



EIGHTH
EDITION

*Core
Concepts
in Health*

Paul M. Insel • Walton T. Roth

EIGHTH
EDITION



Core Concepts in Health

Paul M. Insel

Walton T. Roth

Stanford University



Mayfield Publishing Company
Mountain View, California
London • Toronto

Copyright © 1998 by Mayfield Publishing Company. All rights reserved. No portion of this book may be reproduced in any form or by any means without written permission of the publisher.

Library of Congress Cataloging-in-Publication Data

Core concepts in health/ [compiled by] Paul M. Insel,
Walton T. Roth.

—8th ed.

p. cm.

Includes index.

ISBN 1-55934-914-X

I. Health. I. Insel, Paul M. II. Roth, Walton T.

RA776.C83 1997b

613—dc21

97-11273

CIP

Manufactured in the United States of America

10 9 8 7 6 5 4 3 2

Mayfield Publishing Company
1280 Villa Street
Mountain View, California 94041

Sponsoring editor, Serina Beauparlant; *developmental editors*, Kirstan Price, Megan Rundel, Susan Shook, and Kathleen Engelberg; *production editor*, Lynn Rabin Bauer; *manuscript editor*, Betsy Dileria; *art director, text and cover designer*, Jeanne M. Schreiber; *art editor*, Robin Mouat; *illustrators*, Joan Carol, Dale Glasgow, Robin Mouat, Susan Seed, Kevin Somerville, John and Judy Waller, Pamela Drury Wattenmaker; *photo researcher*, Brian Pecko; *cover photograph*, © Cliff Riedinger/Natural Selection Stock Photography; *proofreader*, Kimberly McCutcheon; *manufacturing manager*, Randy Hurst. This text was set in 10.5/12 Berkeley Book by GTS Graphics, Inc. and printed on 45# Chromatone LG by Banta Company.

The Internet addresses listed in the text were accurate at the time of publication. The inclusion of a Web site does not indicate an endorsement by the authors or Mayfield Publishing Company, and Mayfield does not guarantee the accuracy of the information presented at these sites.

TEXT AND PHOTO CREDITS

Text

Pg. 325, "Deciding When to Take Supplements," and pg. 605, 607–609 adapted from Fahey, T. D., P. M. Insel, and W. T. Roth. 1997. *Fit and Well: Core Concepts and Labs in Physical Fitness and Wellness*, 2nd ed. Mountain View, Calif.: Mayfield. Copyright © 1997 Mayfield Publishing Company. Pg. 571–574 from Sobel, D., and R. Ornstein. 1996. *The Healthy Mind, Healthy Body Handbook*. DRX. Used with permission. Appendix A Data Sources: Arby's. 1995. *Comprehensive Guide of Quality Ingredients*. Burger King. 1997. *Nutritional Information*. Domino's Pizza. 1996. *Domino's Pizza*. Jack in the Box. 1996. *Quality and Nutrition Guide*. KFC. 1996. *Nutrition Facts*. McDonald's. 1996. *McDonald's Nutrition Facts*. Taco Bell. 1996. *Nutritional Guide*. Wendy's. 1992. *Complete Nutritional and Ingredient Information for Wendy's Products*. Appendix C from Campbell, J., and M. Keene. 1997. *Mayfield's Quick View Guide to the Internet for Students of Health and Physical Education*. Mountain View, Calif.: Mayfield.

Photo

Half-title page © 1990 Joel W. Rogers/Offshoot Stock. **Contents** pg. xv, © Bob Daemmrch/The Image Works; pg. xvi, © Esbin-Anderson/The Image Works; pg. xvii, © Laura Dwight/PhotoEdit; pg. xviii, © Rick Browne/Stock Boston; pg. xix, © Bonnie Kamin; pg. xx, © Tim McCarthy/PhotoEdit; pg. xxi, © 1994 Custom Medical Stock Photo Inc. All Rights Reserved; pg. xxiii, © Jim Corwin/Stock Boston; pg. xxv, © John Boykin/PhotoEdit.

Chapter 1 pg. xxviii, © David Madison 1992; pg. 3, © David Young-Wolff/PhotoEdit; pg. 11, © Bob Daemmrch/The Image Works; pg. 16, © Mary Kate Denny/PhotoEdit; pg. 18, © Bob Daemmrch/The Image Works; pg. 20, © Sam Forencich

Chapter 2 pg. 24, © Michelle Bridwell/PhotoEdit; pg. 26, © Michael Grecco/Stock Boston; pg. 30, © Bob Daemmrch/Stock Boston; pg. 36, © John Nordell/The Image Works; pg. 39, © Dorothy Littell Greco/The Image Works; pg. 41, © Tony Freeman/PhotoEdit

Chapter 3 pg. 52, © 1992 Jonathan A. Meyers; pg. 56, © Bob Daemmrch/The Image Works; pg. 58, © Elizabeth Crews; pg. 63, © Mark Antman/The Image Works; pg. 66, © Bob Daemmrch/Stock Boston; pg. 74, © Bob Daemmrch/The Image Works

Chapter 4 pg. 80, © Roberto Soncin Gerometta/Photo 20-20; pg. 83, © Gary A. Conner/PhotoEdit; pg. 87, © R. Lord/The Image Works; pg. 90, © Jennifer Bishop/Actuality, Inc.; pg. 92, © 1996 Phiz Mezey; pg. 97, © Phil Borden/PhotoEdit

(Photo credits continue on p. C-1, which constitutes a continuation of the copyright page.)

Preface

Now in its eighth edition, *Core Concepts in Health* has maintained its leadership in the field of health education for over 20 years. Since we pioneered the concept of self-responsibility for personal health in 1976, hundreds of thousands of students have used our book to become active, informed participants in their own health care. Each edition of *Core Concepts* has brought improvements and refinements, but the principles underlying the book have remained the same. Our commitment to these principles has never been stronger than it is today.

OUR GOALS

Our goals in writing this book can be stated simply:

- To present scientifically based, accurate, up-to-date information in an accessible format.
- To involve students in taking responsibility for their health and well-being.
- To instill a sense of competence and personal power in students.

The first of these goals means making expert knowledge about health and health care available to the individual. *Core Concepts* brings scientifically based, accurate, up-to-date information to students about topics and issues that concern them—exercise, stress, nutrition, weight management, contraception, intimate relationships, HIV infection, drugs, alcohol, and a multitude of others. Current, complete, and straightforward coverage is balanced with “user-friendly” features designed to make the text appealing. Written in an engaging, easy-to-read style and presented in a colorful, open format, *Core Concepts* invites the student to read, learn, and remember. Boxes, tables, artwork, photographs, and many other features highlight areas of special interest throughout the book.

