance, pp. 207–210
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  transmission and AIDS, p. 456–457
Immigrants
  and stress, pp. 126–127
Obesity, pp. 293–296
Optimism and Hispanic-Americans, pp. 167–168
Pain, p. 535
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Sociocultural perspective in health psychology, p. 24
Socioeconomic status
  and cancer, pp. 417–418
  and cardiovascular disease, pp. 374–377, 386
  and health care use, pp. 493–494
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  and obesity, pp. 293–296
  and patient communication problems, pp. 502–503
  and provider communication problems, p. 502
  and stress, pp. 117, 126–127, 139, 157–162
Substance abuse, pp. 332–333
Symptom interpretation, pp. 493–494
Tobacco use, pp. 344–345

Table 2 Coverage of Life-Span Issues

Life-span issues are discussed on the following pages:

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- exercise, p. 248
- hypertension, p. 376
- perceived vulnerability to risky behaviors, p. 201
- tobacco use, pp. 348–349

Age and hardiness, p. 164
Age differences in sick role behavior, pp. 491–493
Age-related conditions and cortisol, pp. 131–132
Ageism and compliance, p. 492
Age-pain relationship, pp. 531–532
Alcohol, pp. 203, 207, 331–332
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Cancer
- and age, p. 416
- and children, pp. 432, 444

Cardiovascular disease, older men and negative emotions, p. 385
Children coping with pain and medical procedures, p. 537
Children, hostility, and metabolic disorder, pp. 381–382
Cigarette advertising and children, p. 348
Cigarette antismoking campaign and children, pp. 351–352
Community and wellness, pp. 210–211
Diabetes and age, pp. 396–397
Eating disorders, demographics and genders, pp. 304–305
- treatment of, pp. 310–311

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Life-course perspective, pp. 19–20
Longevity and lifestyle, pp. 205–206
Obesity–health relationship
- and age, pp. 289–290
- and gender, pp. 293–294

Optimism and children, p. 167
Reactivity and hypertension in children, p. 146
Research methods, pp. 48–49
Resilience in children, pp. 165–166
Seeking health services, pp. 490–493
Shaping pain behavior in children, pp. 536–537
Sleep and health, pp. 250–257
Smoking and aging, pp. 207, 346–347
Stress and social support, pp. 175–177
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Table 3 Coverage of the Psychology of Women and Men

Coverage of the psychology of women and men can be found on the following pages:

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- and psychosocial barriers to intervention, pp. 477–478
- and transmission, pp. 455–457

Alcohol
- and behavior and personality traits, pp. 29–30
- dating behavior, pp. 335–336
- gender and drinking contexts, pp. 331–333, 339–340

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Coverage of positive health psychology can be found on the following pages:

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The Multimedia Supplements Package

As an instructor and supplements author, I know firsthand the importance to a textbook of a good, comprehensive teaching package. Fortunately, Worth Publishers has a well-deserved reputation for producing the best psychology supplements around, for both faculty and students. The supplements package includes several valuable components, described next.

Instructor's Resources

The digital ***Instructor's Resource Manual*** features chapter-by-chapter previews and lectures, learning objectives and chapter teaching guides, suggestions for planning and teaching health psychology, ideas for term projects, and detailed suggestions for integrating audiovisual materials into the classroom—all based on my many years of teaching health psychology.

The comprehensive ***Test Bank*,** now also available in computerized form and based on my classroom experience and testing, contains well over 1000 multiple-choice and short-answer essay questions, each keyed to the American Psychological Association's goals for the undergraduate psychology major and Bloom's Taxonomy. The questions include a wide variety of applied, conceptual, and factual questions, and each item is keyed to the topic and page in the text on which the answer can be found.

