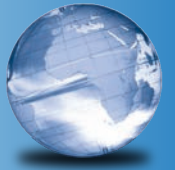


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Health

The Basics

ELEVENTH EDITION



Rebecca J. Donatelle

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Health The Basics

11th Edition

Global Edition

REBECCA J. DONATELLE

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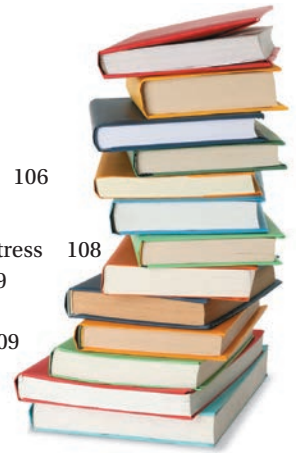
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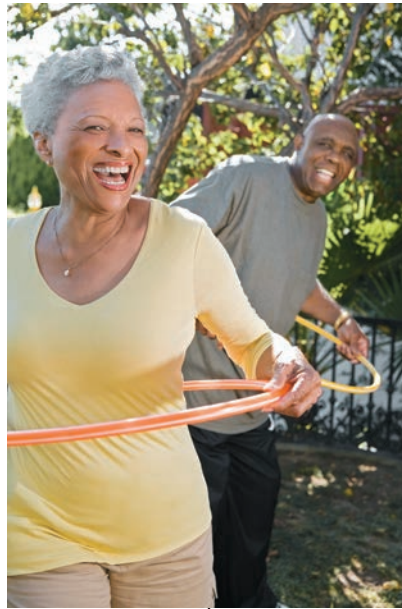
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Chapter 5: Building Healthy Relationships and Understanding Sexuality
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Chapter 7: Recognizing and Avoiding Addiction and Drug Abuse
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Long- and Short-Term Effects of Alcohol



Chapter 8: Drinking Alcohol Responsibly and Ending Tobacco Use

Long- and Short-Term Effects of Tobacco



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Chapter 12: Reducing Your Risk of Cardiovascular Disease and Cancer

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Chapter 16: Making Smart Health Care Choices

Being a Good Health Care Consumer



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CAM: Risks vs. Benefits

Preface

In today's world, health is headline news. Whether it is the latest cases of deadly *Escherichia coli* infections from eating infected produce, a new environmental catastrophe, or increasing rates of obesity and diabetes, we are bombarded with a seemingly endless list of potential threats to our health. The issues often seem so huge, so far-reaching, that you may wonder if there is anything you can do to make a difference; to ensure a life that is healthy and long and a planet that is preserved for future generations. You are not alone! Getting healthy and staying healthy is a challenge for many, but the good news is that you *can* do things to improve your health and the health of others. Regardless of your age, sex, race, the environment you live in, or the challenges you face, you can be an agent for healthy change for you, your loved ones, and the greater community.

My goal in writing *Health: The Basics*, 11th Edition, is to empower students to identify their health risks, to examine their behaviors, and to come up with a plan designed to make health a bigger priority in their lives. Because many of today's health concerns know no geographical boundaries, my aim is to challenge students to think globally as they consider health risks and seek creative solutions, both large and small, to address complex health problems. Finding ways to take "baby steps" to change deeply ingrained behaviors is often a key part of successful change. There is no one-size-fits-all recipe for health. This book provides the most scientifically valid information available to help students be smarter in their health decision making, more knowledgeable about personal choices, and more active advocates for healthy changes in their community.

This book is designed to help students quickly grasp the information and understand its relevance to their own lives, both now and in the future. With each new edition of *Health: The Basics*, I am gratified by the overwhelming success that this book has enjoyed through its many revisions and changes. I hope that this edition's rich foundation of scientifically valid information, its wealth of technological tools and resources, and its thought-provoking features will continue to stimulate students to share my enthusiasm for health and to actively engage in health promotion, health behavior, and disease prevention.

New to This Edition

Health: The Basics, 11th Edition, maintains many features that the text has become known for, while incorporating several major revisions and exciting new features. The multimedia created for the 11th Edition is more innovative and robust than ever, and features in the text reflect the exciting, growing connection between multimedia and health. The most noteworthy changes to the text and media as a whole include the following:

- **NEW! MasteringHealth** is an online homework, tutorial, and assessment product designed to improve results by helping students quickly master concepts. Students benefit from self-paced tutorials that feature immediate wrong-answer feedback and hints that emulate the office-hour experience to help keep students on track. With a wide range of interactive, engaging, and assignable activities, students are encouraged to actively learn and retain tough course concepts.
- **NEW! 51 ABC News Videos** bring health to life and spark discussion with up-to-date hot topics and include multiple-choice questions that provide wrong-answer feedback to redirect students to the correct answer.
- **NEW! A new mini-chapter, Focus On: Improving Your Financial Health**, covers credit card scams, creating and sticking to a budget, student loans, planning for the future, and other topics related to the practical application of money and finances to health. The chapter follows the first chapter of the book.
- **NEW! Money & Health boxes** cover elements of the financial or economic world that impact personal health. Topics include tips to maximize health care benefits while minimizing costs and guidelines to follow when shopping for fitness facilities to ensure you get a good deal.
- **NEW! Tech & Health boxes** tackle technology advances that make a difference to students. Topics include reviews of various diet- and exercise-monitoring phone apps and a look at whether students who go "tech free" for a time go through the same withdrawal symptoms that drug addicts experience.
- **NEW! Focus On: Reducing Risks and Coping with Chronic Diseases and Conditions** and **Focus On: Understanding Complementary and Alternative Medicine** are new mini-chapters.
- **NEW! Each chapter now includes a Video Tutor** presentation that highlights a book figure or point of discussion in an engaging video (28 total). QR codes placed in the narrative tell students when a video is available. Just scan the QR code with a reader on your smartphone or tablet, and your phone loads up the appropriate Video Tutor.

