The background of the cover is a photograph of a person standing on a mountain peak, looking out over a vast landscape under a sunset sky. The person is in silhouette, wearing a backpack and shorts. The sky is a mix of orange, yellow, and pink, with the sun low on the horizon. The mountains in the distance are silhouetted against the bright sky.

# HEALTH AND WELLNESS

GORDON EDLIN  
ERIC GOLANTY  
KELLI McCORMACK BROWN

FIFTH EDITION

**Fifth Edition**

# *Health and Wellness*

**Gordon E. Smith**

*John A. Burns School of Medicine  
University of Hawaii*

**Eric Colantoni**

*Las Positas College*

**Kelli McCormack Brown**

*Department of Health Sciences  
Illinois State University*



**Jones and Bartlett Publishers**  
*Sudbury, Massachusetts*  
**Boston      London      Singapore**



*Editorial, Sales, and Customer Service Offices*

Jones and Bartlett Publishers  
40 Tall Pine Drive  
Sudbury, MA 01776  
508-443-5000  
800-832-0034

Jones and Bartlett Publishers International  
Barb House, Barb Mews  
London W6 7PA  
England

Copyright © 1996, 1992, 1988, 1985, 1982 by Jones and Bartlett Publishers, Inc.

All rights reserved. No part of the material protected by this copyright notice may be reproduced or utilized in any form, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without written permission from the copyright owner.

**Library of Congress Cataloging-in-Publication Data**

Edlin, Gordon

Health and wellness / Gordon Edlin, Eric Golanty, Kelli McCormack Brown.—5th ed.

p. cm.

Includes bibliographical references and index.

ISBN 0-86720-994-1

1. Health. 2. Holistic medicine. I. Golanty, Eric. II. Brown, Kelli McCormack. III. Title.

RA776.E24 1996

613--dc20

95-51780

CIP

*Chief Executive Officer:* Clayton E. Jones  
*Chief Operating Officer:* Donald W. Jones, Jr.  
*Vice President, Production and Manufacturing:* Paula Carroll  
*Vice President and Editor-in-Chief:* David P. Geggis  
*Director of Sales and Marketing:* Rob McCarry  
*Marketing Manager:* Anne T. King  
*Acquisitions Editor:* Joseph E. Burns  
*Assistant Production Manager/Coordination:* Judy Songdahl

*Senior Manufacturing Buyer:* Dana L. Cerrito  
*Design:* Glenna Collett  
*Editorial Production:* Books By Design, Inc.  
*Illustrations:* JAK Graphics  
*Typesetting:* The Clarinda Company  
*Color Separation:* The Clarinda Company  
*Printing and Binding:* Banta Company  
*Cover Printing:* Henry N. Sawyer Company

**Photo Credits:**

**Part One:** p. 1, top left; p. 2, bachmann/Stock, Boston; p. 4, Frank Priegue/International Stock; p. 13, Lawrence Migdale/Photo Researchers, Inc.; p. 1, top right, p. 20, Bob Daemmrich/Stock, Boston; p. 30, Richard Hutchings/Photo Researchers, Inc.; p. 32, Asian Art Museum of San Francisco; p. 1, bottom left, p. 36, Bob Daemmrich/Stock, Boston; p. 49, Oliver Strewe/Tony Stone Images; p. 54, J. Gerard Smith/Photo Researchers, Inc.; p. 1, bottom right, p. 56, Joe Nettis/Photo Researchers, Inc.; p. 58, Richard Hutchings/Photo Researchers, Inc.; p. 67, Jeff Isaac Greenberg/Photo Researchers, Inc.; p. 70, Richard Hutchings/Photo Researchers, Inc. **Part Two:** p. 75, top right, p. 76, Anthony Blake/Tony Stone Worldwide; p. 79, Stanley Rowin/The Picture Cube; p. 94, Henryk T. Kaiser/The Picture Cube; p. 101, © Jen Morin; p. 103, © Jen Morin; p. 75, left, p. 108, Lori Adamski Peek/Tony Stone Images; p. 114, Frank Siteman/The Picture Cube; p. 117, Penny Tweedie/Tony Stone Images; p. 120, A. Perlstein/Jerrican/Photo Researchers, Inc.; p. 122, © Jen Morin; p. 75, bottom, p. 128, Lori Adamski Peek/Tony Stone Images; p. 131, Lawrence Migdale/Stock, Boston; p. 134, David Weintraub/Stock, Boston; p. 137, Porterfield Chickering/Photo Researchers, Inc.; p. 142, Will and Deni McIntyre/Photo

Researchers, Inc. **Part Three:** p. 145, top left, p. 146, Richard Hutchings/Photo Researchers, Inc.; p. 149, Frank Siteman/Tony Stone Images; p. 150, Phyllis Picardi/The Picture Cube; p. 165, Bruce Ayres/Tony Stone Images; p. 169, Bruce Ayres/Tony Stone Images; p. 145, top right, p. 172, James Davis/International Stock; p. 178, Roger Tully/Tony Stone Images; p. 181, Barry Elz/International Stock; p. 184, David Young Wolff/Tony Stone Worldwide, Ltd.; p. 190, bottom left, Laurence Monneret/Tony Stone Images; p. 198, Charles Thatcher/Tony Stone Images; p. 210, Jeff Greenberg/Photo Researchers, Inc.; p. 216, Robert W. Ginn/The Picture Cube; p. 145, bottom right, p. 218, © Steven Ferry; p. 225, top, Biophoto Associates/Photo Researchers, Inc.; p. 225, bottom, CDC/Science Source/Photo Researchers, Inc.; p. 226, Dr. P. Marazzi/Science Photo Library/Photo Researchers, Inc. **Part Four:** p. 237, top left, p. 238, J. Griffin/The Image Works, Inc.; p. 240, left, NIBSC Science Photo Library/Photo Researchers, Inc.; p. 240, right, A. B. Dowsett/Science Photo Library/Photo Researchers, Inc.; p. 244, Roger Tully/Tony Stone Images; *Credits continued on p. 496 which constitutes a continuation of the copyright page.*

Printed in the United States of America

00 99 98 97 96      10 9 8 7 6 5 4 3 2 1

# Preface

When writing the first edition of *Health and Wellness*, we had no idea that our book would be received so warmly and enthusiastically by hundreds of instructors and thousands of students. We were particularly gratified by the many students who conveyed to us that *Health and Wellness* made a profound impact on their well-being. To all the students and instructors who chose our text, we say thank you very much. Your support prodded us to undertake a major revision of *Health and Wellness*; we hope it is a markedly improved view of personal health and self-responsibility that will be useful and practical for the turn-of-the-century college student of all ages.

Improvements and refinements have been made in each edition of *Health and Wellness*, but the underlying principles of the book have remained the same. We are committed to providing accurate information regarding health and wellness, focusing on self-responsibility. In this fifth edition of *Health and Wellness* we take a new look at health and wellness issues; we have incorporated eight new features, added two new chapters, and combined several chapters, resulting in 24 revised chapters. We are excited about this edition and hope you are, too!

We feel very fortunate that what began as a two-person collaboration 20 years ago has now evolved into a triad of authors. Kelli McCormack Brown is a Certified Health Education Specialist who has taught over 10 years at the university level. She has received numerous awards for excellence in teaching, research, and service. Her teaching and writing experience are a valuable addition to the team.