The second of our goals is to involve students in taking responsibility for their health. *Core Concepts* uses innovative pedagogy and unique interactive features to get students thinking about how the material they’re reading relates to their own lives. We invite them to examine their emotions about the issues under discussion, to consider their personal values and beliefs, and to analyze their health-related behaviors. Beyond this, for students who want to change behaviors that detract from a healthy lifestyle, we offer guidelines and tools, ranging from sam-

ples of health journals and personal contracts to detailed assessments and behavior change strategies.

Perhaps our third goal in writing *Core Concepts in Health* is the most important: to instill a sense of competence and personal power in the students who read the book. Everyone has the ability to monitor, understand, and affect his or her own health. Although the medical and health professions possess impressive skills and have access to a huge body of knowledge that benefits everyone in our society, people can help to minimize the amount of professional care they actually require in their lifetime by taking care of their health—taking charge of their health—from an early age. Our hope is that *Core Concepts* will continue to help young people make this exciting discovery—that they have the power to shape their own futures.

ORGANIZATION AND CONTENT OF THE EIGHTH EDITION

The organization of the book as a whole remains essentially the same as in the seventh edition, with some improvements. The book is divided into eight parts. Part One, Establishing a Basis for Wellness, includes chapters on taking charge of your health (Chapter 1), stress (Chapter 2), and psychological health (Chapter 3). Part Two, Understanding Sexuality, opens with an exploration of intimate relationships, including friendship, intimate partnerships, marriage, and family (Chapter 4), and then moves on to discuss physical sexuality (Chapter 5), contraception (Chapter 6), abortion (Chapter 7), and pregnancy and childbirth (Chapter 8). As in previous editions of *Core Concepts*, we devote a separate chapter to abortion to reflect both the importance of this issue and our belief that abortion is not a form of contraception and should not be included in the chapter on that topic.

The order of topics in Part Three, Making Responsible Decisions: Substance Use and Abuse, has been changed for the eighth edition. The part opens with an expanded discussion of addictive behavior and the different classes of psychoactive drugs (Chapter 9), followed by chapters on alcohol (Chapter 10) and tobacco (Chapter 11). The chapters in Part Four, Getting Fit, have also been reordered. Following a detailed discussion of nutrition (Chapter 12), we turn first to exercise (Chapter 13) and

then to weight management (Chapter 14). Placing the material on exercise before the coverage of weight management helps emphasize the important role that physical activity plays in maintaining a healthy body weight.

Part Five, Protecting Yourself Against Disease, deals with the most serious health threats facing Americans today—cardiovascular disease (Chapter 15), cancer (Chapter 16), and infectious diseases, including those that are sexually transmitted. The chapters in Part Five have been reordered in the eighth edition so that the discussion of the immune system (Chapter 17) precedes the material on sexually transmitted diseases (Chapter 18). This change will aid students' understanding of the impact of HIV on the immune system.

Part Six, Accepting Physical Limits, explores aging (Chapter 19) and dying and death (Chapter 20). Part Seven, Making Choices in Health Care, provides information about medical self-care (Chapter 21) and the health care system (Chapter 22). And finally, Part Eight, Improving Your Chances: Personal Safety and Environmental Health, expands the boundaries of health to include injury prevention (Chapter 23) and the effects of environment on wellness (Chapter 24). Taken together, the chapters of the book provide students with a complete guide to promoting and protecting their health, now and through their entire lives, as individuals, as participants in a health care community and system, and as citizens of a planet that also needs to be protected if it is to continue providing human beings with the means to live healthy lives.

For the eighth edition, all chapters were carefully reviewed, revised, and updated. The latest information from scientific and health-related research is incorporated in the text, and newly emerging topics and issues are discussed. The following list gives a sample of some of the current concerns addressed in the eighth edition:

- Causes and prevention of violence
- Women's health issues
- Health information on the Internet
- Spiritual wellness
- Progress toward *Healthy People 2000* objectives
- The Surgeon General's 1996 recommendations for physical activity
- HIV treatment and testing
- Binge drinking on college campuses
- Diet and cancer
- Stress and disease
- Addictive behavior
- Genetic testing for cancer
- Safe use of air bags
- Critical thinking and consumer choices

- Emerging infectious diseases
- Physician-assisted death
- Effective communication

For the eighth edition, the coverage of violence has been expanded and moved to Chapter 23, Personal Safety: Protecting Yourself from Unintentional Injuries and Violence. Chapter 23 includes new and expanded sections on factors that contribute to violence, assault, homicide, gangs, hate crimes, family and intimate violence, sexual violence, and the role of firearms in violent injury and death. New boxes help students identify the potential for abusiveness in an intimate partner, prevent date rape, and protect themselves from all types of violent crime. The coverage of unintentional injuries—the leading cause of death for Americans under the age of 45—has also been revised and updated for the eighth edition. The goals of Chapter 23 are to make students more aware of why injuries happen and to give them concrete strategies for keeping themselves safe.

The coverage of HIV infection in Chapter 18, Sexually Transmitted Diseases, has been revised to reflect recent developments in testing and treatment. New illustrations show the effects of HIV on the immune system, the actions of new antiviral drugs, and the relative risk of different types of sexual behaviors. Four boxes address related issues—"HIV Infection Around the World," "Getting an HIV Test," "Talking About Condoms and Safer Sex," and "Preventing HIV Infection." Another box asks students to carefully examine their attitudes and behaviors to determine whether they are putting themselves at risk for HIV infection or another STD.

Chapter 9, The Use and Abuse of Psychoactive Drugs, includes a new opening section on addictive behaviors in general—what they are and how they develop. This section provides specific information on four potentially addictive behaviors: gambling, shopping, sex, and Internet use. The remainder of Chapter 9 covers key psychoactive drugs and includes up-to-date coverage of drug testing, drug legalization, and the social costs of drug use.

Two areas of particular concern—and the subjects of a great deal of recent research—are cardiovascular disease and cancer, the two leading killers of Americans. Chapters 15 and 16 report the latest findings on the roles of diet, exercise, tobacco use, infectious agents, and genetics in determining an individual's risk for developing CVD or cancer. Eleven new boxes address related topics, such as genetic tests for cancer risk, how hormones affect a woman's risk for heart disease, and how personality and social support affect disease risk and outcome.

