

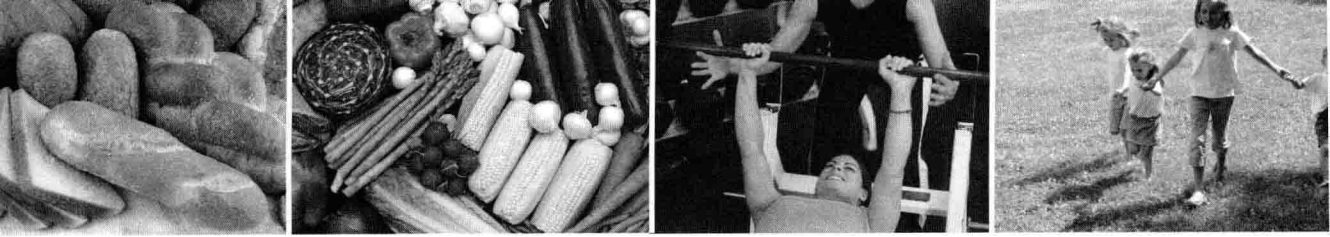
Liane M. Summerfield

Nutrition, Exercise, & Behavior

An Integrated Approach
to Weight Management

SECOND EDITION





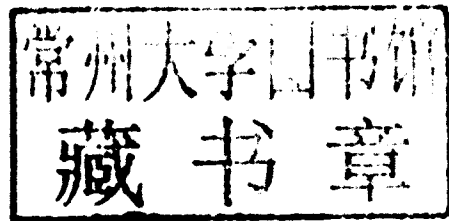
Nutrition, Exercise, and Behavior

AN INTEGRATED APPROACH TO WEIGHT MANAGEMENT

SECOND EDITION

LIANE M. SUMMERFIELD, PH.D.

Marymount University



 **WADSWORTH**
CENGAGE Learning™

Australia • Brazil • Japan • Korea • Mexico • Singapore • Spain • United Kingdom • United States



**Nutrition, Exercise, and Behavior: An
Integrated Approach to Weight Management,
Second Edition**

Liane M. Summerfield

Senior Acquisitions Editor: Peggy Williams

Assistant Editor: Shannon Holt

Senior Marketing Manager: Laura McGinn

Senior Marketing Communications Manager:
Linda Yip

Content Project Management: PreMediaGlobal

Design Director: Rob Hugel

Art Director: John Walker

Print Buyer: Linda Hsu

Rights Acquisitions Specialist (Image & Text):
Thomas McDonough

Production Service: PreMediaGlobal

Photo Researcher: Sara Golden

Text Researcher: Andrew Tremblay

Copy Editor: Pattie Stechschulte

Cover Designer: Riezebos Holzbaur/Tim Herald

Cover Image: Vegetable Image/Shutterstock,
Royalty-Free; People with Resistance Bands
(inset)/Shutterstock, Royalty-Free; Woman
Stretching (inset)/Getty Images, Royalty-Free;
Spinning Class (inset)/Shutterstock,
Royalty-Free

Compositor: PreMediaGlobal

© 2012, 2001 Wadsworth, Cengage Learning

ALL RIGHTS RESERVED. No part of this work covered by the copyright herein may be reproduced, transmitted, stored, or used in any form or by any means graphic, electronic, or mechanical, including but not limited to photocopying, recording, scanning, digitizing, taping, Web distribution, information networks, or information storage and retrieval systems, except as permitted under Section 107 or 108 of the 1976 United States Copyright Act, without the prior written permission of the publisher.

For product information and technology assistance, contact us at
Cengage Learning Customer & Sales Support, 1-800-354-9706.

For permission to use material from this text or product,
submit all requests online at www.cengage.com/permissions.

Further permissions questions can be e-mailed to
permissionrequest@cengage.com

Library of Congress Control Number: 2011926914

ISBN-13: 978-0-8400-6924-5

ISBN-10: 0-8400-6924-3

Wadsworth

20 Davis Drive
Belmont, CA, 94002-3098
USA

Cengage Learning is a leading provider of customized learning solutions with office locations around the globe, including Singapore, the United Kingdom, Australia, Mexico, Brazil, and Japan. Locate your local office at international.cengage.com/region.

Cengage Learning products are represented in Canada by
Nelson Education, Ltd.

To learn more about Wadsworth, visit www.cengage.com/wadsworth

Purchase any of our products at your local college store or at our
preferred online store www.cengagebrain.com.