## CONTENT AND ORGANIZATION OF HEALTH AND WELLNESS

For this edition several chapters were consolidated and two *new* chapters were developed, one on violence and one on preventing accidents. The theme of taking responsibility for your health is addressed early on and

reinforced throughout the book. Each chapter has been carefully reviewed, revised, and updated. New pedagogical features provide information on newly emerging issues, and challenge the student to promote and maintain a healthy life-style.

*Health and Wellness, Fifth Edition*, is organized into seven parts with no more than four chapters per part, which we believe makes the book more learning-friendly.

- Part One, **Achieving Wellness**, provides the basic definitions and concepts of health and wellness that are the foundation of the book. This part emphasizes the importance of stress management and positive emotional health to one's overall health and well-being.
- Part Two, **Eating and Exercising toward a Healthy Life-style**, presents the basics of good health: good nutritional habits, weight control, and physical fitness as a way of life. All three chapters emphasize personal responsibility.
- Part Three, **Building Healthy Relationships**, addresses both the physical and social aspects of sexuality, including healthy intimate relationships, pregnancy and parenthood, fertility methods, abortion, sexually transmitted diseases, and AIDS.
- Part Four, **Understanding and Preventing Disease**, reinforces the importance of self-responsibility and knowledge, and how the two can help prevent infectious diseases, cancer, cardiovascular diseases, and AIDS. A unique chapter on birth defects and genetic diseases provides insight into increasingly diagnosable human genetic disorders.
- Part Five, **Explaining Drug Use and Abuse**, provides an understanding of three health habits that can be controlled by each of us. Self-responsibility includes wisely using over-the-counter drugs, prescription drugs, and alcohol, as well as eliminating cigarette and tobacco use.
- Part Six, **Making Healthy Choices**, facilitates making healthy decisions regarding health care. Under-

standing alternative choices to medical care will help guide you through sometimes difficult and confusing decisions. This part has a new chapter addressing accident prevention, including motor vehicle safety and workplace safety.

Part Seven, **Overcoming Obstacles**, provides insight into how to age with health and vigor, and how environmental issues affect each of us personally. This part has a new chapter on violence, dealing with acquaintance rape, child abuse, and firearm violence.

# NEW FEATURES OF THE FIFTH EDITION: A VISUAL WALK-THROUGH

This edition of *Health and Wellness* expands greatly on features of the previous editions. A popular feature has been the boxes, which provide interesting, up-to-date information on current topics in greater depth than in the text itself. In this edition, over 80 percent of the boxes are new.

Nine new features call attention to critical health-related issues and challenge students to reflect on their life-styles or health-related decisions they have made or will make.

**Managing Stress:** Written by Brian Luke Seaward, *Managing Stress* boxes facilitate coping with stressful situations, using a variety of relaxation methods and other mind-body techniques. Examples include:

- The Two-Minute Stress Reducer (page 54)
- Stress and Your Diet (page 93)
- Walking in Balance (page 132)

**Wellness Guide:** Provides “how to” health information. Many offer tips, techniques, or steps toward prevention and self-responsibility. Examples include:

- Ways to Prevent Skin Cancer (page 275)
- How to Interpret Blood Cholesterol and Lipid Measurements (page 302)

## Managing Stress Stress and Your Diet

Believe it or not, some see eating as a technique to reduce the symptoms of stress. The feeling of food in the stomach sends a message to the brain to calm down. Yet there are certain foods that can send your stress levels off the charts and most people are completely unaware of them. Moreover, repeated bouts of stress can deplete necessary nutrients, vitamins, and minerals creating a cycle of poor health. Here are some examples:

### Sugar

An excess of simple sugars tends to deplete vitamin stores, particularly the vitamin B-complex (niacin, thiamine, riboflavin, and B<sub>12</sub>). White sugar and even bleached flour flushed of its vitamin and mineral content require additional B-complex vitamins to be metabolized. These and other vitamins are crucial for optimal function of the central nervous system. A depletion of the B-complex vitamin may manifest in signs of fatigue, anxiety, and irritability. In addition, increased amounts of ingested simple sugars can cause major fluctuations in blood glucose levels resulting in pronounced fatigue, headaches, and general irritability.

sugar **galactose**. When lactose is digested, the glucose and galactose are separated and the galactose is converted to glucose. Whereas almost all babies have the capacity to digest lactose (it is the major sugar in mother's milk), many older children and adults, particularly of black and Asian heritage, are not able to digest it because they lack a required enzyme **lactase**, which splits lactose into glucose and galactose. Lack of this enzyme causes gastrointestinal upset, diarrhea, and, occasionally, severe illness when lactase-deficient people consume dairy products. These individuals can supplement their diets with products containing lactase (e.g., Lactaid) or by eating yogurt, cheese, and other dairy products in which the lactose has been broken down by the fermentation process. Because dairy products are a

### Caffeine

Food sources that trigger the sympathetic nervous system are referred to as **sympathomimetic agents**. There is a powerful substance in caffeine called **methylated xanthine**. This chemical stimulant with amphetamine-like characteristics triggers in the sympathetic nervous system a heightened state of alertness and arousal; it can also stimulate the release of several stress hormones. The result is a intensified alertness which makes the individual more susceptible to perceived stress. Caffeine can be found in many foods, including chocolate, coffee, tea, and several other beverages. Current estimates suggest that the average American consumes three 6-ounce cups of coffee per day. A 6-ounce cup of caffeinated coffee contains approximately 250 milligrams of caffeine, half the amount necessary to provoke adverse arousal of the central nervous system.

### Salt

It seems that Americans have a love affair with salt. Many people add salt to their food without even tasting it. High sodium intake is associated with high blood pressure, as sodium acts to increase water retention. As water volume increases in a

closed system, blood pressure increases. If this condition may contribute to hypertension.

### Vitamin and Mineral

Chronic stress can deplete vitamins necessary for metabolism and for the response. The synthesis requires vitamins. The response activates several that mobilize and metabolize and carbohydrates requires specifically vitamins C, B-complex. Inadequate these vitamins may also affect alertness, and promote and insomnia. Stress associated with depletion and the inability of body to absorb calcium, so stage for the development of osteoporosis, the demineralization of bone tissue. Vitamin status is a controversial and diet usually provide adequate supply of vitamins. However, the majority do not maintain a balanced diet. Vitamin supplements for individuals prone to stress.

major source of calcium in the North American diet is dairy products such as milk, yogurt, and cheese. Dark leafy green vegetables (e.g., broccoli and spinach) are also good sources of calcium.

**Complex Carbohydrates** These come from grains (wheat, rice, corn, oats, barley, and rye), legumes (peas, beans), the leaves, stems, and roots of plants, and some animal tissues. There are two main types of complex carbohydrates: **starch**, which is digestible, and **fiber**, which is not digestible.

Starch consists of many glucose molecules joined together. It is a way organisms store glucose for energy. In plants, starch is usually contained within seeds, pods, or roots. Wheat flour



## Health Update

### Radioactivity from Chernobyl Nuclear Power Plant Causes Cancer in People Living Nearby

On April 26, 1986, a Russian nuclear power plant in the Ukrainian city of Chernobyl broke down, releasing a large amount of radioactivity. The fallout from the radioactivity was greatest in the surrounding region, but was carried by winds across northern Europe where high levels of radioactivity were recorded.