Core Concepts also takes care to address the health issues and concerns of an increasingly diverse student population. While most health concerns are universal—we all need to eat well, exercise, and manage stress, for example—certain differences among people have impor-

tant implications for health. These differences can be genetic or cultural, based on factors such as gender, socioeconomic status, age, and ethnicity. Where such differences are important for health, they are discussed in the text or in a type of highlight box called Dimensions of Diversity (discussed in greater detail below). Examples of these discussions include the links between ethnicity and genetic diseases, the relationship between poverty and environmental health, and the effects of gender and ethnicity on body image.

The coverage of health issues for diverse populations has been expanded in the eighth edition, with topics in women's health receiving special attention. The gender gap in medical research has been closing since the establishment of the Office of Research on Women's Health at the National Institutes of Health, and more and more new information has become available as a result of the Women's Health Initiative, the Nurses' Health Study, and other large-scale investigations. New to the eighth edition are discussions of special risks faced by women who smoke or drink, hormonal influences on cardiovascular health and disease, reasons why women are at increased risk for depression and autoimmune disorders, and special dietary challenges faced by women.

The health field is dynamic, with new discoveries, advances, trends, and theories reported every week. Ongoing research—on the role of diet in cancer prevention, for example, or on new treatments for HIV infection—continually changes our understanding of the human body and how it works in health and disease. For this reason, no health book can claim to have the final word on every topic. Yet within these limits, *Core Concepts* does present the latest available information and scientific thinking on innumerable topics.

To aid students in keeping up with rapidly advancing knowledge about health issues, the eighth edition of *Core Concepts* also includes coverage of a key source of up-to-date information—the Internet. Each chapter includes an annotated list of World Wide Web sites that students can use as a launching point for further exploration of important topics. Appendix C, Resources for Self-Care, provides a brief introduction to the Internet, including guidelines for performing Web searches, using newsgroups and mailing lists, and evaluating health information from the Web. Several elements of the supplements package also include Internet resources and activities; see below for more details.

FEATURES OF THE EIGHTH EDITION

This edition of *Core Concepts in Health* builds on the features that attracted and held our readers' interest in the previous editions. One of the most popular features has always been the **boxes**, which allow us to explore a wide

range of current topics in greater detail than is possible in the text itself. About half the boxes are new to the eighth edition, and many others have been significantly revised or updated. The boxes are divided into six categories, each marked with a unique icon and label.



Tactics and Tips boxes distill from each chapter the practical advice students need in order to apply information to their own lives. By referring to these boxes, students can easily find ways to foster friendships, for example; to become more physically active; to improve communication in their relationships; to reduce the amount of fat in their diets; and to help a friend who has a problem with tobacco or drugs or has an eating disorder.



Critical Consumer boxes, new to the eighth edition, emphasize the key theme of critical thinking. These boxes are designed to help students develop and apply critical thinking skills, thereby allowing them to make sound choices related to health and well-being. Critical Consumer boxes provide specific guidelines for evaluating health news and advertising, using food labels to make dietary choices, choosing and using medical self-tests, avoiding quackery, selecting exercise footwear, making environmentally friendly shopping choices, and so on.



Dimensions of Diversity boxes are part of our commitment to reflect and respond to the diversity of the student population. These boxes give students the opportunity to identify any special health risks that affect them because of who they are as individuals or as members of a group. They also broaden students' perspectives by exposing them to a wide variety of viewpoints on health-related issues. The different dimensions these boxes reflect include gender, ethnicity, socioeconomic status, and age. The principles embodied by these boxes are described in the first box in the series, "Health Issues for Diverse Populations," which appears in Chapter 1. Topics covered in later chapters include special cardiovascular disease risks for African Americans, exercise for people with disabilities, suicide among older men, ethnic diets and cuisines, links between poverty and poor environmental health, and attitudes toward aging.

In addition, some Dimensions of Diversity boxes highlight health issues and practices in other parts of the world, allowing students to see what Americans share with people in other societies and how they differ. Students have the opportunity to learn about patterns of alcohol use in different cultures, laws and attitudes toward contraception and abortion in other countries, the pattern of HIV infection around the world, and other topics of interest.



Sound Mind, Sound Body boxes explore the close connection between mind and body. Drawn from studies in psychoneuroimmunology and related fields, these boxes focus on total wellness by examining the links between people's feelings and states of mind and their physical health; the boxes emphasize that all the dimensions of wellness must be developed in order for an individual to achieve optimal health and well-being. Included in Sound Mind, Sound Body boxes are topics such as how social support promotes wellness, how stress affects the immune system, how hostility and cardiovascular disease are linked, how intimate relationships improve health, and how exercise fosters psychological and emotional wellness.



Assess Yourself boxes give students the opportunity to examine their behavior and identify ways that they can change their habits and improve their health. By referring to these boxes, students can examine their eating habits, for example; evaluate their fitness level; discover if they are at increased risk for cancer or cardiovascular disease; evaluate their driving skills; determine what triggers their eating; and examine their drinking and drug-taking behavior.



A Closer Look boxes highlight current wellness topics of particular interest. Topics include bicycle helmets, diabetes, asthma, genetic testing for cancer, shyness, Prozac, codependency, and physician-assisted death.

In addition to the box program, many new and refined features are included in the eighth edition of *Core Concepts*. Each chapter opens with a new feature called **Test Your Knowledge**—a series of 4–6 multiple choice and true-false questions, with answers. These self-quizzes facilitate learning by getting students involved in a variety of wellness-related issues. The questions emphasize important points, highlight common misconceptions, and spark debate.

Vital Statistics tables and figures highlight important facts and figures in a memorable format that often reveals surprising contrasts and connections. From tables and figures marked with the Vital Statistics label, students can learn about drinking and drug use among college students, health care costs in the United States, world population growth, homicide rates, trends in public opinion about abortion, and a wealth of other information. For students who grasp a subject best when it is displayed graphically, numerically, or in a table, the Vital Statistics feature provides alternative ways of approaching and understanding the text.

The eighth edition also features an expanded program of attractive and helpful **illustrations**. The anatomical

art, which has been prepared by medical illustrators, is both visually appealing and highly informative. These illustrations help students understand such important information as how blood flows through the heart, how the process of conception occurs, and how to use a condom. Many of the graphs, charts, and other illustrations have been rendered in a dynamic and appealing new style. New topics illustrated for the eighth edition include the relationship between lifestyle factors and cancer risk, the life cycle of HIV in human cells, the chain of infection, the greenhouse effect, the immune response, and the levels and effects of different sounds. These lively and abundant illustrations will particularly benefit those students who learn best from visual images. Taken together, all the visual elements of the book provide powerful pedagogical tools and create a colorful and inviting look.