Chapter-by-Chapter Revisions

The 11th Edition has been updated line by line to provide students with the most current information and references for further exploration. Portions of chapters have been reorganized to improve the flow of topics, and figures, tables, feature boxes, and photos have all been added, improved on, and updated. Throughout the text, all data, statistics, and references have been updated to the most recent possible. The following is a chapter-by-chapter listing of some of the most noteworthy changes, updates, and additions.

Chapter 1: Accessing Your Health

- New **Money & Health** box on maximizing health care and minimizing costs
- New **Tech & Health** box on finding health news on the Internet
- New **Health Headlines** box explaining the Affordable Care Act
- New figure on the transtheoretical model of behavior change

Focus On: Improving Your Financial Health

- New chapter on the basics of financial health, including budgeting, understanding student loans, managing credit cards and debt, and resolving identity theft

Chapter 2: Promoting and Preserving Your Psychological Health

- New **Health Headlines** box covering the causes and effects of too much self-esteem
- New *DSM-5* categories used throughout the discussion of mental illnesses and disorders
- New **Money & Health** box on low-cost options for treating mental health conditions
- Updated discussion of suicide because it has become the leading cause of death on college campuses

Focus On: Cultivating Your Spiritual Health

- New **Skills for Behavior Change** box on community service

Chapter 3: Managing Stress and Coping with Life's Challenges

- New **Health Headlines** box on positive psychology
- New section on shift and persist strategies

Focus On: Improving Your Sleep

- New section describing the impact of technology on sleep patterns
- New photo highlighting the danger of sleepiness among transportation workers
- New graph of U.S. adults who rarely get a good night's sleep

Chapter 4: Preventing Violence and Injury

- New **Tech & Health** box on identity theft, Internet victimization, and social networking safety
- Updated figure showing crime rate statistics

Chapter 5: Building Healthy Relationships and Understanding Sexuality

- New **Tech & Health** box “Love in the Time of Twitter”
- Changed presentation of the figure showing healthy versus unhealthy relationships continuum to enhance readability
- Updated figure of the male reproductive system to identify more organs
- New **Student Health Today** box on social media screening

Chapter 6: Considering Your Reproductive Choices

- New **Tech & Health** box discussing apps for tracking the fertility cycle
- Updated coverage on the most recent innovations in contraception, including statistics on success and failure rates

Chapter 7: Recognizing and Avoiding Addiction and Drug Abuse

- New figure on the cycle of psychological addiction
- New **Tech & Health** box on technology and Internet addiction
- New **Student Health Today** box on gambling and college students
- New section emphasizing the differences between a habit and an addiction
- New photo feature covering recovery from addiction

Chapter 8: Drinking Alcohol Responsibly and Ending Tobacco Use

- New **Tech & Health** box on electronic cigarette risks and concerns
- New **Student Health Today** box on alcohol and energy drinks
- Updated **Health in a Diverse World** box on global alcohol use

Chapter 9: Eating for a Healthier You

- New **Money & Health** box on budgeting for fruits and vegetables
- Expanded information in figure covering foods that provide complementary amino acids
- Updated figure on fats in vegetable oils to enhance readability
- Reorganized section on the recommended intakes for nutrients

Chapter 10: Reaching and Maintaining a Healthy Weight

- New **Tech & Health** box on diet-tracking smartphone apps
- New figure on the world's most and least overweight countries
- Updated table on analyzing popular diet programs

Focus On: Enhancing Your Body Image

- New figures showing the body image and eating issues continuums
- Enhanced information on body image around the world

Chapter 11: Improving Your Personal Fitness

- New **Money & Health** box on choosing a fitness center
- New **Health in a Diverse World** box on how to modify physical activities for people with chronic health conditions
- Reorganized chapter to streamline and enhance the presentation
- Updated discussion of the FITT prescription and associated figure with latest guidelines from the American College of Sports Medicine

Chapter 12: Reducing Your Risk of Cardiovascular Disease and Cancer

- Updated coverage of the risk factors for cardiovascular disease
- Added key term *ideal cardiovascular health*
- Updated **Student Health Today** box on the breast cancer self-examination
- Updated statistics on estimated new cancer cases and cancer deaths
- New figure for the male testicular self-examination
- New table for cancer stages

Focus On: Minimizing Your Risk for Diabetes

- New figure on blood glucose levels
- New **Money & Health** box on the cost of diabetes

Chapter 13: Protecting against Infectious Diseases and Sexually Transmitted Infections

- Revised **Health Headlines** box with more information debunking most anti-vaccination rhetoric
- Updated vaccination recommendations table
- Updated HIV/AIDs infection statistics and recent treatment developments

Focus On: Reducing Risks and Coping with Chronic Diseases and Conditions

- New chapter on key noninfectious diseases, including chronic respiratory diseases, headaches, chronic fatigue syndrome, GI tract problems, back pain, and repetitive motion disorders
- New figures on asthma and the allergic response