One of the radioactive elements that was released was radioactive iodine, which is concentrated in the thyroid.

Children are particularly sensitive to radioactive iodine ingested in food and water. In 1986, only four cases of thyroid cancer were reported among thousands of chil-

dren living in areas surrounding Chernobyl. By 1991, the number of thyroid cancer cases in children had risen to 55, and is expected to continue to rise. It is too early to detect increases in other forms of cancer among people who were exposed to this radioactive fallout, but increased cancer rates are anticipated.

have not been adequately tested. Of the thousands of chemical substances that have been tested, many have been found to be carcinogenic and should be avoided if at all possible. These carcinogens include cigarette smoke, pesticides, asbestos, heavy metals (lead, mercury, cadmium), benzene, and nitrosamines (Table 13.2).

Despite the long list of carcinogenic substances, some scientists and public health officials argue that tobacco is the only substance of consequence with respect to the numbers of cancers caused. While the argument has some basis, it is of small consolation to those who acquire cancer from exposure, often without their knowledge, to other carcinogenic substances.

In some industries, workers suffer from cancers that

almost never arise in the general population. For example, **mesothelioma** is a rare form of lung cancer that only occurs among persons exposed to asbestos fibers. Long-term exposure to the heavy metals beryllium and cadmium increases workers' risk of prostate cancer. Workers exposed to vinyl chloride, the starting material for polyvinyl chloride (PVC) pipes and other products, develop a rare form of liver cancer not found in the general public. Fortunately, with current regulations we do not see high numbers of these types of cancer.

Although the total number of cancers attributable to industrial chemicals is relatively small compared to the risks of tobacco smoke and dietary factors, the fact remains that cancers caused by industrial hazards are

*I don't want to achieve immortality through my work. I want to achieve immortality by not dying.*  
Woody Allen



## Wellness Guide

### Ways to Prevent Skin Cancer

Sunscreen products contain chemicals that provide sun protective factors (SPFs) to varying degrees. The SPF value indicates how much additional time you can expose yourself to the sun without burning. For example, if someone usually burns after 15 minutes exposure to intense sun, a sunscreen product with an SPF of 10 should give protection for ten times as long or 150 minutes of exposure; 30 SPF means thirty times more protection. Generally, SPF values above 30 are not considered useful because the cream or lotion

wears off before its usefulness is exhausted. The effectiveness of a sunscreen product depends on the SPF number, how waterproof the product is, and how effectively it covers the skin.

The SPF number refers only to protection from UVB, so exposure to UVA still can harm the skin. The primary ingredients in sunscreen products are para-amino-benzoic acid (PABA) or Padimate-O, both of which absorb only UVB. Chemicals such as avobenzone or oxybenzone protect against UVA, so look for

sunscreen products that contain these substances or that claim to protect against both forms of UV. Fear of skin cancer is driving many people to use chemical tanning products marketed in the form of lotions, creams, gels, and mousses. This tan-in-a-bottle industry has grown from sales of about \$5 million in 1988 to more than \$86 million in 1993. Clearly, looking tan is still a desirable goal for many people. These products may be safe, but they have not been in use long enough to know.

- Determining If You Are at Risk for Bearing a Genetically Disabled Child (page 320)

**Exploring Your Health:** Contains self-assessments that students can use to evaluate their health status in a particular area. Examples include:

- How Well Are You? (page 6)
- How Does Your Diet Rate for Variety? (page 82)
- How Intimate Are You? (page 166)
- Choosing the Best Contraceptive for You (page 210)

**Controversy in Health:** Introduces controversial issues in health where there are no clear-cut answers. This feature presents both sides of the issue, then asks the reader critical thinking questions requiring the student to choose and support a perspective. Examples include:

- Food Irradiation: Toxic to Bacteria, Safe for Humans (page 102)
- Lifting the Gay Ban in the Military (page 152)



- Should Students Be Tested for HIV? (page 231)
- Should People Be Tested for Inherited Cancer-Susceptibility Genes? (page 282)

**Case Study:** Presents scenarios ending with questions that help students understand how certain issues affect people in the world today. These questions present the issue and ask students "How would you react in a comparable situation?" Examples include:



- Beginning Your Fitness Routine (page 130)
- An HIV Ethical Dilemma (page 233)
- Driving under the Influence of Alcohol (DUI) (page 374)
- Contaminated Water in Milwaukee Sickens 400,000 Persons (page 473)

**Global Wellness:** Explores the multicultural aspects of health and wellness. Examples include:



- Yin and Yang: Finding Balance (page 22)

### Exploring Your Health

#### How Does Your Diet Rate for Variety?

A varied diet is a healthful diet. How would you describe the variety in your food choices?

	Seldom or never	1 or 2 times a week	3 to 4 times a week	Almost daily
<b>How often do you eat:</b>				
1. At least six servings of breads, cereals, rice, crackers, pasta, or other foods made from grains (a serving is one slice of bread or a half cup cereal, rice, etc.) per day?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Foods made from whole grains?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Three different kinds of vegetables per day?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Cooked dry beans or peas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. A dark-green vegetable, such as spinach or broccoli?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Two kinds of fruit or fruit juice per day?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Three servings of milk, yogurt, or cheese per day?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Two servings of lean meat, poultry, fish, or alternates, such as eggs, dry beans, or nuts per day?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Count the number of check marks in each column.**

To eat a varied diet, I will: \_\_\_\_\_

---

#### My Eating Habits: Some Clues to Calories?

Calories come from food—all kinds of food. Do you get enough? Or more than you need? Think about your eating patterns—and why you eat what you eat. Check all the answers that describe your eating patterns.

**What do I usually eat?**

☐ A varied and balanced diet.

☐ A diet with only moderate amounts of fats and sugars.

☐ Deep-fat-fried and breaded foods.

☐ "Extras," such as salad dressings, potato toppings, spreads, sauces, and gravies.

☐ Sweets and rich desserts, such as candies, cakes, and pies.

☐ Snack foods high in fat and sodium, such as chips and other "munchies."

☐ Soft drinks.

**When do I usually eat?**

☐ At mealtime.

☐ While studying.

☐ While preparing meals or clearing the table.

☐ When spending time with friends.

☐ While watching TV or participating in other activities.

☐ Anytime.

**Where do I usually eat?**

☐ At home at the kitchen or dining room.

☐ In the school cafeteria.

☐ In fast-food places.

☐ In front of the TV or while studying.

☐ Wherever I happen to be when I'm hungry.

**Why do I usually eat?**

☐ It's time to eat.

☐ I'm hungry.

☐ Foods look tempting.

☐ Everyone else is eating.

☐ Food will get thrown away if I don't.

☐ I'm bored or frustrated.

**Changes I want to make:**

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

Source: U.S. Department of Agriculture, *Dietary Guidelines and Your Health: Health Educator's Guide to Nutrition* (Washington, D.C.: U.S. Government Printing Office, 1992).