To the memory of my parents for all that they gave me.

Ten years have passed since the publication of the first edition of this text. Since that time, we have learned more about the incidence, prevalence, and consequences of obesity/overweight and eating disorders; we have seen updates to Dietary Guidelines, the food pyramid, and recommended nutrient intakes and have been given revised exercise guidelines. Additional physiological factors affecting weight have been discovered and treatment approaches evolved. And yet, obesity is still on the rise.

In the United States today, over two-thirds of the adult population and one-third of children and adolescents are overweight or obese. While the United States still leads the way, overweight and obesity rates have increased in all the developed nations and in many developing countries as well. For example, more than half of the population is overweight in the United Kingdom, Poland, and Chile, and just under half is overweight in Germany, Canada, and Australia. This excess weight, and particularly excess fat, is responsible for a rise in serious health conditions, an increase in health care costs by billions of dollars each year, and a reduction of quality of life. About 80% of obese adults have cardiovascular disease, hypertension, type 2 diabetes, cancer, osteoarthritis, complications during pregnancy, sleep apnea, and approximately 150,000 excess deaths in the United States alone have been attributed to obesity.

Furthermore, obesity is now seen at much earlier ages. Ten years ago, 14% of 6- to 11-year-olds and 12% of 12- to 19-year-olds were obese. Today, 20% of children and 18% of adolescents are obese. In the past ten years, rates of obesity among low income preschoolers increased from 12% to almost 15%. These rates are poised to have a profoundly negative effect on health and longevity, possibly lowering life expectancy of younger generations for the first time in decades.

Weight management is a complex topic, far more complicated than popular diet books, reality television programs, or exercise videos would suggest. This book looks at weight management holistically, considering the role of physiology, the environment, and human behavior to explain obesity and eating disorders. It offers in-depth coverage of important areas supported by current evidence with tables and figures to synthesize and summarize key points. An extensive reference list at the end of each chapter allows students to read original research.

WHY THIS TEXT WAS DEVELOPED

The first edition of this book was written to fill a gap in the textbook market: There were no comprehensive texts on weight management. Such a gap still exists, and the need for information has never been greater. Many people who want to lose weight will try almost anything that seems to offer a glimmer of success. This makes the promotion of evidence-based treatment approaches very important, and this text offers consideration of many of these. It also emphasizes the necessity of prevention. To address this, the text incorporates

a public health approach to issues of weight management, where not only individual factors but societal, family, and environmental factors contributing to eating disorders and overweight/obesity are reviewed in each chapter.

This book is designed for students and professionals in many disciplines who are confronted—and confounded—by weight-management issues. While many people think of excess weight as an individual failure—not enough exercise and too much food—addressing this problem requires more than individual effort. Environmental factors so significantly influence people’s individual behaviors that any interventions aimed at lowering rates of obesity and preventing overweight must take into consideration the individual, family, community, and broader environment. Without a multifaceted approach that involves health, fitness, and nutrition professionals, almost everyone could be overweight or obese within the next two decades.

BOOK DESIGN

This second edition reorders and updates information from the previous edition. It features twelve chapters organized in six sections: (1) An Introduction to Weight Management, (2) Metabolic and Physiological Aspects of Weight Management, (3) Nutrition for Health and Weight Management, (4) Physical Activity for Health and Weight Management, (5) Approaches to Weight Management, and (6) Identification, Prevention, and Treatment of Eating Disorders and Childhood Obesity.

Two introductory chapters lead off the text: an overview of overweight, underweight, and obesity; and methods of assessment relevant to weight management professionals—anthropometric, clinical, and biochemical measures and assessment of physical activity and diet. Chapters 3 and 4 review metabolic and physiological aspects of weight management. These chapters were moved closer to the front to introduce readers earlier to concepts of energy transformation in the body, the components of energy expenditure, and the roles of body systems and genetics in determining how and where we store fat.

Chapters 5 and 6 focus on energy nutrients, vitamins, minerals, and water. The chapters review the impact of each energy nutrient, specific vitamins and minerals on weight management. In addition, Chapter 5 contains a new section on dietary approaches to weight management.

Updated chapters on the role of physical activity in promoting health and weight management (Chapters 7 and 8) and behavioral and nonbehavioral approaches to weight management (Chapters 9 and 10) remain in this edition of the text. In addition, a new sixth section has been added: identification, prevention, and treatment of eating disorders (Chapter 11) and childhood obesity (Chapter 12). Because of rising rates of childhood obesity, Chapter 12 was completely rewritten to focus exclusively on primary, secondary, and tertiary prevention of childhood obesity.