Chapter 14: Preparing for Aging, Death, and Dying

- New **Tech & Health** box on hearing loss
- New **Skills for Behavior Change** box with tips for aging well
- New figure on the living arrangements of Americans aged 65 and older

Chapter 15: Promoting Environmental Health

- New **Money & Health** box on food waste
- New **Tech & Health** box on the potential hazards of cell phones
- New **Points of View** box and figure on fracking
- New **Skills for Behavior Change** boxes on shopping to save the planet, avoiding mold, and wasting less water
- Added sections on photochemical smog and acid deposition and acid rain
- Updated coverage of climate change and global warming

Chapter 16: Making Smart Health Care Choices

- New **Money & Health** box on health care spending accounts
- Revised **Points of View** box to reflect recent events in the debate over whether the government should facilitate health care
- Enhanced coverage of issues in today's health care system

Focus On: Understanding Complementary and Alternative Medicine

- Added section on additional forms of energy therapy, including qigong, Reiki, and therapeutic touch

Text Features and Learning Aids

Health: The Basics includes the following special features, all of which have been revised and improved upon for this edition:

- **Chapter learning outcomes** summarize the main competencies students will gain from each chapter and alert students to the key concepts. Focus On mini-chapters now also include learning outcomes.
- **Chapter-opener questions** capture students' attention and engage them in what they will be learning. Questions are repeated and answered in photo legends within the chapter.
- **New! Tech & Health** boxes cover the new technology innovations that can help students stay healthy.
- **New! Money & Health** boxes cover health topics from the financial perspective.
- **What Do You Think?** critical-thinking questions appear throughout the text, encouraging students to pause and reflect on material they have read.
- **Why Should I Care?** features present information on the effects poor health habits have on students in the here and now.
- **What's Working for You?** features call students' attention to the little things they are already doing to improve their health.
- **Assess Yourself** boxes help students evaluate their health behaviors. The **Your Plan for Change** section within each box provides students with targeted suggestions for ways to implement change.
- **Skills for Behavior Change** boxes focus on practical strategies that students can use to improve health or reduce their risks from negative health behaviors.
- **Points of View** boxes present viewpoints on a controversial health issue and ask students *Where Do You Stand?* questions, encouraging them to critically evaluate the information and consider their own opinions.
- **Health Headlines** boxes highlight new discoveries and research, as well as interesting trends in the health field.
- **Student Health Today** boxes focus attention on specific health and wellness issues that relate to today's college students.
- **Health in a Diverse World** boxes expand discussion of health topics to diverse groups within the United States and around the world.
- **Be Healthy, Be Green** boxes offer information on how health topics relate to environmental concerns and suggest ways for students to be both healthy and environmentally friendly.
- A **running glossary** in the margins defines terms where students first encounter them, emphasizing and supporting understanding of material.
- The sections at the ends of chapters focus on student application: **Summary** wraps up chapter content, **Pop Quiz** gives

multiple-choice questions, and **Think about It!** discussion questions encourage students to evaluate and apply new information. **Accessing Your Health on the Internet** and **References** (organized by chapter at the end of the book) offer more opportunities to explore areas of interest.

- A **Behavior Change Contract** for students to fill out is included at the back of the book.

Supplementary Materials

Available with *Health: The Basics*, 11th Edition, is a comprehensive set of ancillary materials designed to enhance learning and to facilitate teaching.

Instructor Supplements

A full resource package accompanies *Health: The Basics* to assist the instructor with classroom preparation and presentation.

- **MasteringHealth** (www.masteringhealthandnutrition.com). MasteringHealth coaches students through the toughest health topics. Instructors can assign engaging tools to help students visualize, practice, and understand crucial content, from the basics of health to the fundamentals of behavior change. **Coaching Activities** guide students through key health concepts with interactive mini-lessons, complete with hints and wrong-answer feedback. **Reading Quizzes** (20 questions per chapter) ensure students have completed the assigned reading before class. **ABC News Videos** stimulate classroom discussions and include multiple-choice questions with feedback for students. **NutriTools Coaching Activities** in the nutrition chapter allow students to combine and experiment with different food options and learn firsthand how to build healthier meals. **MP3s** relate to chapter content and come with multiple-choice questions that provide wrong-answer feedback. **Learning Catalytics** provides open-ended questions students can answer in real time. Through targeted assessments, Learning Catalytics helps students develop the critical thinking skills they need for lasting behavior change. For students, the **Study Area** is broken down into learning areas and includes videos, MP3s, practice quizzing, and much more.

- **ABC News Videos and Video Tutors.** Fifty-one new *ABC News* videos, each 5 to 10 minutes long, and 28 brand-new brief videos accessible via QR codes in the text help instructors stimulate critical discussion in the classroom. Videos are provided already linked within PowerPoint lectures and are also available separately in large-screen format with optional closed captioning on the Teaching Toolkit DVD and through MasteringHealth.

- **Instructor Resource and Support Manual.** This teaching tool provides chapter summaries and outlines and a step-by-step visual walk-through of all the resources available to instructors. It includes information on available PowerPoint lectures, integrated *ABC News* video discussion questions, tips and strategies for managing large classrooms, ideas for in-class activities, and suggestions for integrating MasteringHealth and MyDietAnalysis into your classroom activities and homework assignments.