### Controversy in Health

#### Lifting the Gay Ban in the Military

The military is presumed to attract a relatively homogenous group of young men and women regarding cultural values and perspectives. The boundaries of acceptable behavior and values are more narrowly drawn in military compared to civilian life because of the more uniform social composition of the military.

Such views are reflected in the Department of Defense policy that bans homosexuals from military service. According to the current department directive, as revised on February 12, 1986:

Homosexuality is incompatible with military service . . . The presence of such members adversely affects the ability of the Military Services to maintain discipline, good order, and morale; to foster mutual trust and confidence among service-members; to ensure the integrity of the system of rank and command; to facilitate assignment of worldwide deployment of service members who must frequently live and work under close conditions affording minimal privacy; to recruit and retain members of the Military Services; to maintain public acceptability of military services; and to prevent breaches of security.

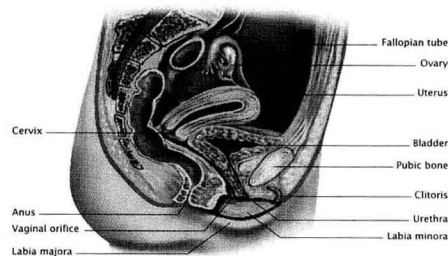
Today, the military has instituted a "Don't ask, Don't tell" informal policy. This informal, unwritten policy basically implies that the military won't ask your sexual orientation and you won't tell them your sexual orientation. If you decide to tell the military that your orientation is homosexual, the military will take action to remove you from service. This policy continues to stigmatize the gay community and denies full rights to gays who serve in the military.

**STUDENT REFLECTIONS**

- Do you believe gays and lesbians should be allowed to join the military services? Why or why not?
- Should the Department of Defense's official policy be revised to protect the rights of gay military personnel? Why or why not?

well as sex hormones, which control the development of the female body type, maintain normal female sexual physiology, and help regulate the course of a normal pregnancy. The fallopian tubes gather and transport the ova that are released from the ovaries (about one each

month). The two fallopian tubes connect to the uterus, an organ about the size of a woman's fist, which is situated just behind the pelvic bone and the bladder (Figure 8.4). The uterus is part of the passageway for sperm as they move from the vagina to the fallopian tubes to effect



**FIGURE 8.3 A Cross-section of the Female Sexual-Reproductive System**



- Overwork Causes Death in Japan (page 49)
- HIV Cases Worldwide (page 228)
- Can Beliefs Influence Disease Susceptibility? (page 440)

**Healthy People 2000:** In 1991 the Surgeon General's office issued a report titled *Healthy People 2000*, which identified health promotion and disease prevention goals and objectives for all Americans for the year 2000. These objectives are annotated and included throughout the text. The annotations help put each objective in a relevant context for the student.

**Health Update:** Discusses current and relevant personal health trends and issues. Examples include:



- Youth and Tobacco Advertising (page 352)
- Take a Walk on the Safe Side (page 419)
- First Alzheimer's Drug Approved (page 438)
- "Fill You Full of Lead" Is No Joke (page 471)

**Learning Objectives:** The learning objectives, which begin each chapter, are a study guide for students, help-

ing them focus on the most important concepts of each chapter.

## Familiar Features

This edition of *Health and Wellness* has retained several features from previous editions with appropriate updates.

**Health in Review** is a brief review of the chapter's most important concepts. The reviews correspond closely with the chapter learning objectives.

**Annotated Suggested Readings** follow the References and provide students with resources for further study.

**Epigrams**, a favorite feature in past editions, continue to highlight each chapter with both humorous and serious quotes regarding specific health issues.

**Key terms** are defined on the page on which they are highlighted, as well as in the glossary at the end of the book.

**References** are found at the end of each chapter. As the chapters were updated, so were the References for continuity.

with stress, and fight off colds and other infections by boosting the immune system's defenses. Heart disease, obesity, and high blood pressure may not be an overriding concern today; however, your exercise and fitness behaviors today can affect your health in the future.

### WHAT IS PHYSICAL ACTIVITY?

The health club and exercise equipment industries and the advertising and TV infomercials that support them can easily lead people to think that exercising for health requires considerable time, energy, money, and commitment. These investments can seem so overwhelming that some people forego exercising altogether.

Fortunately, physical activity does not require special equipment or spending a lot of money. Physical activity is anything you do when you are not sitting or lying down. Besides jogging, swimming, cycling, and aerobic dancing, physical activity includes yoga, tai chi ch'uan, martial arts training, gardening, and walking. For instance, regular walking strengthens muscles, increases aerobic capacity, clears and quiets the mind, reduces stress, expends calories, and is virtually injury-free. Other than appropriate shoes, walking requires no special clothing, equipment, or money, and it can be worked into a busy schedule. Instead of eating at breaks at work or between classes, you can walk to a job or class. Walk up stairs instead of using elevators. If you

need to drive, park and walk the last ten minutes of your trip. Aerobic capacity can be increased by walking briskly enough to increase the heart rate during uphill or up stairs.

Once a commitment is made to an exercise program, other healthy behaviors often follow, such as eating habits and a reduction in heavy alcohol consumption. Such programs also may lessen stress, increase stress-reducing behaviors such as eating, overeating, or drug consumption are reduced.

If none of these points convinces you to exercise, think of it as setting a goal for yourself. Many people feel overwhelmed by the demands of school, job, and family. Just a few hours a week to exercise can give you time to relax, reflect, and indulge your imagination.

### Physiological Benefits of Physical Activity

Research shows that only moderate, not extensive exercise is sufficient for good health, for both women and men, the chance of heart disease, cancer, and several other diseases for individuals with sedentary life-styles is reduced. For example, a daily brisk walk of 30 to 60 minutes, five times a week also has been shown to improve health. In fact, high levels of exercise reduce the risk of injuries.



Frank is a graduate student who took up jogging about a year ago because so many of his friends were runners, including his fiancée, Susan. Although he wasn't overweight, Frank nevertheless thought he could stand to have firmer muscles, especially in his thighs and abdomen. He began to run with Susan on the college track several times a week.

At first, Frank found running to be very hard. He had never before been physically active. In fact, he had always hated sports because of bad experiences in high school physical education classes. Also, he smoked about a pack of cigarettes a day, which severely limited his breathing ability. On the first day he could barely run one lap of the track—one-fourth of a mile—and without Susan's encouragement he probably would have quit right then. She agreed that

one lap wasn't very far, but she reminded him it would take time to undo the years of inactivity, and that he should have patience. He decided to give his new routine time to work. The goal of running one mile by the end of the month's running.

### STUDENT REFLECTIONS

- What barriers was Frank up against at the start of his running, and how did he overcome them?
- Have you recently set an exercising goal for yourself? If so, what is it? How difficult has it been to reach this goal? How have you overcome the obstacles in your way of reaching this goal?

### FEAR OF AGING AND DYING

Nobody wants to grow old or die. When we are young, we never think about becoming old, nor can we imagine what it is like not to be strong, vigorous, and active. With few exceptions, the media in the United States and elsewhere portray aging as a time of life beset with sickness, inactivity, and slow deterioration of physical and mental functions. These negative views of aging are used to sell products and do not truthfully portray the experiences of most older Americans.