Personal Insights are open-ended questions designed to encourage self-examination and heighten students' awareness of their feelings, values, beliefs, thought processes, and past experiences. These questions have been formulated in a nonjudgmental way to foster honest self-analysis. They appear at appropriate points throughout each chapter.

Take Action, appearing at the end of every chapter, suggests hands-on exercises and projects that students can undertake to extend and deepen their grasp of the material. Suggested projects include interviews, investigations of campus or community resources, and experimentation with some of the behavior change techniques suggested in the text. Special care has been taken to ensure that the projects are both feasible and worthwhile.

Journal Entry also appears at the end of each chapter. These entries suggest ways for students to use their Health Journal (which we recommend they keep while using *Core Concepts*) to think about topics and issues, explore and formulate their own views, and express their thoughts in written form. They are designed to help students deepen their understanding of their own health-related behaviors.

Making wise choices about health requires students to sort through and evaluate health information. To help students become skilled evaluators, each chapter contains at least one **Critical Thinking Journal Entry**. These entries help students develop their critical thinking skills, including finding relevant information, separating fact from opinion, recognizing faulty reasoning, evaluating information, and assessing the credibility of sources. Critical Thinking Journal Entry questions do not have right or wrong answers; rather, they ask students to analyze, evaluate, or take a stand on a particular issue.

The **Behavior Change Strategies** that conclude many chapters offer specific behavior management/modification plans relating to the chapter's topic. Based on the principles of behavior management that are carefully explained in Chapter 1, these strategies will help students change unhealthy or counterproductive behaviors.

Included are strategies for dealing with test anxiety, quitting smoking, developing responsible drinking habits, planning a personal exercise program, phasing in a healthier diet, and many other practical plans for change.

Three quick-reference appendixes provide students with resources they can keep and use for years to come:

- Appendix A, “Nutritional Content of Popular Items from Fast-Food Restaurants,” provides information on commonly ordered menu items at eight fast-food restaurants.
- Appendix B, “Self-Care Guide for Common Medical Problems,” provides information to help students manage common symptoms, including fever, sore throat, indigestion, headache, and cuts and scrapes.
- Appendix C, “Resources for Self-Care,” lists books, information centers, hotlines, and electronic sources of wellness-related materials. Guidelines for using the Internet—how to perform searches, how to evaluate online information, and how to use newsgroups, mailing lists, and chat rooms—are also provided.

“First Aid at a Glance” from the Red Cross appears inside the back cover of the text, providing information that can save lives.

LEARNING AIDS

Although all the features of *Core Concepts in Health* are designed to facilitate learning, several specific learning aids have also been incorporated in the text. **Learning objectives** appear on the opening page of each chapter, identifying major concepts and helping to guide students in their reading and review of the text. Important terms appear in boldface type in the text and are defined in a **running glossary**, helping students handle a large and complex new vocabulary.

Chapter summaries offer students a concise review and a way to make sure they have grasped the most important concepts in the chapter. Also found at the end of every chapter are **selected bibliographies** and sections called **For More Information**. New to the eighth edition, **For More Information** sections contain annotated lists of books, newsletters, hotlines, organizations, and Web sites that students can use to extend and broaden their knowledge or pursue subjects of interest to them. A complete **Index** at the end of the book includes references to glossary terms in boldface type.

TEACHING TOOLS

Available to qualified adopters of the eighth edition of *Core Concepts in Health* is a comprehensive package of supplementary materials that enhance teaching and

learning. Included in the package are the following items:

- Instructor’s Resource Binder
- Students On Health: Custom Video to Accompany *Core Concepts in Health*
- Transparency Acetates
- Wellness Worksheets
- Mayfield’s *Quick View Guide to the Internet for Students of Health and Physical Education*
- *Core Concepts in Health* Presentation Software
- Mayfield Wellness Software
- Student Study Guide
- Computerized Test Bank
- Additional Videos, Software, and Other Multimedia

The **Instructor’s Resource Binder**, new for the eighth edition, contains a variety of helpful teaching materials in an easy-to-use form. Included in the binder are a comprehensive Instructor’s Resource Guide, transparency masters and handouts, an extensive set of examination questions, Wellness Worksheets, a sample color transparency acetate, and complete descriptions and ordering information for special *Core Concepts* packages.

- The **Instructor’s Resource Guide** provides a variety of supplementary materials that can be used to direct and facilitate students’ learning: extended chapter outlines, learning objectives, classroom activities, additional resources, Internet resources, selected *Healthy People 2000* objectives, and health crossword puzzles.

- **Transparency masters and handouts**—90 in all—are provided as additional lecture resources. The transparency masters include tables, graphs, and key points from the text; illustrations of many body systems are also provided.

- The **examination questions** have been completely revised and updated for the eighth edition by Phyllis D. Murray at Eastern Kentucky University. The test bank contains nearly 3000 multiple choice and true-false questions. The answer key lists the page number in the text where each answer is found.

- The Instructor’s Resource Binder also includes a complete set of **Wellness Worksheets**, a student learning aid described below.

Also new for the eighth edition is **Students On Health: Custom Video to Accompany Core Concepts in Health**. Filmed exclusively for *Core Concepts* with students at college campuses across the country, this unique video is designed to stimulate critical thinking and class discussion. The 8–10 minute segments focus on key wellness concerns—stress, intimate relationships, alcohol, tobacco, nutrition, exercise, STDs, and personal safety. The accompanying Instructor’s Video Guide provides summaries of each segment and discussion questions.

Sixty **transparency acetates**, half in color, provide material suitable for lecture and discussion. The acetates do not duplicate the transparency masters in the Instructor's Resource Binder, and many of them are from sources other than the text.

Wellness Worksheets help students become more involved in their own wellness and better prepared to implement successful behavior change programs. The 90 worksheets developed for the eighth edition include assessment tools that help students learn more about their wellness-related attitudes and behaviors, Internet activities that guide them in finding and using information from the World Wide Web, and knowledge-based reviews of key concepts. Wellness Worksheets are available in an easy-to-use pad (free when shrink-wrapped with the text) and are also found in the Study Guide.