- **Test Bank.** The Test Bank incorporates Bloom's Taxonomy, or the higher order of learning, to help instructors create exams that encourage students to think analytically and critically, rather than simply to regurgitate information. Test Bank questions are tagged to global and book-specific student learning outcomes.

Student Supplements

- **The Study Area of MasteringHealth** is organized by learning areas. *Read It* houses the Pearson eText, with which users can create notes, highlight text in different colors, create bookmarks, zoom, click hyperlinked words for definitions, and change page view. Pearson eText also links to associated media files. *See It* includes 51 *ABC News* videos on important health topics and the key concepts of each chapter. *Hear It* contains MP3 Study Tutor files and audio case studies. *Do It* contains critical-thinking questions and Web links. *Review It* contains study quizzes for each chapter. *Live It* will help jump-start students' behavior-change projects with assessments and resources to plan change; students can fill out a Behavior Change Contract, journal and log behaviors, and prepare a reflection piece.

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Acknowledgments

It is hard for me to believe that *Health: The Basics* is in its 11th edition! Who would have envisioned the evolution of these health texts even a decade ago? With the nearly limitless resources of the Internet, social networking sites, instantaneous access to national databases for statistics, myriads of interesting videos, and late-breaking news reports, there is a media blitz of information to communicate with students. Each step along the way in planning, developing, and translating that information to students and instructors requires a tremendous amount of work from many dedicated people, and I cannot help but think how fortunate I have been to work with the gifted publishing professionals at Pearson. Through time constraints, decision making, and computer meltdowns, this group handled every issue, every obstacle with patience, professionalism, and painstaking attention to detail. From this author's perspective, the personnel personify four key aspects of what it takes to be successful in the publishing world: (1) drive and motivation; (2) commitment to excellence; (3) a vibrant, youthful, forward-thinking and enthusiastic approach; and (4) personalities that motivate an author to continually strive to produce market-leading texts.

In particular, credit goes to the associate editor on this edition, Erin Schnair. Having worked with several outstanding editors over the years, I always wonder if a "new" editor will be as outstanding as the previous one. In this case, Erin's transition to this book was seamless and at the same level of excellence as her fantastic predecessors. I found her to be terrific to work with, highly organized, and thoughtful, and under her guidance, the book has continued to improve. Susan Malloy, the editorial manager for this book, provided overall guidance and expertise to bringing this book to fruition. I have a long history of working with Susan, and she is among the absolute *best* in her field. Marilyn Freedman and Nic Albert used their terrific editorial skills in fine-tuning the diverse chapters of the text. They did amazing work suggesting organizational changes, doing comparative reviews, and merging content and updates with new information and ideas, as well as checking sources for currency and accuracy. A special thanks to them for their behind the scenes efforts! Clearly, I have been very fortunate in having such creative, outstanding individuals leading the editorial direction on my textbooks and an outstanding group of assistants who handle the many details of publishing a textbook. You are fantastic, and your work is much appreciated! Further praise and thanks go to the highly skilled and hard-working, creative, and charismatic Executive Editor Sandra Lindelof, who has helped to catapult this book into a competitive twenty-first century. From searching out and procuring cutting-edge technology to meet the demands of an increasingly savvy student to having her finger on the pulse of what instructors and students need in their classrooms today, Sandy

has consistently been a key figure in moving the college/university health text to the next level.

Although these individuals were key contributors to the finished work, there were many other people who worked on this revision of *Health: The Basics*. In particular, I would like to thank Production Project Managers Megan Power and Michael Penne, who skillfully navigated production pitfalls and kept the book moving along. Thanks also to Angela Urquhart, Andrea Archer, and the hard-working staff at Thistle Hill and Cenveo who put everything together to make a polished finished product. The talented artists at Precision Graphics deserve many thanks for making our innovative art program a reality. Gary Hespenheide and his staff at Hespenheide Design worked wonders in bumping up the look and feel of the interior design, and his striking cover is a thing of beauty. Julia Akpan, Content Producer, put together our most innovative and comprehensive media package yet. Additional thanks go to the rest of the team at Pearson, especially Assistant Editor Briana Verdugo, Editorial Assistant Tu-Anh Dang-Tran, and Director of Development Barbara Yien.

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Many colleagues, students, and staff members have provided the feedback, reviews, extra time, assistance, and encouragement that have helped me meet the rigorous demands of publishing this book over the years. Whether acting as reviewers, generating new ideas, providing expert commentary, or revising chapters, each of these professionals has added his or her skills to our collective endeavor.

I would like to thank specific contributors to chapters in this edition. In order to make a book like this happen on a relatively short timeline, the talents of many specialists in the field must be combined. Whether contributing creative skills in writing, envisioning areas that will be critical to the current and future health needs of students, using their experiences to make topics come alive for students, or utilizing their professional expertise to

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Reviewers for the 11th Edition

With each new edition of *Health: The Basics*, we have built on the combined expertise of many colleagues throughout the country who are dedicated to the education and behavioral changes of students. We thank the many reviewers who have made such valuable contributions to the past nine editions of *Health: The Basics*. For the 11th edition, reviewers who have helped us continue this tradition of excellence include Ari Fisher (Louisiana State University), Tiffany Fuller (North Carolina Agricultural and Technical State University), Michele Hamm (Mesa Community College), Steve Hartman (Citrus College), David Hey (Cal Poly), Jim Ledrick (Grand Valley State University), Donna McGill-Cameron (Woodland Community College), Dana Sherman (Ozarks Technical Community College), Cynthia Smith (Central Piedmont Community College), Cody Trefethen (Palomar College), Glenda Warren (University of the Cumberland), and the Pearson Campus Ambassadors.