Fear of aging and death may lead to anxiety and stress that may hasten aging processes. A few of the many fears that people associate with aging are illness, poverty, being attacked or victimized, falling and being injured while alone, loss of responsibility for one's life, memory loss, and sexual inadequacy. Most of these fears are unfounded, but may turn out to be self-fulfilling prophecies. However, chronological age often does not correlate with biological age. Some people lose very little in biological functions as they get older, and look and act young almost until the time of death. Generally, older people have about half as many acute illnesses as younger people, although they do suffer more from chronic health problems.



### Can Beliefs Influence Disease Susceptibility?

Just how powerful are thoughts and feelings in influencing health? Can beliefs affect the duration of a person's life? A recent survey of the causes and ages of death among Chinese-Americans shows that strongly held beliefs can affect the cause of death and how long a person lives (Phillips et al., 1993).

In Chinese astrology a particular phase—metal, water, wood, fire, or earth—is associated with the year of a person's birth. Also associated with each phase is susceptibility to particular diseases (see table below).

Association between phases of a person's birth year with susceptibility to certain diseases according to Chinese astrology and medicine. Persons born in years corresponding to a particular phase are more susceptible to certain diseases.

Birth year ends in	Phase	Susceptibility to
0 or 1	Metal	Pulmonary diseases
2 or 3	Water	Kidney disease
4 or 5	Wood	Cirrhosis of liver
6 or 7	Fire	Heart attack
8 or 9	Earth	Cancer, diabetes, ulcers

### APPROACHING DEATH WITH DIGNITY

Death can strike without warning in the form of an accident or an unexpected heart attack. However, for most people thoughts of death do not occupy their daily lives until old age. People in their 20s are too busy living to think about dying. But people in their 70s and 80s realize the inevitability of death and may modify their lives and affairs accordingly. Younger people who acquire a life-threatening disease such as cancer also are forced to face the possibility of dying.

Most people would prefer to die peacefully in their sleep after living a full, satisfying life. Some may be fortunate to die like this but others may have to endure considerable pain and suffering. In addition to wondering how they are going to die, people usually wonder what will happen to them after death. Christianity provides a heaven where one's "soul" can exist in the grace of God for all eternity. Buddhism embraces a belief in reincarnation; after a series of deaths and rebirths a person can attain "Buddhahood," a perpetual state of enlightenment.

Whatever one's fears or beliefs about death, understanding the process of dying and the preparations that can be made for it can help ensure experiencing a death with peace and dignity (Table 22.2).

**Appendices** include relaxation exercises and stress management techniques, a list of health agencies that can provide useful information to students, and a list of health and wellness sites on the Internet.

## Teaching and Learning Aids

Available with *Health and Wellness, Fifth Edition*, is a comprehensive package of supplementary materials that enhance both teaching and learning. The following ancillaries are complimentary:

**Instructor's Guide:** The *Instructor's Guide* includes for each chapter: 1) suggestions for incorporating student activities and assessment from the student workbook, *Managing Your Health*; 2) suggestions for incorporating the *Health and Wellness Journal* by Brian Luke Seaward; 3) tips for integrating the new boxed materials into the classroom; 4) learning objectives; 5) a list of key terms; and 6) an outline of the chapter.

**Transparencies:** Full set of transparencies to complement the text material, carefully selected by the authors.

**Test Bank:** Revised comprehensive test-item file. Contains true/false and multiple choice test questions and answers.

**Computerized Test Bank:** A computerized testing software package containing the revised test questions written specifically for *Health and Wellness, Fifth Edition*, available for IBM, IBM-compatible, and Macintosh computers.

**Berkeley Wellness Newsletter, University of California:** This highly respected newsletter is offered to all adopters of *Health and Wellness, Fifth Edition*. The *Wellness Newsletter* is an excellent resource for instructors in providing up-to-date health information.

**Health and Wellness On-Line:** Health information provided through the information superhighway. Each adopter of the book receives updates via electronic mail. Those without on-line access can receive a hard copy.

**Healthy People 2000: A Midcourse Review and 1995 Revisions:** This report will demonstrate how far we have come as a nation in achieving the disease prevention and health promotion goals mapped out at the beginning of this decade. This document can be easily cross-referenced to the Healthy People 2000 goals listed throughout the text. An excellent resource for the instructor.

**Additional Adoption Options:** Also available are a variety of support items that will enhance the teaching and learning experiences with *Health and Wellness, Fifth Edition*. The following ancillaries are available on a complimentary basis to all qualified adopters depending upon annual course enrollment. The instructor will have an opportunity to select from the following supplement options:

**Videotapes:** As an adopter of *Health and Wellness, Fifth Edition*, you will be able to select videotapes on various health-related topics. These videotapes are selected to enhance teaching and learning. Jones and Bartlett offers 32 nationally acclaimed, broadcast-quality videos to accompany *Health and Wellness, Fifth Edition*. Carefully chosen by the authors, these videos correspond to topics in the text to provide flexibility.

**Health Risk Appraisal Software:** Developed by the CDC, this computerized instrument evaluates complex information about an individual's family history, health status, and life-style. Students receive a risk assessment based on their personal data.

**Instructor's Teaching Package for Stress Management:** Written by the National Safety Council. *Stress Management* addresses the relationship between stress and the work environment, and provides the latest, most comprehensive approach to identifying and controlling stress. Many college students who work part time will find this material relevant to their lives. The package consists of an *Instructor's Resource Manual*, *Video*, and *Instructor's Slide Set* to accompany the student text on stress management.

**Managing Stress: A Creative Journal:** Contains over 40 thought-provoking exercises that stimulate students to write creatively on how to increase awareness of the causes of stress and to develop effective coping skills.

**Stress Reduction Audio Tape:** Designed to teach students stress reduction techniques such as meditation, autogenic training, progressive relaxation, and mental imagery.

**First Aid Pocket Guide:** Provides students with easy-to-follow, step-by-step instructions that tell exactly what emergency care to administer for virtually all injuries or sudden illnesses.

The following books are integrated and cross-referenced with the *Instructor's Manual* and are sold separately:

**Managing Your Health: Assessment and Action:** Written by David Birch, Indiana University, and Michael Cleary, Slippery Rock University. This workbook includes activities designed to involve students in personal health promotion. The activities focus on self-assessment, issues examination, and skill development. The *Health and Wellness, Fifth Edition Instructor's Guide* refers to this workbook to facilitate teaching and learning.

**Health and Wellness Journal:** Written by Brian Luke Seaward, University of Northern Colorado. One of the best ways to integrate the material from the text is to personally engage in the process of the concepts highlighted. Journal writing allows the student to explore his or her own thoughts on specific health attitudes and behavioral changes. The *Instructor's Guide* refers to the journal to facilitate behavioral change and self-awareness.



For more detailed information on all of the ancillaries, please contact the marketing department or your Jones and Bartlett representative at 1-800-832-0034.

## A NOTE OF THANKS

Throughout all five editions of *Health and Wellness*, many people have contributed support and guidance. This book has benefited greatly from their comments, opinions, thoughtful critiques, expert knowledge, and constructive suggestions. We are most appreciative for their participation in this project.

We would specifically like to thank several people who assisted with the fifth edition of *Health and Wellness*: Debra Connelly, Andrew Wise, Nichelle Goetsch, and Janice Morris.