Worth's Health Psychology Tool Kit: http://www.worthpublishers.com/launchpad/healthtk

This text's companion Web site offers a variety of simulations, tutorials, and study aids organized by chapter, including the following:

- **Online quizzing** This helpful feature offers multiple-choice quizzes tied to each of the book's chapters.
- ***Check Your Health*** These inherently interesting, automatically tallying self-assessments allow students to examine their own health beliefs and behaviors. For example, students will learn about their stress-management style, their ability to control anger, potentially high-risk health behaviors, and cognitively restructuring headache pain. Each exercise also gives specific tips that encourage students to manage their own health more actively.
- **Critical thinking exercises** The text has two major goals: (1) to help students acquire a thorough understanding of health psychology's knowledge base and (2) to help students learn to think like health psychologists. The second goal—learning to think like psychologists—involves critical thinking. To support this goal directly, the Web site includes a complete exercise for each chapter designed to stimulate students' critical-thinking skills. These skills include asking questions, observing carefully, seeing connections among ideas, and analyzing arguments and the evidence on which they are based. Each exercise emphasizes one of six categories of critical thinking: *scientific problem solving, psychological reasoning, perspective*

taking, pattern recognition, creative problem solving, and *practical problem solving.* Sample answers to each exercise, and an essay on using critical thinking in everyday reasoning, appear in the *Instructor's Resources* that accompanies this text.

- **Interactive flashcards** Students can use these flashcards for tutoring on all chapter and text terminology, and then to quiz themselves on those terms.
- **PsychSim 5.0: Interactive Exercises for Psychology** Key modules from these series (by Thomas Ludwig, a psychology professor at Hope College) allow students to explore research topics, participate in experiments and simulations, and apply health psychology to real-world issues.
- **Customized Microsoft PowerPoint slides** This collection was created for use in my health psychology course. These slides focus on key terms and themes from the text and feature tables, graphs, and figures.
- **Worth Health Psychology videos,** a collection of over 30 clips spanning the topics in the book

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To those of you who are about to teach using this book, I sincerely hope that you will share your experiences with me. Drop me a line and let me know what works, what doesn't, and how you would do it differently. This input will be vital in determining the book's success and in shaping its future.

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Part 1 Foundations of Health Psychology

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Introducing Health Psychology

Caroline Flynn stepped aboard the 32-ton steamer Mauretania *on what must have been an uncertain morning in the early 1880s. Bound for the United States, her journey of hope began in Liverpool, England, in a desperate attempt to escape the economic distress and religious persecution that she and her family suffered in Ireland. The country's troubles had begun decades earlier with "an Gorta Mór" (the Great Hunger)—a famine caused by the potato fungus that destroyed the primary, and often only, food of most Irish families.*

Caroline's journey was hardly unique. Between 1861 and 1926, four million Irish left the country for similar reasons, and young people like Caroline were brought up for "export" overseas. After a harrowing five- to six-week voyage across the Atlantic, crowded with other emigrants into a steerage compartment that was rarely cleaned, they endured the humiliating processing of immigrants at Ellis Island. Many of those who were sick or without financial means or sponsors were forced to return to their homeland.

As Caroline doggedly made her way in her adopted country, first north to upstate New York and then west to Chicago, she found that things were better, but life was still hard. Doctors were expensive (and few in number), and she always had to guard against drinking impure water, eating contaminated foods, or becoming infected with typhoid fever, diphtheria, or one of the many other diseases that were prevalent in those days. Despite her vigilance, her survival (and later that of her husband and newborn baby) remained uncertain. Life expectancy was less than 50 years, and one of every six babies died before his or her first birthday. "It would keep you poor, just burying your children," wrote one Irishwoman to her family back home (Miller & Miller, 2001). Equally troubling was the attitude of many native-born

Americans, who viewed the Irish as inferior, violent, and drunken. Most of the new immigrants toiled as laborers in the lowest-paid and most dangerous occupations, and were banished to ghettolike "Paddy" towns that sprang up on the outskirts of cities such as New York and Chicago.