As college pedagogy continues to evolve from teacher-centered approaches, where lecture predominates, to student-centered approaches, where case studies and other active learning techniques are used, so has the design of this text. Each chapter includes a “running” case study with multiple parts and discussion questions. Instructors can assign students to read a case or one section of a case before the class meets; initiate class with a brief lecture; and then use class time to discuss elements of the case in small groups. Research outside of class can also supplement each of the cases.

ACKNOWLEDGEMENTS

Many thanks to Dr. Carolyn Oxenford, professor and director of the Center for Teaching Excellence at Marymount University, for her help with developing case studies and to Sylvia Whitman, Marymount University Writing Specialist, who could always find just the right word when I could not. Reviewers of this second edition provided detailed comments, which were extremely helpful in revising the text. Many thanks to Susan Berkow (George Mason University), Jeffery Betts (Central Michigan University), Jeffery Harris (West Chester University), Cindy Marshall (Saddleback Community College), Kathy Munoz (Humboldt State University), and Susan Perry (Appalachian State University) for their thorough reviews and insights.

PART I

An Introduction to Weight Management

- CHAPTER 1** Overweight, Underweight, and Obesity 1
CHAPTER 2 Assessment Approaches in Weight Management 41

PART II

Metabolic and Physiological Aspects of Weight Management

- CHAPTER 3** Energy Metabolism 81
CHAPTER 4 Regulation of Eating Behavior and Body Weight 119

PART III

Nutrition for Health and Weight Management

- CHAPTER 5** The Energy Nutrients and Weight Management 155
CHAPTER 6 Vitamins, Minerals, and Water 195

PART IV

Physical Activity for Health and Weight Management

- CHAPTER 7** Physical Activity and Exercise: The Basics 235
CHAPTER 8 Physical Activity, Health, and Weight Management 271

PART V

Approaches to Weight Management

- CHAPTER 9** Behavioral Approaches to Weight Management 307
CHAPTER 10 Non-Behavioral Approaches to Weight Management 347

PART VI

Identification, Prevention, and Treatment of Eating Disorders and Childhood Obesity

- CHAPTER 11** Eating Disorders 389
- CHAPTER 12** Prevention of Childhood Obesity 425

- APPENDIX A** Body Composition Assessment Tools 469
- APPENDIX B** Nutrition and Physical Activity Assessment Tools 480
- APPENDIX C** Exchange Lists for Weight Management 486
- APPENDIX D** Dietary Reference Intakes (DRI) 508

PART I An Introduction to Weight Management

CHAPTER 1

Overweight, Underweight, and Obesity 1

An Overview of Weight Management Definitions and Concerns 3

What Do the Terms Overweight, Underweight, and Obese Mean? 3

How Many People Are Overweight, Obese, or Underweight? 6

Case Study. The Health Writer, Part 1 7

Why Is Weight Gain on the Rise in the United States and Elsewhere? 12

An Overview of Weight Management Definitions and Concerns: Summary 16

The Impact of Weight on Health 16

What Are Morbidity and Mortality? 16

Which Health Problems Are Associated with Obesity? 17

Are There Harmful Health Effects from Being Underweight? 28

What Is the Best Weight for Long Life? 29

Case Study. The Health Writer, Part 2 29

Is There an Optimal Weight to Enhance Quality of Life? 32

Impact of Weight on Health: Summary 34

Who Needs Weight-Management Information? 34

Case Study. The Health Writer, Part 3 36

References 36

CHAPTER 2

Assessment Approaches in Weight Management 41

Anthropometric Assessment: Body Size, Shape, and Composition 42

What Are We Made of? 42

What Are Common Measures of Body Size? 45

How Should the BMI Be Used in Assessment? 47

Should We Use Height–Weight Tables? 49

What Do Circumference Measures Tell Us About Body Composition? 49

How Are Skinfold Measures Used in Assessment? 52

What Is Bioelectrical Impedance Analysis? 56

Anthropometric Assessment: Summary 58

Case Study. Personal Assessment, Part 1 58

Clinical Assessment 59*What Does a Physical Examination Include?* 59*What Information Is Needed to Construct a Health History?* 60*Clinical Assessment: Summary* 62**Biochemical Assessment 62***What Are Biochemical Tests of General Nutritional Status?* 62*Which Blood Glucose Tests Are Useful?* 63*Which Laboratory Tests Comprise the Lipid Profile?* 64*Biochemical Assessment: Summary* 65**Dietary and Physical Activity Assessment 66***What Is a 3-Day Diet Record?* 66*How Is Physical Activity Assessed?* 68*Diet and Physical Activity Assessment: Summary* 72**Putting Assessment Components Together 73***What Is a Health Risk Factor Analysis?* 73*Putting Assessment Components Together: Summary* 75**Case Study. Personal Assessment, Part 2 77****References 77****PART II Metabolic and Physiological Aspects of Weight Management****CHAPTER 3****Energy Metabolism**