## Fifth Edition Reviewers

David Birch, Ph.D., Indiana University  
Donald L. Calitri, Ed.D., Eastern Kentucky University  
Judy C. Drolet, Ph.D., Southern Illinois University at Carbondale  
Philip Duryea, Ph.D., University of New Mexico  
Mal Goldsmith, Ph.D., Southern Illinois University at Edwardsville  
Allan C. Henderson, Dr. Ph.H., California State University, Long Beach  
William M. Kane, Ph.D., University of New Mexico  
Mark Kittleson, Ph.D., Southern Illinois University at Carbondale  
Beverly Saxton Mahoney, Ph.D., The Pennsylvania State University  
Roberta Ogletree, HSD, Southern Illinois University at Carbondale  
Larry K. Olsen, Dr. P.H., The Pennsylvania State University  
Bruce Ragon, Ph.D., Indiana University  
Janet S. Reis, Ph.D., University of Illinois at Urbana-Champaign  
Brian Luke Seaward, Ph.D., Inspiration Unlimited, Longmont, Colorado  
David R. Stronck, Ph.D., California State University, Hayward  
Bryan Williams, Ph.D., University of Arkansas  
Carol A. Wilson, Ph.D., University of Nevada at Las Vegas  
Richard W. Wilson, D.H.Sc., Western Kentucky University

## Fifth Edition Specialty Area Reviewers

### Chapter 6 Managing Your Weight

Nicole B. Gegel, M.S., Employee Fitness Director, Illinois State University

### Chapter 7 Achieving Physical Fitness

Nicole B. Gegel, M.S., Employee Fitness Director, Illinois State University

### Chapter 8 Developing Healthy Intimate and Sexual Relationships

Susan Sprecher, Ph.D., Department of Sociology, Illinois State University

### Chapter 9 Understanding Pregnancy and Parenthood

M. Dawn Larsen, Ph.D., Department of Health Sciences, Mankato State University

### Chapter 10 Choosing a Fertility Control Method

Patti Alsader, B.S., Youth and Community Education Coordinator, Planned Parenthood of West Central Illinois

### Chapter 12 Reducing the Risk of Infectious Disease: Knowledge Encourages Prevention

M. Dawn Larsen, Ph.D., Department of Health Sciences, Mankato State University

### Chapter 13 Cancer: Understanding Risks and Measures of Prevention

Geoffrey M. Cooper, Ph.D., Dana Farber Cancer Institute, Harvard Medical School

### Chapter 14 Cardiovascular Diseases: Understanding Risks and Measures of Prevention

Dwayne Reed, M.D., Ph.D., Buck Center for Research in Aging, Novato, CA

### Chapter 16 Using Drugs Responsibly

### Chapter 17 Eliminating Cigarette and Tobacco Use

### Chapter 18 Using Alcohol Responsibly

Marion Micke, Ph.D., Department of Health Sciences, Illinois State University

### Chapter 24 Working toward a Healthy Environment

Anne Nadakavukaren, M.S., Department of Health Sciences, Illinois State University

This book could not have been published without the efforts of the staff at Jones and Bartlett Publishing Company and the *Health and Wellness* team: Joseph E. Burns, Vice President and Publisher of the health science program; Maxine Effenson Chuck, Editorial Specialist; Judy Songdahl, Assistant Production Manager; Tina

Samaha, Copy Editor; Nancy Benjamin of Books By Design, Editorial Production Coordinator; and Suzanne Crane, Editorial Assistant. To all we express our appreciation.

Finally, this book could not have been written with-

out the understanding and support of family and friends. Last but not least is the great amount we have learned from our students as we have explored health and wellness issues together.

*Gordon Edlin*

John A. Burns School of Medicine  
University of Hawaii  
Honolulu, Hawaii 96822

*Eric Golanty*

Las Positas College  
Livermore, California 94550

*Kelli McCormack Brown*

Department of Health Sciences  
Illinois State University  
Normal, Illinois 61790

# Brief Contents

## **Part One** **Achieving Wellness 1**

- 1 Achieving Personal Health 2
- 2 Promoting Wellness through Mind-Body Communications 20
- 3 Managing Stress: Mind over Body 36
- 4 Maintaining Emotional Wellness 56

## **Part Two** **Eating and Exercising toward a Healthy Life-style 75**

- 5 Choosing a Nutritious Diet 76
- 6 Managing Your Weight 108
- 7 Achieving Physical Fitness 128

## **Part Three** **Building Healthy Relationships 145**

- 8 Developing Healthy Intimate and Sexual Relationships 146
- 9 Understanding Pregnancy and Parenthood 172
- 10 Choosing a Fertility Control Method 190
- 11 Protecting against Sexually Transmitted Diseases and AIDS 218

## **Part Four** **Understanding and Preventing Disease 237**

- 12 Reducing the Risk of Infectious Disease: Knowledge Encourages Prevention 238
- 13 Cancer: Understanding Risks and Measures of Prevention 266

- 14 Cardiovascular Diseases: Understanding Risks and Measures of Prevention 288
- 15 Understanding Birth Defects and Genetic Diseases 310

## **Part Five** **Explaining Drug Use and Abuse 325**

- 16 Using Drugs Responsibly 326
- 17 Eliminating Cigarette and Tobacco Use 346
- 18 Using Alcohol Responsibly 366

## **Part Six** **Making Healthy Choices 383**

- 19 Making Decisions about Health Care 384
- 20 Exploring Alternative Medicines 398
- 21 Preventing Accidents: What You Can Do 410

## **Part Seven** **Overcoming Obstacles 429**

- 22 Understanding Aging and Dying 430
- 23 Violence in Our Society 446
- 24 Working toward a Healthy Environment 462

**APPENDIX A** Relaxation Exercises and Stress Management Techniques 481

**APPENDIX B** Calendar of Events and Health Organizations 489

**APPENDIX C** Health and Wellness on the Internet 493

Glossary 497

Index 509



# Contents

Feature Contents	xv
Preface	xix

## part one

### *Achieving Wellness* 1

#### **1 Achieving Personal Health** 2

Defining Health and Wellness	4
Models of Health	4
The Medical Model	4
The Environmental Model	5
The Holistic Model	8
Dimensions of Health and Wellness	9
Health as Positive Wellness	10
The Philosophy of Holistic Health	11
Taking Responsibility for Your Health	13
The Year 2000 National Health Objectives	14
Health in Review	18
References	18
Suggested Readings	19

#### **2 Promoting Wellness through Mind-Body Communications** 20

Homeostasis and Health	22
The Autonomic Nervous System	23
Hormones	25
The Mind Can Create Illness and Health	26
Exam Anxiety	27
The Placebo Effect	27
Drugs or Placebos: Which Are More Effective?	28
Why Placebos Often Work	28
Faith and Healing	29

Hypnosis and Healing	29
Meditation for Relaxation	31
The Power of Suggestion	31
Image Visualization	33
Health in Review	34
References	34
Suggested Readings	35

#### **3 Managing Stress: Mind over Body** 36

The Definition of Stress	38
Stress Contributes to Illness	38
Stress Activators	39
Life Changes as Activators	40
Daily Events as Activators	42
Reactions to Activators	47
The Consequences of Our Reactions	48
The Fight-or-Flight Response	48
The General Adaptation Syndrome	50
Stress and the Immune System	51
Managing Stress	51
Health in Review	55
References	55
Suggested Readings	55