More than a century later, I smile as my mother recounts the saga of my great-grandmother's emigration to the United States. Her grandmother lived a long, productive life and left a legacy of optimism and "indomitable Irishy" that fortified her against the hardships in her life—and carried down through the generations. "How different things are now," I think as our phone call ends, "but how much of Caroline's spirit is still alive in my own children!"

Things are very different now. Advances in hygiene, public health measures, and microbiology have virtually eradicated the infectious diseases that Caroline feared most. Women born in the United States today enjoy a life expectancy of over 80 years, and men often reach the age of 73. This gift of time has helped us realize that health is much more than freedom from illness. More than ever before, we can get beyond survival mode and work to attain lifelong vitality by modifying our diets, exercising regularly, and remaining socially connected and emotionally centered.

My great-grandmother's story makes clear that many factors interact in determining health. This is a fundamental theme of **health psychology,** a subfield of psychology that applies psychological principles and research to the enhancement of health and the treatment and prevention of illness. Its concerns include social conditions (such as the availability of health care and support from family and friends), biological factors (such as family longevity and inherited vulnerabilities to certain diseases), and even personality traits (such as optimism).

The word *health* comes to us from an old German word that is represented, in English, by the words *hale* and *whole,* both of which refer to a state of "soundness of body." Linguists note that these words derive from the medieval battlefield, where loss of *haleness,* or health, was usually the result of grave bodily injury. Today, we are more likely to think of health as the absence of disease rather than as the absence of a debilitating battlefield injury. Because this definition focuses only on the absence of a negative state, however, it is incomplete. Although it is true that healthy people are free of disease, complete health involves much more. A person may be free of disease but still not enjoy a vigorous, satisfying life. **Health** involves physical as well as psychological and social well-being.

■ **health psychology** The application of psychological principles and research to the enhancement of health and the prevention and treatment of illness.

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

> **The health of women is inextricably linked to their status in society. It benefits from equality and suffers from discrimination.**
>
> **—World Health Organization**

We are fortunate to live in a time when most of the world's citizens have the promise of a longer and better life than their great-grandparents, with far less disability and disease than ever before. However, these health benefits are not universally enjoyed. Consider:

- The number of healthy years of life that can be expected by a child born today differs substantially from country to country, ranging from 37.1 (Haiti) to 71.7 years (Japan) for women and from 27.9 (Haiti) to 68.8 years (Japan) for men (Salomon and others, 2012). Infections continue to have a profound impact in populations deprived of social and economic resources (Semenza, 2010).
- The number of new cases of cancer among minority populations in the United States is projected to double in upcoming decades (U.S. Department of Health and Human Services, 2011a).
- Within the United States, states in the southeast region generally have higher death rates than those in other regions of the country (Minino & Murphy, 2012).
- Violence, drug- and alcohol-related deaths and injuries, accidents, and sexual perils such as abuse and sexually transmitted infections often mark the transition from adolescence to adulthood (OECD, 2012).
- At every age, these and other **health disparities** abound. For instance, death rates vary by ethnic group. Among American men and women, those of European ancestry have a longer life expectancy than African-Americans, but both groups have shorter life expectancies than people in Japan, Canada, Australia, the United Kingdom, Italy, France, and many other countries (U.S. Census Bureau, 2012). It is estimated that nearly 1 million deaths each year in this country (among all age groups) are preventable (see Table 1.1).
- Although men are twice as likely as women to die of any cause, beginning in middle age, women have higher disease and disability rates (U.S. Census Bureau, 2012).

health disparities Preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health that are experienced by socially disadvantaged populations.

Table 1.1

Preventable Injury and Death

- Control of underage and excess use of alcohol could prevent 100,000 deaths from automobile accidents and other alcohol-related injuries.
- Elimination of public possession of firearms could prevent 35,000 deaths.
- Elimination of all forms of tobacco use could prevent 400,000 deaths from cancer, stroke, and heart disease.
- Better nutrition and exercise programs could prevent 300,000 deaths from heart disease, diabetes, cancer, and stroke.
- A reduction in risky sexual behaviors could prevent 30,000 deaths from sexually transmitted diseases.
- Full access to immunizations for infectious diseases could prevent 100,000 deaths.