New for the eighth edition is **Mayfield's Quick View Guide to the Internet for Students of Health and Physical Education** by Jennifer Campbell and Michael Keene at University of Tennessee, Knoxville. It provides step-by-step instructions on how to access the Internet and how to find and use information about health. It includes extensive lists of Internet resources for both students and instructors. The Quick View Guide also shows students how to evaluate the credibility of online information sources, communicate via e-mail and chat rooms, use listservs and newsgroups, find jobs through the Internet, and even create a Web page.

Also new for the eighth edition is the **Core Concepts in Health Presentation Software** package. This helpful lecture aid includes two components. The **CD-ROM Image Bank**, compatible with both IBM and Macintosh computers, contains over 150 images from the eighth edition as an additional lecture resource. The images can be used with LCD overhead projectors and can be imported into PowerPoint and other presentation software. The **PowerPoint Lecture Outlines** are electronic transparencies that can be customized to fit any lecture.

Easy-to-use **Mayfield Wellness Software** includes instructions and contracts for creating successful behavior change programs, as well as 15 interactive assessment activities. The assessments, which cover fitness, nutrition, stress, weight management, and cardiovascular health, help students pinpoint behaviors they can change to increase wellness. The software is available in both Windows and Macintosh formats and can be networked (free to qualified adopters).

The **Student Study Guide**, prepared by Thomas M. Davis of the University of Northern Iowa, is designed to help students understand and assimilate the material in the text. The Study Guide includes learning objectives, key terms, major points and issues, sample test questions, and the complete set of Wellness Worksheets.

A **computerized test bank** is available to qualified adopters. Microtest III, developed by Chariot Software

Group, allows instructors to design tests using the examination questions included with *Core Concepts in Health* and/or to incorporate their own questions. Microtest is available in both Windows and Macintosh formats.

Additional videos, software, and other multimedia—including nutrition, fitness, and health risk appraisal software—are available to qualified adopters. The **Mayfield video library** includes tapes on topics such as stress, intimate relationships, alcohol use, AIDS, nutrition, violence, fitness, and many more. **DINE Healthy software** provides an easy way for students to evaluate the nutritional value of their current diet; it also includes an exercise section that allows students to track their energy expenditures. The **Healthier People Network Health Risk Appraisal** is a self-assessment tool that alerts students to their personal risk areas and advises them on how to improve their risk profile.

If you have any questions concerning the book or teaching package, please call your local Mayfield sales representative or the Marketing and Sales Department at 800-433-1279. You may also reach Mayfield at profservices@mayfieldpub.com.

A NOTE OF THANKS

The efforts of innumerable people have gone into producing this eighth edition of *Core Concepts in Health*. The book has benefited immensely from their thoughtful commentaries, expert knowledge and opinions, and many helpful suggestions. We are deeply grateful for their participation in the project.

Academic Contributors

Stephen Barrett, M.D., Consumer Advocate and Editor,
Nutrition Forum Newsletter
The Health Care System

Roger Baxter, M.D., Internist and Infectious Disease
Specialist, Kaiser Permanente Medical Center, Oakland,
California; Associate Clinical Professor, University of
California, San Francisco
Immunity and Infection

Virginia Brooke, Ph.D., University of Texas Medical
Branch at Galveston
Aging: A Vital Process

Boyce Burge, Ph.D., *Healthline*
Cancer

Christine DeVault, Cabrillo College
Pregnancy and Childbirth

Thomas Fahey, Ed.D., California State University, Chico
Exercise for Health and Fitness

Michael R. Hoadley, Ph.D., University of South Dakota
Personal Safety: Protecting Yourself from Unintentional Injuries and Violence

Paul M. Insel, Ph.D., Stanford University
Taking Charge of Your Health; Stress: The Constant Challenge; Toward a Tobacco-Free Society; Cardiovascular Health

Nancy Kemp, M.D., Sonoma State University
The Responsible Use of Alcohol; Sexually Transmitted Diseases

Charles Ksir, Ph.D., University of Wyoming
The Use and Abuse of Psychoactive Drugs

Joyce D. Nash, Ph.D., Clinical Psychologist in private practice (San Francisco and Palo Alto)
Weight Management

David Quadagno, Ph.D., Florida State University
Sex and Your Body

Walton T. Roth, M.D., Stanford University
Psychological Health

James H. Rothenberger, M.P.H., University of Minnesota
Environmental Health

David Sobel, M.D., M.P.H., Director of Patient Education and Health Promotion, Kaiser Permanente Medical Care Program, Northern California Region
Medical Self-Care: Skills for the Health Care Consumer

Albert Lee Strickland and Lynne Ann DeSpelder, Cabrillo College
Dying and Death

Bryan Strong, Ph.D., University of California at Santa Cruz, and Christine DeVault, Cabrillo College
Intimate Relationships

Mae V. Tinklenberg, R.N., N.P., M.S., *Nurseweek Publications*
Contraception; Abortion

Stella L. Volpe, Ph.D., R.D., F.A.C.S.M., University of Massachusetts, Amherst
Nutrition Basics

Academic Advisers and Reviewers

Dianne A. R. Bartley, Middle Tennessee State University

Dayna S. Brown, Morehead State University

Suzanne M. Christopher, Portland Community College

Paul Finnicum, Arkansas State University

Marianne Frauenknecht, Western Michigan University

Julie Gast, Utah State University

Marie R. Horton, Texas Southern University

Bobby E. Lang, Florida Agricultural and Mechanical University

Rebecca R. Leas, Clarion University of Pennsylvania

Terri Mulkins Manning, University of North Carolina-Charlotte

Juli Miller, Ohio University

M. Sue Reynolds, University of Maryland

N. Heather Savage, University of New Orleans

Martin D. Schwartz, Ohio University

David A. Sleet, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention

Helen M. Welle, Georgia Southern University

Michael A. White, Kings River College

Kathy M. Wood, Butler County Community College

Jenny Kisuk Yi, University of Houston

Technology Focus Group Participants

Ken Allen, University of Wisconsin, Oshkosh

Lisa Farley, Butler University

Barbara Greenburg, Butler University

Bill Johnson, Stephen F. Austin State University

Rita Nugent, University of Evansville

Patricia Dotson Pettit, Nebraska Wesleyan University

Carol Plugge, Lamar University

Steve Sedbrook, Fort Hays State University

Marilyn Strawbridge, Butler University

Finally, the book could not have been published without the efforts of the staff at Mayfield Publishing Company and the *Core Concepts* book team: Serina Beauparlant, Sponsoring Editor; Kirstan Price, Megan Rundel, Susan Shook, and Kate Engelberg, Developmental Editors; Sara Early, Editorial Assistant; Linda Toy, Production Director; Lynn Rabin Bauer, Production Editor; Jeanne M. Schreiber, Art Director; Robin Mouat, Art Editor; Marty Granahan, Permissions Editor; Brian Pecko, Photo Researcher; Randy Hurst, Manufacturing Manager; Ann Marie Hovie, Production Assistant; Michelle Rodgerson, Marketing Manager; Jay Bauer, Marketing Communications. To all we express our deep appreciation.