#### **4 Maintaining Emotional Wellness** 56

Understanding Thoughts and Emotions	59
Developing Coping Strategies	60

Defense Mechanisms	60
Facilitating Coping	61
Coping with Fears and Phobias	62
Depression	63
Suicide	65
Anger	67
Sleep and Dreams	67
Sleep Problems	69

Insomnia	69
Parasomnias	70
Understanding Our Dreams	70
Interpreting Your Dreams	72
Mental Disorders	72
Health in Review	73
References	74
Suggested Readings	74

## part two

# *Eating and Exercising toward a Healthy Life-style 75*

## **5 Choosing a Nutritious Diet 76**

Dietary Guidelines for Eating Right	77
The Food Guide Pyramid	79
Reading the "New" Food Label	83
The Functions of Food in Your Body	86
Body Structure and Function	86
Energy for Life	87
The Composition of Food	89
Proteins	89
Carbohydrates	92
Lipids (Fats)	95
Vitamins	96
Minerals	98
Phytochemicals	100
Water	100
Evaluating Dietary Supplements	100
Food Additives	101
Preservatives	101
Artificial Sweeteners	102
Fast Food	102
Vegetarian Diets	103
How Nutrition Affects Your Brain	105
Health in Review	106
References	107
Suggested Readings	107

## **6 Managing Your Weight 108**

Defining Overweight and Obesity	110
Measuring Your Weight	112
Regulating Body Weight	115
Set-Point Theory	116
Fat-Cell Theory	116

Dietary-Fat Theory	116
Genetics	116
Recreational Eating	116
Losing Weight Sensibly	117
Weight-Control Fads and Fallacies	119
Body Wraps	120
Diet Pills and Aids	121
Diet Programs	121
Fasting	122
Body Image Issues	123
Eating Disorders	123
Anorexia Nervosa	124
Bulimia	125
It's in Your Hands	126
Health in Review	126
References	126
Suggested Readings	127

## **7 Achieving Physical Fitness 128**

What Is Physical Activity?	130
Physiological Benefits of Physical Activity	130
Psychological Benefits of Physical Activity	131
Fitness and Conditioning	134
Aerobic Training	135
Strength Training	136
Making Physical Activity a Priority	137
Choosing the Right Exercise	138
Types of Beneficial Exercises	140
Walking and Health	143
Exercise Abuse	143
Health in Review	144
References	144
Suggested Readings	144

## **8 Developing Healthy Intimate and Sexual Relationships 146**

<b>Defining Sex and Sexuality</b>	147
Sex	147
Sexuality	148
<b>Gender Identity and Gender</b>	
Role	148
<b>Defining Sexual Orientation</b>	149
<b>Sexual Biology</b>	150
Female Sexual Anatomy	151
The Menstrual Cycle	154
Menopause	155
Male Sexual Anatomy	155
<b>Sexual Arousal and Response</b>	157
Sexual Arousal	158
The Sexual Response Cycle	159
Orgasm	160
Masturbation	160
Sexual Abstinence	160
Sexual Difficulties	161
<b>Developing Positive Sexual Relationships</b>	162
What Intimacy Is	163
The Life Cycle of Intimate Relationships	163
Developing Intimacy	164
Establishing Commitment	164
Endings	165
<b>Communicating in Intimate Relationships</b>	167
Sending Clear Messages	167
Effective Listening	168
Expressing Anger Constructively	170
<b>Health in Review</b>	170
<b>References</b>	170
<b>Suggested Readings</b>	171

## **9 Understanding Pregnancy and Parenthood 172**

<b>Choosing Whether or Not to Be a Parent</b>	174
<b>Becoming Pregnant</b>	174
<b>Pregnancy</b>	175
The Developing Fetus	176
<b>Childbirth</b>	177
Learning about Childbirth	177
Childbirth Preparation	178
Options for Controlling Discomfort	178
Giving Birth	180
<b>The Postpartum Transition</b>	181
Breast-Feeding	181

<b>Health Habits during Pregnancy</b>	182
Nutrition	183
Prenatal Care	184
Physical Activity and Exercise	184
Emotional Well-Being	185
<b>Infertility</b>	185
Obstacles to Fertility	187
Enhancing Fertility Options	187
<b>Health in Review</b>	188
<b>References</b>	188
<b>Suggested Readings</b>	189

## **10 Choosing a Fertility Control Method 190**

<b>Fertility Control</b>	191
<b>Withdrawal</b>	194
<b>Hormonal Contraception: The Pill</b>	194
Combination Birth Control Pills	194
Progestin-Only Contraceptives	197
<b>The Intrauterine Device</b>	198
<b>Barrier Methods</b>	199
The Diaphragm	199
The Cervical Cap	199
The Contraceptive Sponge	200
Vaginal Spermicides	201
Male and Female Condoms	201
<b>Fertility Awareness Methods</b>	203
Calendar Rhythm	206
The Temperature Method	206
The Mucus Method	206
Chemical Methods	207
Douching	207
<b>Sterilization</b>	207
Male Sterilization	207
Female Sterilization	208
<b>Choosing the Right Birth Control Method</b>	208
<b>Responsibility for Birth Control</b>	209
<b>Discussing Birth Control Responsibility</b>	211
<b>Why Sexually Active People Do Not Use Birth Control</b>	211
<b>Emergency Contraception</b>	212
<b>Abortion</b>	212
Surgical Methods of Abortion	213
Chemical Methods of Abortion	213
The Legality and Morality of Abortion	213
<b>Health in Review</b>	217
<b>References</b>	217
<b>Suggested Readings</b>	217



# **11 Protecting against Sexually Transmitted Diseases and AIDS** 218

## **Understanding Sexual Behavior** 220

- Multiple Sexual Partners 220
- False Sense of Safety 220
- Absence of Signs and Symptoms 220
- Untreated Conditions 220
- Impaired Judgment 220
- Lack of Immunity 221

## **Reactions to STDs** 221

## **Value Judgments** 221

## **Denial** 221

## **Common STDs** 222

- Trichomonas and Gardnerella 222

Chlamydia 222

Gonorrhea 224

Syphilis 224

Herpes 224

Sexually Transmitted Warts 226

Pubic Lice 226

Scabies 226

Acquired Immune Deficiency Syndrome (AIDS) 227

## **Preventing Sexually Transmitted Diseases** 231

Practicing Safer Sex 232

Effective Communication Skills 233

## **Health in Review** 235

## **References** 236

## **Suggested Readings** 236

part  
four

# *Understanding and Preventing Disease* 237

# **12 Reducing the Risk of Infectious Disease: Knowledge Encourages Prevention** 238

## **Recognizing Agents of Infectious Disease** 240

## **Reviewing the History of Infectious**

- Diseases 242
- Plague 242
- Yellow Fever 242
- Smallpox 242
- Other Epidemics 242
- Fighting Infectious Diseases 244