Source: U.S. Department of Health and Human Services. (2007). *Healthy People 2010 midcourse review*. Retrieved January 10, 2010, from http://www.healthypeople.gov/Data/midcourse/.

- Health care costs have risen sharply in the past 50 years. In 1960, health care costs represented only 5.1 percent of the gross domestic product (GDP) of the United States. Today, the United States spends $8233 per person (17.6 percent of GDP) on health care. Although this amount is more than two-and-one-half times more than most developed nations in the world, the United States has a lower average life expectancy than that in other affluent countries, fewer physicians and hospital beds per person, and was ranked by the World Health Organization only 37th out of 191 countries in terms of the overall performance of its health care system, as measured by such factors as responsiveness, fairness of funding, and accessibility by all individuals (OECD, 2011; WHO, 2000a).

Data related to health disparities can be found through the WHO (http://www.who.int/research/en/), which documents disparities across and within countries. For the United States, the Kaiser Family Foundation (www.kff.org) provides monthly updates on health disparities and maintains an interactive Web site (www.statehealthfacts.org) with data on ethnic and racial differences on a state-by-state basis.

These statistics reveal some of the challenges in the quest for global wellness. Health professionals are working to reduce the 30-year discrepancy in life expectancy between developed and developing countries, to help adolescents make a safe, healthy transition to adulthood, and to achieve a deeper understanding of the relationships among gender, ethnicity, sociocultural status, and health.

In the United States, the Department of Health and Human Services report *Healthy People 2010* focused on improving access to health services; eliminating health disparities between women and men, as well as among various age and sociocultural groups; and in general on substantially improving the health and quality of life and well-being for all Americans. It also noted that nearly 1 million deaths in this country each year are preventable. *Healthy People 2020* expands these goals into specific actions and targets for reducing chronic diseases such as cancer and diabetes, improving health in people of all ages, preventing injuries and violence, and taking steps in 32 other areas (see Table 1.2). Specifically, the overarching goals are to:

- 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 all life stages.

To help the nation meet these goals, on March 23, 2010, President Barack Obama signed the **Patient Protection and Affordable Care Act (PPACA),** the most significant overhaul of the U.S. health care system in nearly 50 years. The primary goals of the new law, which is being implemented incrementally and will be in full effect by 2015, are to decrease the number of people who do not have health insurance and to lower the costs of health care. Other reforms are aimed at improving health care outcomes and streamlining the delivery of health care. In addition, under PPACA, insurers will be required to cover certain types of preventive care at no cost to the consumer, including blood

Patient Protection and Affordable Care Act (PPACA) A new federal law aimed at reducing the number of people in the United States who do not have health insurance, as well as lowering the costs of health care.

Table 1.2

Select Topic Area Goals and Targets of *Healthy People 2020*

Adolescent Health

- Increase the proportion of adolescents who have had a wellness checkup in the past 12 months (target: 75.6 percent)
- Reduce the proportion of adolescents who have been offered, sold, or given an illegal drug on school property (target: 20.4 percent)

Physical Activity

- Increase the proportion of adults who engage in aerobic physical activity of at least moderate intensity for at least 150 minutes/week, or 75 minutes/week of vigorous intensity, or an equivalent combination
- Increase the proportion of the nation's public and private schools that require daily physical education for all students

Nutrition and Weight Status

- Increase the proportion of schools that do not sell or offer calorically sweetened beverages to students (target: 21.3 percent)
- Increase the proportion of adults who are at a healthy weight (target: 33.9 percent)

Injury and Violence Prevention

- Reduce unintentional injury deaths (target: 36.0 deaths per 100,000 population)
- Reduce motor vehicle crash–related deaths (target: 12.4 deaths per 100,000 population)

Sleep Health

- Increase the proportion of adults who get sufficient sleep (target: 70.9 percent)
- Reduce the rate of vehicular crashes per 100 million miles traveled that are due to drowsy driving (target: 2.1 vehicular crashes per 100 million miles traveled)

Source: http://healthypeople.gov/2020/topicsobjectives2020/pdfs/HP2020objectives.pdf.

pressure and cholesterol tests, mammograms, colonoscopies, and screenings for osteoporosis.