Paul M. Insel
Walton T. Roth

Brief Contents

PART ONE

Establishing a Basis for Wellness

- Chapter 1 Taking Charge of Your Health 1
Chapter 2 Stress: The Constant Challenge 25
Chapter 3 Psychological Health 53

PART TWO

Understanding Sexuality

- Chapter 4 Intimate Relationships 81
Chapter 5 Sex and Your Body 103
Chapter 6 Contraception 131
Chapter 7 Abortion 163
Chapter 8 Pregnancy and Childbirth 183

PART THREE

Making Responsible Decisions: Substance Use and Abuse

- Chapter 9 The Use and Abuse of Psychoactive
Drugs 215
Chapter 10 The Responsible Use of Alcohol 247
Chapter 11 Toward a Tobacco-Free Society 273

PART FOUR

Getting Fit

- Chapter 12 Nutrition Basics 299
Chapter 13 Exercise for Health and Fitness 337
Chapter 14 Weight Management 369

PART FIVE

Protecting Yourself Against Disease

- Chapter 15 Cardiovascular Health 397
Chapter 16 Cancer 427
Chapter 17 Immunity and Infection 459
Chapter 18 Sexually Transmitted Diseases 485

PART SIX

Accepting Physical Limits

- Chapter 19 Aging: A Vital Process 515
Chapter 20 Dying and Death 537

PART SEVEN

Making Choices in Health Care

- Chapter 21 Medical Self-Care: Skills for the Health
Care Consumer 563
Chapter 22 The Health Care System 583

PART EIGHT

Improving Your Chances: Personal Safety and Environmental Health

- Chapter 23 Personal Safety: Protecting Yourself
from Unintentional Injuries and
Violence 601
Chapter 24 Environmental Health 631

- APPENDIX A Nutritional Content of Popular Items
from Fast-Food Restaurants A-1
APPENDIX B A Self-Care Guide for Common
Medical Problems A-5
APPENDIX C Resources for Self-Care A-12

- INDEX I-1

Contents

Preface v

PART ONE

Establishing a Basis for Wellness

CHAPTER 1

Taking Charge of Your Health 1

WELLNESS: THE NEW HEALTH GOAL 2

The Dimensions of Wellness 2
New Opportunities, New Responsibilities 3
Healthy People 2000 Goals 5

CHOOSING WELLNESS 6

Factors That Influence Wellness 6
A Wellness Profile 6

HOW DO YOU REACH WELLNESS? 10

Getting Serious About Your Health 10
What Does It Take to Change? 11
Developing a Behavior Change Plan 14
Putting Your Plan into Action 17
Staying With It 18
Getting Outside Help 19

BEING HEALTHY FOR LIFE 19

Making Changes in Your World 20
What Does the Future Hold? 20

Summary 20

Take Action 21

Journal Entry 22

For More Information 22

Selected Bibliography 23

CHAPTER 2

Stress: The Constant Challenge 25

WHAT IS STRESS? 26

Physical Responses to Stressors 26

Emotional and Behavioral Responses to Stressors 29
The Stress Experience as a Whole 31

STRESS AND DISEASE 32

The General Adaptation Syndrome 32
Psychoneuroimmunology 32
Links Between Stress and Specific Conditions 33

COMMON SOURCES OF STRESS 35

Major Life Changes 35
Daily Hassles 36
College Stressors 36
Job-Related Stressors 36
Interpersonal and Social Stressors 37
Environmental Stressors 37
Internal Stressors 38

TECHNIQUES FOR MANAGING STRESS 38

Social Support 39
Communication 39
Exercise 39
Nutrition 40
Sleep 40
Time Management 41
Cognitive Techniques 42
Relaxation Techniques 43

CREATING A PERSONAL PLAN FOR MANAGING STRESS 46

Identifying Stressors 46
Designing Your Plan 46
Getting Help 47

Summary 47

Behavior Change Strategy: Dealing with Test Anxiety 48

Take Action 50

Journal Entry 50

For More Information 50

Selected Bibliography 51

CHAPTER 3

Psychological Health 53

WHAT PSYCHOLOGICAL HEALTH IS NOT 54

DEFINING PSYCHOLOGICAL HEALTH 54

- Realism 55
- Acceptance 55
- Autonomy 55
- A Capacity for Intimacy 56
- Creativity 56