## **Understanding Antibiotics** 244

- Antibiotics Are Becoming Less Effective 245

## **Immunizations** 246

## **Recognizing Specific Infectious Diseases** 247

- Colds and Flu 248
- Lyme Disease 249
- Mononucleosis 250
- Ulcers 250

## **Hospital-Acquired Infections** 251

## **Preventing Infections** 251

## **Understanding the Immune System** 251

- The Lymphatic System 252
- How the Body Protects Itself 254

## **Understanding Allergies** 255

- Asthma 256
- Food Allergies 257

## **Recognition of "Self"** 258

- Autoimmune Diseases 258
- Organ Transplants 258
- Blood Transfusions and Rh Factors 260

## **AIDS and HIV** 260

AIDS and the Immune System 261

The AIDS Antibody Test 262

How Infectious Is HIV? 262

Vaccination against AIDS Infection 263

## **Chronic Fatigue Syndrome** 263

## **Health in Review** 264

## **References** 264

## **Suggested Readings** 265

# **13 Cancer: Understanding Risks and Measures of Prevention** 266

## **Understanding Cancer** 268

- Incidence of Various Cancers 268
- What Is Cancer? 268
- Most Cancers Are Not Inherited 270

## **Environmental Factors** 271

- Ionizing Radiation 272
- Tumor Viruses 274
- Chemical Carcinogens 274

## **Reducing Cancer Risk** 276

- Reducing Risk of Breast Cancer 276
- Reducing Risk of Testicular and Prostate Cancer 278
- Regulating Diet 278

## **Confronting Cancer** 280

- Cancer-Susceptibility Genes 280
- Seeking Cancer Treatments 282
- Coping with a Diagnosis of Cancer 283

## **Health in Review** 286

## **References** 286

## **Suggested Readings** 287

## **14 Cardiovascular Diseases: Understanding Risks and Measures of Prevention 288**

<b>Understanding Cardiovascular Diseases</b>	290
The Heart and Blood Vessels	290
Regulating Blood Flow	292
<b>Effects of Atherosclerosis</b>	294
Diagnosing a Heart Attack	295
Repairing Blocked Arteries	295
Stroke	297
<b>Risk Factors for Cardiovascular Disease</b>	298
Cholesterol	299
High Blood Pressure	302
Smoking Cigarettes	304
Stress	306
<b>Vitamins Help Prevent Heart Disease</b>	306
Vitamin E	306
Vitamin B	307
Vitamin C	307
<b>Health in Review</b>	308
<b>References</b>	309
<b>Suggested Readings</b>	309

## **15 Understanding Birth Defects and Genetic Diseases 310**

<b>Congenital Defects and Teratogens</b>	312
Thalidomide	313
DES	315
Accutane	315
Alcohol and Other Drugs	315
<b>Human Heredity</b>	316
Hereditary Diseases	316
Chromosomes	317
Genes	318
<b>Confronting Genetic Diseases</b>	319
Prenatal Testing	319
Genetic Counseling	320
Treating Hereditary Diseases	321
<b>Complex Diseases and Traits</b>	322
<b>Health in Review</b>	324
<b>References</b>	324
<b>Suggested Readings</b>	324

part  
five

## *Explaining Drug Use and Abuse 325*

## **16 Using Drugs Responsibly 326**

<b>What Is a Drug?</b>	328
How Drugs Work	328
Side Effects of Medication	328
Routes of Administration	328
Effectiveness of Drugs	328
<b>The Overmedicating of Americans</b>	331
<b>Preventing Drug Abuse</b>	333
Withdrawal Symptoms	334
Psychological Dependence	335
<b>Psychoactive Drugs</b>	335
<b>The Effects of Stimulants</b>	335
Cocaine	335
Amphetamines	337
Caffeine	338
<b>Depressants</b>	339
Opiates	339
Marijuana	340
Hallucinogens	341
Phencyclidine (PCP)	342
Inhalants	343
<b>Anabolic Steroids</b>	344
Characteristics and Use	344
Health Hazards	344
<b>Reducing Drug Use</b>	344

<b>Health in Review</b>	344
<b>References</b>	345
<b>Suggested Readings</b>	345

## **17 Eliminating Cigarette and Tobacco Use 346**

<b>Profile of Tobacco Use</b>	347
Tobacco Use Yesterday and Today	349
Tobacco Characteristics	349
<b>Physiological Effects of Tobacco</b>	350
<b>Smokeless Tobacco</b>	350
History of Smokeless Tobacco	350
Prevalence of Smokeless Tobacco Use	351
Health and Social Consequences	351
Reducing Smokeless Tobacco Use	353
<b>Smoking and Disease</b>	353
Lung Cancer	354
Bronchitis and Emphysema	355
Tobacco Smoke's Effect on Nonsmokers	357
<b>Why People Smoke</b>	358
<b>Learning to Quit Smoking</b>	359
<b>The War of Words</b>	362
<b>Health in Review</b>	363
<b>References</b>	364
<b>Suggested Readings</b>	364

## **18 Using Alcohol Responsibly** 366

History of Alcohol Use	368
Prevalence and Trends Regarding Drinking	368
Types of Drinking	369
Reasons for Drinking	369
Attitudes toward Drinking	370
Media's Influence on Alcohol Consumption	370
How Alcohol Affects the Body	370
Alcoholic Beverages' Composition	370
How Alcohol Is Absorbed, Excreted, and Metabolized	371
The Hangover	372
The Effects of Alcohol on Behavior	372

Sexual Behavior	373
Sexual Assaults	373
Other Effects of Alcohol	375
Long-term Effects	375
Fetal Alcohol Syndrome	376
Alcohol Abuse and Alcoholism	376
The Phases of Alcoholism	377
The Effects of Alcoholism on the Family	378
Children of Alcoholics	379
Seeking Help: Treatment Options	379
Responsible Drinking	381
Health in Review	381
References	382
Suggested Readings	382

### part six

## *Making Healthy Choices* 383

## **19 Making Decisions about Health Care** 384

Being a Wise Health Care Consumer	386
Selecting a Health Care Practitioner	387
Medical Doctors	387
Dentists	388
Podiatrists	388
Seeing the Doctor	388
Hospitals	390
Understanding Health Care Financing	390
Private Insurance	391
Health Maintenance Organizations (HMOs)	391
Preferred Provider Organizations (PPOs)	391
Federal Government Support: Medicare and Medicaid	392
Health Care Issues Today	393
Rising Health Care Costs	393
Inequities in Health Care	395
Health Care Reform	396
Health in Review	396
References	396
Suggested Readings	396

## **20 Exploring Alternative Medicines** 398

Defining Alternative Medicine	400
Homeopathy	401
Chiropractic	403

Osteopathy	404
Acupuncture	405
Herbal Medicine	406
Naturopathy	407
Choosing an Alternative Medicine	408
Health in Review	408
References	409
Suggested Readings	409

## **21 Preventing Accidents: What You Can Do** 410

Safety and Unintentional Injuries	411
Safety	411
Determinants of Safety	412
Unintentional Injury Analysis	415
Motor Vehicle Safety	415
Motorcycle Safety	416
Pedestrian Safety	418
Bicycle Safety	419
Home Safety	419
Falls	419
Poisonings	420
Drowning	421
Choking and Suffocation	422
Fires	423
Work Safety	423
First Aid and Emergencies	425
Taking Risks and Preventing Accidents	426
Health in Review	427
References	427
Suggested Readings	427