This chapter introduces the field of health psychology, which plays an increasingly important role in meeting the world's health challenges. Consider a few of the more specific questions that health psychologists seek to answer: How do your attitudes, beliefs, self-confidence, and personality affect your physiology and your overall health? Why are so many people turning to acupuncture, yoga, herbal supplements (plus other forms of alternative medicine), as well as do-it-yourself preventive care? Do these interventions really work? Why do so many people ignore unquestionably sound advice for improving their health, such as quitting smoking, moderating food intake, and exercising more? Why are certain health problems more likely to occur among people of a particular age, gender, or ethnic group? Why is being poor, uneducated, or lonely a potentially serious threat to your health? Conversely, why do those who are relatively affluent, well educated, and socially active enjoy better health?

Health psychology is the science that seeks to answer these and many other questions about how our wellness interacts with how we think, feel, and act. We begin by taking a closer look at the concept of health and how it has changed over the course of history. Next, we'll examine the biopsychosocial perspective on health psychology, including how it draws on and supports other health-related fields. Finally, we'll take a look at the kind of training needed to become a health psychologist and what you can do with that training.

Health and Illness: Lessons from the Past

Although all human civilizations have been affected by disease, each one has understood and treated it differently. At one time, people thought that disease was caused by demons. At another, they saw it as a form of punishment for moral weakness. Today, we wrestle with very different questions, such as, "Can disease be caused by an unhealthy personality?" We will consider how views regarding health and illness have changed by following a case study through the ages—the story of Mariana, who in 2013 was a 20-year-old college sophomore. Mariana presents to her family doctor with a bad headache, shortness of breath, sleeplessness, a racing heart, and a wild, frightened expression. How will she be treated? Current understanding of these symptoms would probably lead most health professionals to suggest that Mariana is suffering from anxiety. Her treatment today might be a combination of talk therapy, relaxation techniques, and possibly targeted drug therapy. But as we will see, her treatment through the ages would have varied widely. (You may want to refer to Figure 1.1 throughout this section to get a sense of the chronology of changing views toward health and illness.)