81

Energy in: The Metabolic Fate of Ingested Food 83*How Is Food Energy Transformed in the Body?* 85*What Is the Role of Carbohydrates in Energy Metabolism?* 85*What Is the Role of Lipids in Energy Metabolism?* 87*What Is the Role of Protein in Energy Metabolism?* 90*How Do We Know Which Nutrient Is Being Used for Fuel?* 91*How Do Dietary Fats Act as Key Regulators of Energy Balance?* 92*The Metabolic Fate of Ingested Food: Summary* 97**Energy Expenditure: Metabolic Rate 97***How Is Resting Energy Expenditure Determined?* 97*What Factors Affect RMR?* 98*Does Exercise Elevate RMR?* 101*What Is the Relationship Between RMR and Obesity?* 102**Case Study. The Lawyers, Part 1 103***Metabolic Rate: Summary* 103**Energy Expenditure: Adaptive Thermogenesis 103***What Is the Mechanism for Adaptive Thermogenesis?* 104*Is Thermogenesis Defective in Obesity?* 106*Adaptive Thermogenesis: Summary* 107**Case Study. The Lawyers, Part 2 108**

Activity Energy Expenditure: Fidgeting, Exercise, and Other Physical Activities	108
<i>How Is Activity Energy Expenditure Measured?</i>	109
<i>What Is the Relationship Between Activity Energy Expenditure and Weight?</i>	109
Case Study. The Lawyers, Part 3	113
<i>Activity Energy Expenditure: Summary</i>	113
Conclusions About Energy Metabolism	113
References	114

CHAPTER 4

Regulation of Eating Behavior and Body Weight	119
Homeostasis and Regulation of Weight	120
The Brain: Central Regulator of Weight	121
<i>What Is the Role of the Brain in Regulating Weight?</i>	122
<i>Which Neurotransmitters Are Involved in Regulating Weight?</i>	123
<i>How Else Does the Brain Regulate Energy Balance?</i>	125
<i>The Brain: Summary</i>	126
The Digestive System: Receptor and Effector in Regulation of Weight	127
<i>How Do the Taste and the Smell of Food Contribute to Weight Regulation?</i>	127
<i>How Is the Digestive System Involved in Regulating Intake?</i>	129
<i>What Is the Function of Insulin in Hunger and Satiety?</i>	131
<i>The Digestive System: Summary</i>	131
Case Study. The Hungry Family, Part 1	132
Storage Fat: An Active Participant in Weight Regulation	132
<i>How Do the Body Fat Stores Develop?</i>	132
<i>What Determines Fat Cell Number and Size?</i>	133
<i>What Are the Other Functions of Adipose Tissue?</i>	135
<i>What Determines Where Body Fat Is Deposited?</i>	138
<i>Storage Fat: Summary</i>	141
BAT: Effector of Energy Expenditure	141
<i>How Does Thermogenesis Occur?</i>	142
<i>Is BAT Defective in Obesity?</i>	142
<i>BAT: Summary</i>	142
Genetic Factors and Body Composition	143
<i>How Are Traits Inherited?</i>	143
<i>What Genes Might Be Obesity-Promoting?</i>	144
<i>What Other Genetic Factors Might Promote Weight Gain?</i>	145
Case Study. The Hungry Family, Part 2	147
<i>How Do Heredity and Environment Interact?</i>	147
<i>Genetic Factors and Body Composition: Summary</i>	150
Conclusion	150
Case Study. The Hungry Family, Part 3	151
References	151