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Many thanks to all!
Rebecca J. Donatelle, PhD

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Rebecca Donatelle is a Professor Emeritus in Public Health at Oregon State University, having served as the department chair, coordinator of the Public Health Promotion and Education Programs, and faculty member and researcher in the College of Health and Human Sciences. She has a doctorate degree in community health/health education, a master of science degree in health education, and a bachelor of science degree with majors in both health/physical education and English. Over the years, she

has taught thousands of undergraduate and graduate students in a wide range of health promotion and behavior areas, including courses such as Personal Health, Violence and Public Health, Prevention of Chronic and Infectious Diseases, Health Behaviors, Women's Health, and Health and Aging. Her main research and teaching focus has been on the factors that increase risk for chronic diseases and the use of incentives and social supports in developing behavioral interventions for high-risk populations. She has received several awards for teaching and mentoring students from a wide range of health-related disciplines.

Accessing Your Health

1

LEARNING OUTCOMES

- * Describe the immediate and long-term rewards of healthy behaviors and the effects that your health choices may have on others.
- * Compare and contrast the medical model of health and the public health model, and discuss the six dimensions of health and wellness.
- * Identify the determinants of health and explain how they influence the health of individuals and communities. Identify several personal factors that influence your health and classify them as modifiable or nonmodifiable.
- * Compare and contrast the health belief model, the social cognitive model, and the trans-theoretical model of behavior change. Identify your own current risk behaviors, the factors that influence those behaviors, and the strategies you can use to change them.



28

How are *health* and *quality of life* related?



29

Why should I care about health conditions in other places?



39

How can I stay motivated to improve my health habits?



43

How do other people influence my health behaviors?

Got health? That may sound like a simple question, but health is a process, not something we just “get.” People who are healthy in their forties, fifties, sixties, and beyond aren’t just lucky, wealthy, or the beneficiaries of hardy genes. In most cases, those who thrive in later years prioritized their health early on. You’ve probably heard from your parents and grandparents that your college years are some of the best of your life. Here the canvas is hung upon which you will paint the story of your life. Whether your story is filled with good health, productive careers, special relationships, and fulfillment of goals is influenced by the health choices you make—beginning right now.

Why Health, Why Now?

In addition to our desire to improve our own health, constant messages via social media, websites, e-mail, television, phone, and other media remind us of health challenges facing the world, the nation, our communities, and our campuses. In the twenty-first century, your health is connected not only to the people with whom you directly interact and the environments in which you spend time,

but also to people you’ve never met and to the well-being of the entire planet.

How does what you do today influence you and those around you? Let’s take a look at how your actions and inactions matter.

Choosing Health Now Has Immediate Benefits

Almost everyone knows that overeating leads to weight gain and that drinking and driving increases the risk of motor vehicle accidents. But other choices you make every day may have subtler influences on your well-being in ways you’re not aware of. For instance, did you know that the amount of sleep you get each night could affect your weight, your ability to ward off colds, your mood, and even your driving? What’s more, inadequate sleep is one of the most commonly reported impediments to academic success (Figure 1.1). Similarly, drinking alcohol reduces your immediate health and your academic performance. It also sharply increases your risk of unintentional injuries. This is especially significant because, for people between the ages of 15 and 44, unintentional injury—whether due to alcohol abuse or any other factor—is the leading cause of death (Table 1.1).

It isn’t an exaggeration to say that healthy choices have immediate benefits. When you’re well nourished, fit, rested, and free from the influence of nicotine, alcohol, and other drugs, you’re more likely to avoid illness, succeed in school, maintain supportive relationships, participate in meaningful work and community activities, and enjoy your leisure time.

Choosing Health Now Leads to Many Long-Term Rewards

The choices you make today are like seeds: Planting good seeds means you’re more likely to enjoy the fruits of a longer and healthier life. In contrast, poor choices increase the likelihood of a shorter life, as well as persistent illness, addiction, and other limitations on quality of life. In other words, successful aging begins now.