MEETING LIFE'S CHALLENGES 56

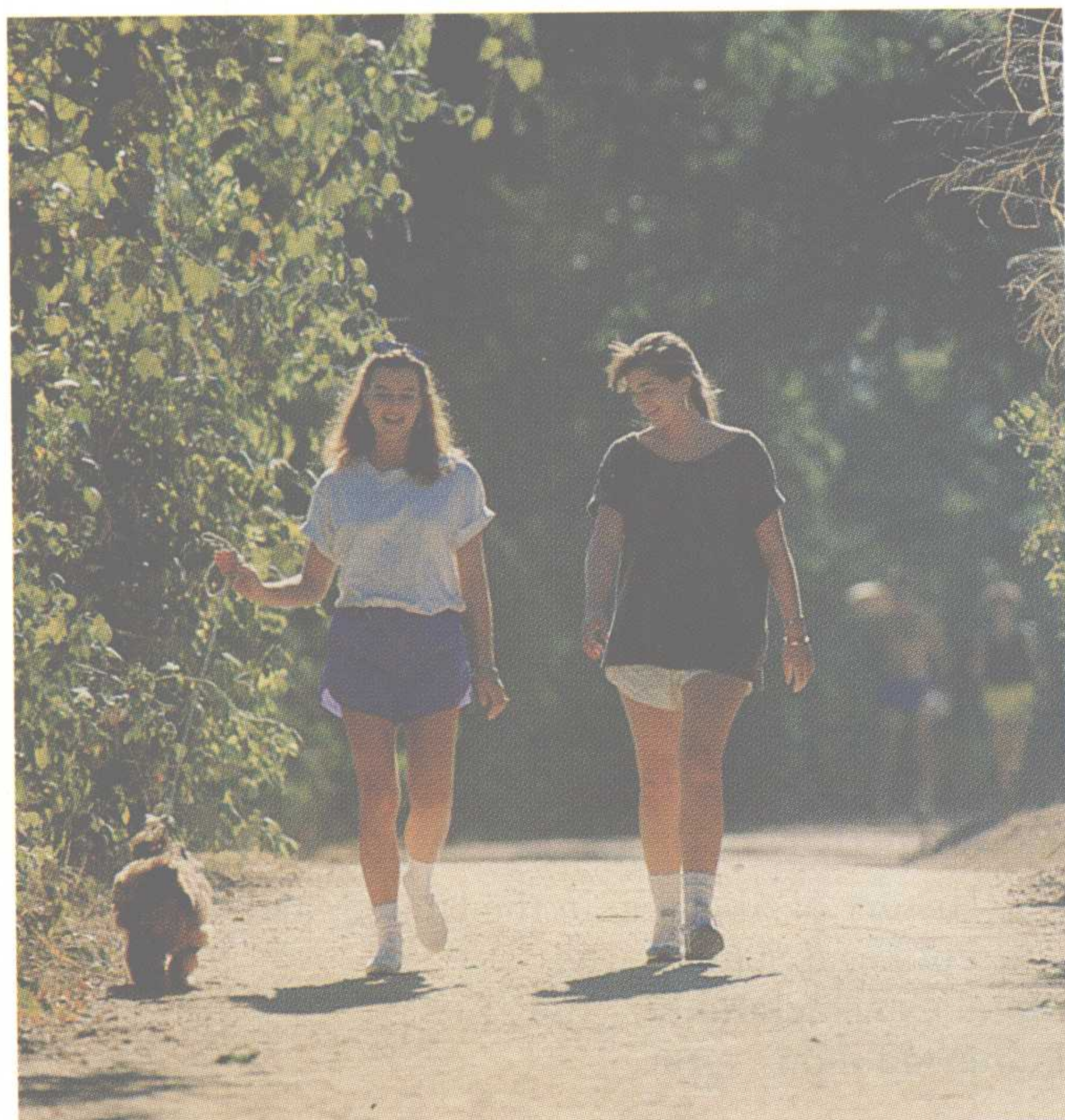
- Growing Up Psychologically 56
- Achieving Healthy Self-Esteem 58
- Being Less Defensive 60
- Being Optimistic 61
- Maintaining Honest Communication 62
- Dealing with Anger 63

PSYCHOLOGICAL DISORDERS 64

- Anxiety Disorders 64
- Mood Disorders 66
- Schizophrenia 69

MODELS OF HUMAN NATURE AND THERAPEUTIC CHANGE 69

- The Biological Model 69
- The Behavioral Model 71
- The Cognitive Model 71
- The Psychoanalytic Model 72
- Implications of the Four Models 72



GETTING HELP 72

- Self-Help 72
- Peer Counseling and Support Groups 73
- Professional Help 74

Summary 75

Behavior Change Strategy: Dealing with Social Anxiety 76

Take Action 77

Journal Entry 78

For More Information 78

Selected Bibliography 79

PART TWO

Understanding Sexuality

CHAPTER 4

Intimate Relationships 81

DEVELOPING INTIMATE RELATIONSHIPS 82

- Self-Concept and Self-Esteem 82
- Friendship 83
- Love, Sex, and Intimacy 83
- Jealousy 85

COMMUNICATION 86

- Nonverbal Communication 86
- Communication Skills 87
- Gender and Communication 87
- Conflict and Conflict Resolution 87

PAIRING AND SINGLEHOOD 89

- Choosing a Partner 89
- Dating 90
- Living Together 90
- Gay and Lesbian Partnerships 92
- Singlehood 92

MARRIAGE 93

- Benefits of Marriage 93
- Issues in Marriage 93
- The Role of Commitment 93
- Separation and Divorce 94

FAMILY LIFE 95

- Becoming a Parent 95
- Parenting and the Family Life Cycle 96
- Single Parents 96
- Stepfamilies 97
- Successful Families 97



<i>Summary</i>	97
<i>Take Action</i>	99
<i>Journal Entry</i>	99
<i>For More Information</i>	100
<i>Selected Bibliography</i>	100

CHAPTER 5

Sex and Your Body 103

SEXUAL ANATOMY 104

Female Sex Organs	104
Male Sex Organs	105

HORMONES AND THE REPRODUCTIVE LIFE CYCLE 107

Differentiation of the Embryo	107
Female Sexual Maturation	108
Male Sexual Maturation	110
Aging and Human Sexuality	110

SEXUAL FUNCTIONING 112

Sexual Stimulation	112
The Sexual Response Cycle	112
Sexual Disorders and Dysfunctions	114

SEXUAL BEHAVIOR 116

The Development of Sexual Behavior	116
Sexual Orientation	121
Varieties of Human Sexual Behavior	123
Atypical and Problematic Sexual Behaviors	124
Commercial Sex	124
Responsible Sexual Behavior	125

<i>Summary</i>	126
<i>Take Action</i>	127

<i>Journal Entry</i>	127
<i>For More Information</i>	128
<i>Selected Bibliography</i>	128

CHAPTER 6

Contraception 131

PRINCIPLES OF CONTRACEPTION 133

REVERSIBLE CONTRACEPTIVES 134

Oral Contraceptives: The Pill	134
Norplant Implants	136
Depo-Provera Injections	137
The Postcoital Pill for Emergency Contraception	138
The Intrauterine Device (IUD)	138
Male Condoms	140
Female Condoms	142
The Diaphragm with Spermicide	143
The Cervical Cap	145
Vaginal Spermicides	145
Abstinence and Fertility Awareness	146
Combining Methods	149

PERMANENT CONTRACEPTION: STERILIZATION 149

Male Sterilization: Vasectomy	150
Female Sterilization	152

NEW METHODS OF CONTRACEPTION 152

ISSUES IN CONTRACEPTION 154

When Is It OK to Begin Having Sexual Relations?	154
Contraception and Gender Differences	155
Sex and Contraceptive Education for Teenagers	156

WHICH CONTRACEPTIVE METHOD IS RIGHT FOR YOU? 156

<i>Summary</i>	158
<i>Take Action</i>	159
<i>Journal Entry</i>	160
<i>For More Information</i>	160
<i>Selected Bibliography</i>	161