Ancient Views

Prehistoric Medicine

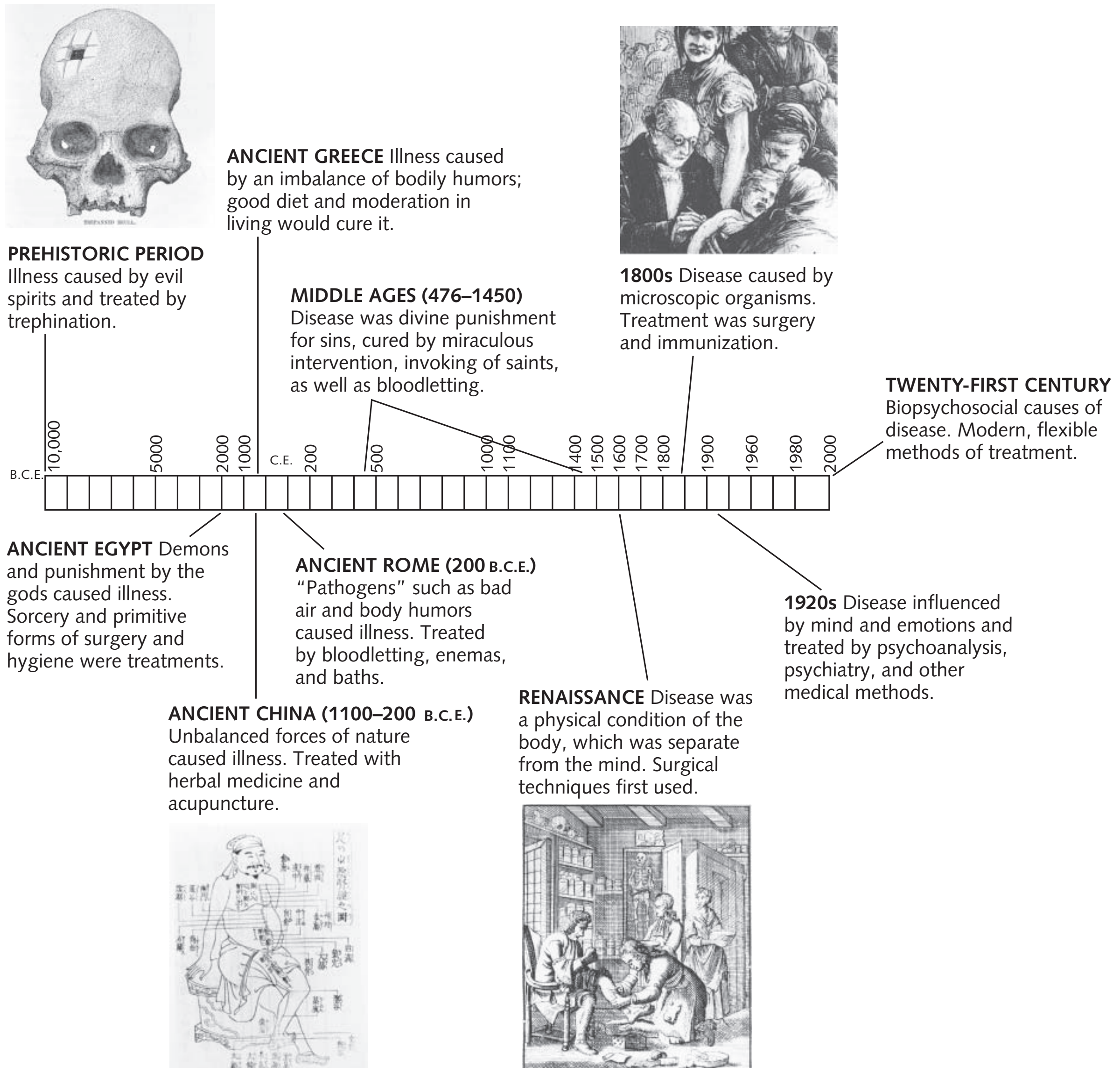
Our efforts at healing can be traced back 20,000 years. A cave painting in southern France, for example, which is believed to be 17,000 years old, depicts an Ice Age shaman wearing the animal mask of an ancient witch doctor. In religions based on a belief in good and evil spirits, only a shaman (priest or medicine man) can influence these spirits.

For preindustrial men and women, confronted with the often-hostile forces of their environment, survival was based on constant vigilance against these mysterious forces of evil. When a person became sick, there was no obvious physical reason for it. Rather, the stricken individual's condition was misattributed to weakness in the face of a stronger force, bewitchment, or possession by an evil spirit (Amundsen, 1996).

During this period of time, Mariana's symptoms might have been treated with rituals of sorcery, exorcism, or even a primitive form of surgery called

Figure 1.1

A Timeline of Historical and Cultural Variations in Illness and Healing From the ancient use of trephination to remove evil spirits to the current use of noninvasive brain scans to diagnose disease, the treatment of health problems has seen major advances over the centuries. A collection of treatments across the ages is shown (from left to right): trephination (on an ancient Peruvian skull); acupuncture from China; early surgery in seventeenth-century Europe; and vaccination by the district vaccinator in nineteenth-century London.