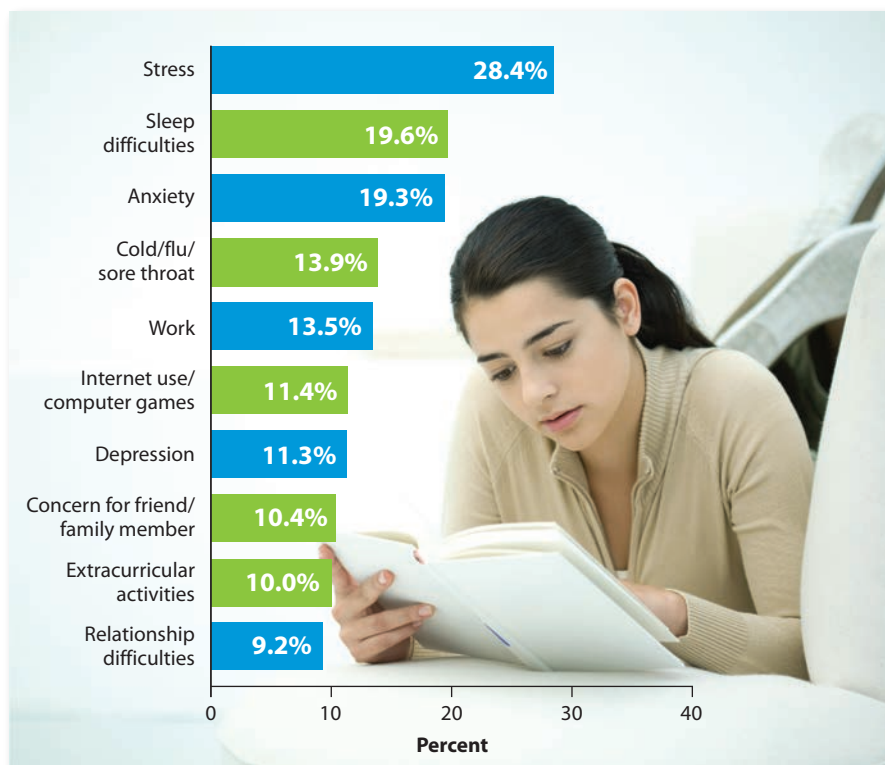


FIGURE 1.1 Top Ten Reported Impediments to Academic Performance—Past 12 Months

In a recent survey by the National College Health Association, students indicated that stress, poor sleep, anxiety, and recurrent minor illnesses, among other things, had prevented them from performing at their academic best.

Source: Data from American College Health Association, *American College Health Association—National College Health Assessment II (ACHA-NCHA II) Reference Group Executive Summary*, Fall 2012 (Hanover, MD: American College Health Association, 2013). Available at www.acha-ncha.org

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T A B L E

Leading Causes of Death in the United States, Preliminary Data for 2011, Overall and by Age Group

All Ages	Number of Deaths
Diseases of the heart	596,339
Malignant neoplasms (cancer)	575,313
Chronic lower respiratory diseases	143,382
Cerebrovascular diseases	128,931
Accidents (unintentional injuries)	122,777
Aged 15–24	
Accidents (unintentional injuries)	12,032
Self-harm (suicide)	4,688
Assault (homicide)	4,508
Malignant neoplasms	1,609
Diseases of the heart	948
Aged 25–44	
Accidents (unintentional injuries)	29,424
Malignant neoplasms (cancer)	15,210
Diseases of the heart	13,479
Self-harm (suicide)	12,269
Assault (homicide)	6,639
Aged 45–64	
Malignant neoplasms (cancer)	161,072
Diseases of the heart	105,013
Accidents (unintentional injuries)	34,621
Chronic lower respiratory diseases	19,646
Chronic liver disease and cirrhosis	19,551
Aged 65+	
Diseases of the heart	476,220
Malignant neoplasms (cancer)	396,126
Chronic lower respiratory diseases	122,381
Cerebrovascular diseases	109,393
Alzheimer's disease	83,746

Source: Data from D. L. Hovert and J. Q. Xu, "Deaths: Preliminary Data for 2011, Table 7," *National Vital Statistics Report* 61, no. 6 (Hyattsville, MD: National Center for Health Statistics, 2012), www.cdc.gov

Personal Choices Influence Life Expectancy

According to current **mortality rates**—which reflect the proportion of deaths within a population—the average **life expectancy** at birth in the United States is projected to be 78.7 years for a child born in 2011.¹ In other words, we can expect that American infants born today will live to an average age of over 78 years—much longer than the 47-year life expectancy for people born in the early 1900s. That's because life expectancy a century ago was largely determined by our susceptibility to infectious diseases. Before the advent of vaccines, antibiotics, and infection control, over a

third of all deaths were from infections, and over 40 percent of those deaths were in children under the age of 5.² Even among adults, infectious diseases such as tuberculosis and pneumonia were the leading causes of death, and widespread epidemics of infectious diseases such as influenza and polio crossed national boundaries to kill millions.

With the development of vaccines and antibiotics, as well as other public health successes, life expectancy increased dramatically as premature deaths from infectious diseases decreased. As a result, the leading cause of death shifted to **chronic diseases** such as heart disease, cerebrovascular disease (which leads to strokes), cancer, and diabetes. At the same time, advances in diagnostic technologies, heart and brain surgery, radiation and other cancer treatments, as well as new medications, continued the trend of increasing life expectancy into the twenty-first century.

Unfortunately, life expectancy in the United States is several years below that of many other nations, and some researchers believe that our increasing prevalence of extreme obesity may be limiting our gains in life expectancy.³ A study led by researchers from the Harvard School of Public Health and the University of Washington indicates that smoking, high blood pressure, elevated blood glucose, and overweight/obesity together reduce life expectancy in the United States by 4.9 years in men and 4.1 years in women.⁴

Personal Choices Influence Healthy Life Expectancy

Another benefit of healthful choices is that they increase your **healthy life expectancy**; that is, the number

“Why Should I Care?”

Just as health problems can create impediments to success in life, improving your health can lead to better academic performance, greater career success, more relationship satisfaction, and more joy in living.



mortality rate The proportion of deaths to population.

life expectancy Expected number of years of life remaining at a given age, such as at birth.

chronic disease A disease that typically begins slowly, progresses, and persists, with a variety of signs and symptoms that can be treated but not cured by medication.

healthy life expectancy Expected number of years of full health remaining at a given age, such as at birth.