CHAPTER 7

Abortion 163

THE ABORTION ISSUE 164

The History of Abortion in the United States	164
Current Legal Status	164
Moral Considerations	165
Public Opinion	166



Personal Considerations	169
Current Trends	170

METHODS OF ABORTION 172

Vacuum Aspiration	174
Menstrual Extraction	174
Dilation and Evacuation	174
RU-486	174
Medical Methods	175

COMPLICATIONS OF ABORTION 175

Possible Physical Effects	175
Possible Psychological Effects	176

DECISION MAKING AND UNINTENDED PREGNANCY 177

Summary	179
Take Action	180
Journal Entry	180
For More Information	180
Selected Bibliography	180

CHAPTER 8 *Pregnancy and Childbirth 183*

PREPARATION FOR PARENTHOOD 184

Deciding to Become a Parent	184
Preconception Care	185

UNDERSTANDING FERTILITY 187

Conception	187
Infertility	189

PREGNANCY 192

Pregnancy Tests	192
Changes in the Woman's Body	192
Emotional Responses to Pregnancy	195
Fetal Development	195
The Importance of Prenatal Care	199
Complications of Pregnancy and Pregnancy Loss	204

CHILDBIRTH 206

Choices in Childbirth	206
Labor and Delivery	206
The Postpartum Period	208

Summary 210

Take Action 211

Journal Entry 211

For More Information 212

Selected Bibliography 213

PART THREE

Making Responsible Decisions: Substance Use and Abuse

CHAPTER 9 *The Use and Abuse of Psychoactive Drugs 215*

ADDICTIVE BEHAVIOR 216

What Is Addiction?	216
Characteristics of Addictive Behavior	216
The Development of Addiction	217
Characteristics of People with Addictions	217
Examples of Addictive Behaviors	218

DRUG USE, ABUSE, AND DEPENDENCE 219

The Drug Tradition	219
Drug Abuse and Dependence	220
Who Uses Drugs?	221
Why Do People Use Drugs?	223
Risk Factors for Dependence	223



HOW DRUGS AFFECT THE BODY 223

- Drug Factors 223
- User Factors 225
- Social Factors 226

REPRESENTATIVE PSYCHOACTIVE DRUGS 227

- Opioids 227
- Central Nervous System Depressants 227
- Central Nervous System Stimulants 228
- Marijuana and Other Cannabis Products 231
- Hallucinogens 232
- Inhalants 233

DRUG USE: THE DECADES AHEAD 234

- Drugs, Society, and Families 234
- Legalizing Drugs 235
- Drug Testing 235
- Treatment for Drug Dependence 236
- Preventing Drug Abuse 237
- The Role of Drugs in Your Life 240

Summary 241

Behavior Change Strategy: Changing Your Drug Habits 242

Take Action 242

Journal Entry 243

For More Information 243

Selected Bibliography 244

CHAPTER 10

***The Responsible Use of Alcohol* 247**

THE NATURE OF ALCOHOL 248

- The Chemistry of Alcohol 248
- Absorption 248
- Metabolism and Excretion 249
- Alcohol Intake and Blood Alcohol Concentration 249

ALCOHOL AND HEALTH 251

- The Immediate Effects of Alcohol 251
- Drinking and Driving 253
- The Effects of Chronic Use 254
- The Effects of Alcohol Use During Pregnancy 255
- Possible Health Benefits of Alcohol 257

ALCOHOL ABUSE AND DEPENDENCE 257

- Alcohol Abuse 257
- Binge Drinking 258
- Alcoholism 259
- Gender and Ethnic Differences 263
- Helping Someone with an Alcohol Problem 264

DRINKING BEHAVIOR AND RESPONSIBILITY 264

- Examine Your Drinking Behavior 264
- Drink Moderately and Responsibly 265
- Promote Responsible Drinking in Others 265

Summary 267

Behavior Change Strategy: Developing Responsible Drinking Habits 268

Take Action 269

Journal Entry 269

For More Information 269

Selected Bibliography 270

CHAPTER 11

***Toward a Tobacco-Free Society* 273**

WHY PEOPLE USE TOBACCO 274

- Nicotine Addiction 274

Social and Psychological Factors	276
Why Start in the First Place?	276
Who Uses Tobacco?	278

HEALTH HAZARDS 278

Tobacco Smoke: A Poisonous Mix	278
The Immediate Effects of Smoking	279
The Long-Term Effects of Smoking	280
Other Forms of Tobacco Use	284

THE EFFECTS OF SMOKING ON THE NONSMOKER 285

Environmental Tobacco Smoke	285
Smoking and Pregnancy	286
The Cost of Tobacco Use to Society	287

WHAT CAN BE DONE? 288

Action at the Local Level	288
Action at the State and Federal Levels	288
International Action	289
Action in the Private Sector	289
Individual Action	289
Controlling the Tobacco Companies	289

HOW A TOBACCO USER CAN QUIT 290

The Benefits of Quitting	290
Options for Quitting	292
Summary	292
<i>Behavior Change Strategy: Kicking the Tobacco Habit</i>	294
<i>Take Action</i>	294
<i>Journal Entry</i>	296
<i>For More Information</i>	296
<i>Selected Bibliography</i>	297

PART FOUR

Getting Fit

CHAPTER 12

Nutrition Basics 299

NUTRITIONAL REQUIREMENTS: COMPONENTS OF A HEALTHY DIET 300

Proteins—The Basis of Body Structure	300
Fats—Essential in Small Amounts	301
Carbohydrates—An Ideal Source of Energy	304
Dietary Fiber—A Closer Look	308
Vitamins—Organic Micronutrients	308
Minerals—Inorganic Micronutrients	310

Water—Vital But Often Ignored	313
Other Substances in Foods	313

NUTRITIONAL GUIDELINES: PLANNING YOUR DIET 314

Recommended Dietary Allowances (RDAs)	315
The Food Guide Pyramid	316
Dietary Guidelines for Americans	318
The Vegetarian Alternative	321
Dietary Challenges for Special Population Groups	322

A PERSONAL PLAN: MAKING INFORMED CHOICES ABOUT FOOD 323

Reading Food Labels	325
Deciding Whether to Take Supplements	325
Protecting Yourself Against Foodborne Illness	329
Environmental Contaminants	329
Additives in Food	330
Genetically Altered Foods	331

Summary 331

Take Action 332

Journal Entry 332

Behavior Change Strategy: Improving Your Diet 333

For More Information 334

Selected Bibliography 335