Credits (left to right): Trephinated skull engraving by English School (nineteenth century) published 1878 in "Incidents of Travel and Exploration in the Land of the Incas" by E. George Squier: private collection/Bridgeman Art Library; illustration showing acupuncture: © Bettman/Corbis; "The Surgeon," engraving by German School (seventeenth century): private collection/Bridgeman Art Library; "Vaccination" engraving, 1871: Hulton Archive/Stringer/Getty Images.

trephination. Archaeologists have unearthed prehistoric human skulls containing irregularly shaped holes that were apparently drilled by early healers to allow disease-causing demons to leave patients' bodies. Historical records indicate that trephination was a widely practiced form of treatment in Europe, Egypt, India, and Central and South America.

About 4000 years ago, some peoples realized that hygiene also played a role in health and disease, and they made attempts at improving public hygiene. The ancient Egyptians, for example, engaged in cleansing rites intended to discourage illness-causing worms from infesting the body. In Mesopotamia (a part of what is now Iraq), soap was manufactured, bathing facilities designed, and public sewage treatment systems constructed (Stone, Cohen, & Adler, 1979).

■ **trephination** An ancient medical intervention in which a hole was drilled into the human skull, presumably to allow "evil spirits" to escape.

■ **humoral theory** A concept of health proposed by Hippocrates that considered wellness a state of perfect equilibrium among four basic body fluids, called *humors*. Sickness was believed to be the result of disturbances in the balance of humors.

Greek and Roman Medicine

The most dramatic advances in public health and sanitation were made in Greece and Rome during the sixth and fifth centuries B.C.E. In Rome, a great drainage system was built to drain a swamp that later became the site of the Roman Forum. Over time, this drainage system assumed the broader function of a modern sewage system. Public bathrooms, for which there was a small admission charge, were commonplace in Rome by the first century C.E.

The first aqueduct brought pure water into Rome as early as 312 B.C.E., and cleaning of public roads was supervised by a group of appointed officials who also controlled the food supply. This group passed regulations to ensure the freshness of meat and other perishable foods, and they arranged for the storage of vast quantities of grain, for example, in an effort to forestall famine.

In ancient Greece, the philosopher Hippocrates (460–377 B.C.E.) was establishing the roots of Western medicine when he rebelled against the ancient focus on mysticism and superstition. Hippocrates, who is often called the "father of modern medicine," was the first to argue that disease is a natural phenomenon and that the causes of disease (and therefore their treatment and prevention) are knowable and worthy of serious study. In this way, he built the earliest foundation for a scientific approach to healing. Historically, physicians took the Hippocratic Oath, with which they swore to practice medicine ethically. Over the centuries, the oath has been rewritten to suit the values of various cultures that were influenced by Greek medicine. A version widely used in U.S. medical schools today was written in 1964 by Dr. Louis Lasagna of Tufts University.

. . . I will prevent disease whenever I can, for prevention is preferable to cure.

I will remember that I remain a member of society, with special obligations to all my fellow human beings, those sound of mind and body as well as the infirm.

If I do not violate this oath, may I enjoy life and art, respected while I live and remembered with affection thereafter. May I always act so as to preserve the finest traditions of my calling and may I long experience the joy of healing those who seek my help.

—Written in 1964 by Louis Lasagna, Academic Dean of the School of Medicine at Tufts University, this is the modern version of the Hippocratic Oath used in many medical schools today.

Hippocrates proposed the first rational explanation of why people get sick, and the healers of this period in history may have been influenced by his ideas in addressing Mariana's problems. According to his **humoral theory,** a healthy body and mind resulted from equilibrium among four bodily fluids called *humors:* blood, yellow bile, black bile, and phlegm. To maintain a proper balance, a person had to follow a healthy lifestyle that included exercise, sufficient rest, a good diet, and the avoidance of excesses. When the humors were out of balance, however, both body and mind were affected in predictable ways,