65 & 67

are the **healthy life expectancy** ages of men and women, respectively, in the United States, while the average total life expectancy ages are 76.3 and 81.1.

See It! Videos

Why are women experiencing a decline in life expectancy? Watch **Women's Life Expectancy in Decline** in the Study Area of **MasteringHealth™**

of years of full health you enjoy, without disability, chronic pain, or significant illness. One dimension of healthy life expectancy is **health-related quality of life (HRQoL)**, a concept that goes beyond mortality rates

and life expectancy and focuses on the impact health status has on physical, mental, emotional, and social function. Closely related to this is **well-being**, which assesses the positive aspects of a person's life, such as positive emotions and life satisfaction.⁵

Choosing Health Now Benefits Others

Our personal health choices don't affect only our own lives. They affect the lives of others because they contribute to global health or the global burden of disease. For example, we've said that overeating and inadequate physical activity contribute to obesity. But obesity isn't a problem only for the individual. Along with its associated health problems, obesity burdens the U.S. health care system and the U.S. economy overall. According to a report from the Brookings Institution, "By some estimates, nearly 21 percent of current medical spending in the U.S. is now obesity related." A significant proportion of these medical costs is paid by Medicaid and Medicare, and one recent analysis concluded that total Medicaid spending would be 12 percent lower in the absence of obesity.⁶ In addition, obesity costs the public indirectly. These indirect costs include, for example, reduced tax revenues because of income lost from absenteeism and premature death, increased disability payments because of an inability to remain in the workforce, and increased health insurance rates as claims rise for treatment of obesity itself as well as its associated diseases.

Smoking, excessive consumption of alcohol, and use of illegal drugs also place an economic burden on our communities and our society. Moreover, these behaviors have social and emotional consequences, such as for people who lose loved ones in their prime. The burden on caregivers who must sacrifice personally to take care of those who are disabled by diseases is another part of this problem.

At the root is an ethical question causing considerable debate: To what extent should the public be held accountable for an individual's poor choices? Should we require individuals to somehow pay for their poor choices? Of course, in some cases, we already do. We tax cigarettes and alcohol, 17 states tax candy at a higher rate than other groceries, and 4 states

health-related quality of life (HRQoL) A multidimensional concept that focuses on the impact health status has on physical, mental, emotional, and social function and quality of life overall.

well-being An assessment of the positive aspects of a person's life, such as positive emotions and life satisfaction.

health The ever-changing process of achieving individual potential in the physical, social, emotional, mental, spiritual, and environmental dimensions.



How are health and quality of life related?

Health-related quality of life is a person's or group's perceived physical and mental health over time. A person with an illness or disability doesn't necessarily have a low quality of life. The Hawaiian surfer Bethany Hamilton lost her arm in a shark attack while surfing at the age of 13, but that hasn't prevented her from achieving her goals and a high quality of life. She returned to surfing just 1 month after the attack and has since competed around the world as a professional surfer.

are currently taxing sweetened soft drinks, which have been blamed for rising obesity rates.⁷ On the other side of the debate are those who argue that smoking, drinking, and eating certain foods are addictions that require treatment, not punishment, and that obesity is a product of a society of excess. Should individuals be punished for choices that society influenced and the media promoted? And are seemingly personal choices that influence health always entirely within our personal control? Before we explore these questions further, it's essential to understand what health actually is.

What Is Health?

Although we use the word **health** almost unconsciously, few people understand the broad scope of the word or how it has evolved over the years.

Models of Health

Over the centuries, different ideals—or models—of human health have dominated. Our current model of health has broadened from a focus on the individual physical body to an understanding of health as a reflection not only of ourselves and our mental and emotional well-being, but also the health and safety of our communities.

Medical Model Prior to the twentieth century, if you made it to your fiftieth birthday, you were regarded as lucky. Survivors were believed to be of hearty, healthy

stock—having what we might refer to today as “good genes.”

Throughout these years, perceptions of health were dominated by the **medical model**, in which health status focused primarily on the individual and his or her tissues and organs. The surest way to improve health was to cure the individual’s disease, either with medication to treat the disease-causing agent or through surgery to remove the diseased body part. Thus, government resources focused on initiatives that led to treatment, rather than prevention, of disease.

Public Health Model Not until the early decades of the 1900s did researchers begin to recognize that entire populations of poor people, particularly those living in certain locations, had higher health risks due to things over which they had little control: polluted water and air, a low-quality diet, poor housing, and unsafe work settings. Slowly, a new, more progressive way of approaching health problems began to evolve, known as the **ecological or public health model**, which viewed diseases and other negative health events as a result of an individual’s interaction with his or her social and physical environment.

Recognition of the public health model enabled health officials to prioritize hygiene and sanitation. Communities took action to control contaminants in water, for example, by building



Today, health and wellness include a positive, proactive attitude about living life to the fullest.

adequate sewers, and to control burning and other forms of air pollution. In the early 1900s, colleges began offering courses in health and hygiene, the predecessors of the course you are taking today. And over time, public health officials began to recognize and address many other forces affecting human health, including hazardous work conditions; negative influences in the home and social environment; abuse of drugs

medical model A view of health that focuses primarily on the individual and a biological or diseased organ perspective.

ecological or public health model A view of health in which diseases and other negative health events are seen as a result of an individual’s interaction with his or her social and physical environment.

disease prevention Actions or behaviors designed to keep people from getting sick or injured.

and alcohol; stress; mental health; diet; sedentary lifestyle; and cost, quality, and access to health care.

By the 1940s progressive thinkers began calling for even more policies, programs, and services to improve individual health and that of the population as a whole. In other words, their focus shifted from treatment of individual illness to **disease prevention** by reducing or eliminating the factors that cause illness and injury. For example, vaccination programs became widespread, pharmaceutical companies began to manufacture antibiotics to treat bacterial threats, laws governing occupational safety reduced injuries and deaths among American workers, and seatbelts and other vehicle safety standards were mandated. Much of this progress was initiated by a 1947 World Health Organization (WHO) proposal that defined health as more than just a physical state. WHO leaders proposed a more progressive definition of health: “Health is the state of complete physical, mental, and social well-being, not just the absence of disease or infirmity.”⁸ This new definition definitively rejected the old medical model.



Why should I care about health conditions in other places?

Unhealthy conditions in one location can have far-reaching impacts on the economy and on health. When the 2011 earthquake and tsunami in Japan caused devastation in that country, productivity losses were felt as far away as Europe. The natural disaster damaged the Fukushima Daiichi nuclear power plant, spreading fear of nuclear fallout throughout the world.



The Ten Greatest Public Health Achievements of the 20th Century

- Vaccinations
- Motor vehicle safety
- Workplace safety
- Control of infectious diseases
- Reduction in cardiovascular disease (CVD) and stroke deaths
- Safe and healthy foods
- Maternal and infant care
- Family planning
- Fluoridated drinking water
- Recognition of tobacco as a health hazard

FIGURE 1.2 The Top Ten Public Health Achievements of the Twentieth Century

Source: Data from Centers for Disease Control and Prevention, “Ten Great Public Health Achievements—United States, 1900–1999,” *Morbidity and Mortality Weekly Report* 48, no. 12 (April 1999).

health promotion The combined educational, organizational, procedural, environmental, social, and financial supports that help individuals and groups reduce negative health behaviors and that promote and maintain positive change.

risk behaviors Actions that increase susceptibility to negative health outcomes.

wellness The dynamic, ever-changing process of trying to achieve one’s potential in each of six interrelated dimensions based on one’s unique limitations and strengths.

Alongside prevention, the public health model began to emphasize **health promotion**; that is, policies and programs that promote and help maintain behaviors known to support good health. Health-promotion programs identify people who are engaging in **risk behaviors** (those that increase susceptibility to negative health outcomes) and motivate them to change their actions by changing aspects of the larger environment to increase their chances of success.

Over the past 100 years, numerous public policies and services, technological advances, and individual actions have worked together to improve our overall health status.

Figure 1.2 lists the ten greatest public health achievements of the twentieth century.

Wellness and the Dimensions of Health

In 1968, biologist, environmentalist, and philosopher René Dubos proposed an even broader definition of health. In his Pulitzer Prize-winning book, *So Human an Animal*, Dubos defined health as “a quality of life, involving social, emotional, mental, spiritual, and biological fitness on the part of the individual, which results from adaptations to the environment.”⁹ This concept of adaptability, or the ability to cope successfully with life’s ups and downs, became a key element in our overall understanding of health.

Eventually the word **wellness** entered the popular vocabulary. This word enlarged Dubos’s definition of health by recognizing levels—or gradations—of health within each category (**Figure 1.3**). To achieve *high-level wellness*, a person must move progressively higher on a continuum of positive health indicators. Those who fail to achieve these levels may slip into ill health, disease, declining quality of life, and premature disability/death.

Today, the words *health* and *wellness* are often used interchangeably to mean the dynamic, ever-changing process of trying to achieve one’s potential in each of six interrelated dimensions (**Figure 1.4**):

- **Physical health.** This dimension includes characteristics such as body size and shape, sensory acuity and responsiveness, susceptibility to disease and disorders, body functioning, physical fitness, and recuperative abilities. Newer definitions of physical health also include our ability to perform normal *activities of daily living (ADL)*, or those tasks that are necessary to normal existence in society, such as getting up out of a chair or writing a check.
- **Social health.** The ability to have a broad social network and maintain satisfying interpersonal relationships with friends, family members, and partners is a key part of overall wellness. This implies being able to give and receive love and to be nurturing and supportive in social interactions in a variety of settings. Successfully interacting and communicating with others, adapting to various social situations, and other daily behaviors are all part of social health.
- **Intellectual health.** The ability to think clearly, reason objectively, analyze critically, and use brainpower effectively

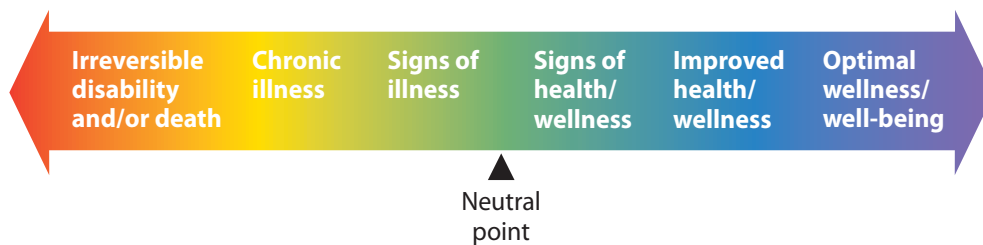


FIGURE 1.3 The Wellness Continuum