PART III Nutrition for Health and Weight Management

CHAPTER 5

The Energy Nutrients and Weight Management 155

Components of a Healthy Diet 156

Where Are the Problems in the American Diet? 156

Components of a Healthy Diet: Summary 157

Carbohydrates: Primary Constituents of the Diet 157

Why Do We Need Dietary Carbohydrates? 157

Do Sugars Harm Health and Cause Obesity? 159

How Does Carbohydrate Modification Promote Health and Weight Management? 163

The Impact of Sugar Replacers on Health and Weight Management 165

Carbohydrates: Summary 167

Lipids: Key Players in Health and Weight Management 167

What Are Fatty Acids? 167

Do We Need Cholesterol? 168

How Do Trans Fatty Acids Affect Health? 171

Does Dietary Fat Make People Obese? 171

Case Study. Personal Diet Analysis, Part I 176

What Is the Impact of Low-Fat Foods and Fat Substitutes on Health and Weight Management? 176

Lipids: Summary 179

Protein: Builder and Maintainer of Body Tissues 179

What Do Proteins Do? 179

How Does Protein Modification Promote Health and Weight Management? 181

Protein: Summary 184

Dietary Approaches to Weight Management 184

How Are Food Guides Used for Diet Planning? 184

What Are Dietary Approaches that Address Health Concerns in Overweight/Obesity? 188

Dietary Approaches to Weight Management: Summary 191

Case Study. Personal Diet Analysis, Part 2 191

References 192

CHAPTER 6

Vitamins, Minerals, and Water 195

Determining Optimal Micronutrient Intake 196

What Are DRIs? 196

How Should DRIs Be Used? 197

Determining Optimal Micronutrient Intake: Summary 197

Fat-Soluble Vitamins 197

Vitamin A and Carotenoids 198

Vitamin E 202

Vitamin D	203
Vitamin K	205
<i>Fat-Soluble Vitamins: Summary</i>	206
Water-Soluble Vitamins	206
Thiamin, Riboflavin, and Niacin	206
Vitamin B ₆ , Pantothenic Acid, and Biotin	208
Folate and Vitamin B ₁₂	210
Vitamin C (Ascorbic Acid)	212
<i>What Other Vitamins Should We Be Concerned About?</i>	214
Case Study. Personal Diet Analysis, Part 3	215
<i>Water-Soluble Vitamins: Summary</i>	215
Body Water	215
<i>Why Is Water Essential?</i>	215
<i>Body Water: Summary</i>	218
The Minerals	218
Calcium, Phosphorus, and Magnesium	219
Other Major Minerals	222
Iron and Zinc	223
Selenium and Other Trace Minerals	226
<i>Body Water and Minerals: Summary</i>	228
Case Study. Personal Diet Analysis, Part 4	228
The Role of Micronutrients In Weight Management	228
<i>How Does Fruit and Vegetable Consumption Relate to Weight Management?</i>	228
<i>Do Dairy Products Help People Lose Weight?</i>	229
Case Study. Personal Diet Analysis, Part 5	230
<i>The Role of Micronutrients in Weight Management: Summary</i>	230
References	230

PART IV Physical Activity for Health and Weight Management

CHAPTER 7

Physical Activity and Exercise: The Basics	235
Body Systems Involved in Physical Activity	236
<i>What Are the Components of the Cardiorespiratory System?</i>	236
<i>What Are the Key Components of the Musculoskeletal System?</i>	241
<i>Body Systems Involved in Physical Activity: Summary</i>	244
Benefits of an Active Lifestyle	245
<i>What Cardiorespiratory Improvements Result from Activity?</i>	245
<i>What Musculoskeletal Improvements Result from Activity?</i>	247
<i>How Does Physical Activity Affect Body Fatness?</i>	249
<i>What Are Some Other Health Benefits of Physical Activity?</i>	249
<i>Benefits of an Active Lifestyle: Summary</i>	250
Case Study. Married and Thinking About Children, Part I	251

Benefits of an Active Lifestyle Throughout the Lifespan	251
<i>What Are Exercise Benefits in Childhood?</i>	251
<i>What Are Exercise Benefits During Pregnancy?</i>	252
<i>What Are Exercise Benefits for Older Adults?</i>	254
<i>Benefits of an Active Lifestyle Throughout the Lifespan: Summary</i>	256
Case Study. Married and Thinking About Children, Part 2	256
Physical Fitness Assessment	256
<i>Why Assess Physical Fitness?</i>	257
<i>How Is Cardiorespiratory Fitness Assessed?</i>	257
<i>How Is Body Composition Assessed?</i>	261
<i>How Is Muscular Fitness Assessed?</i>	262
<i>How Is Flexibility Assessed?</i>	266
<i>Physical Fitness Assessment: Summary</i>	268
Case Study. Married and Thinking About Children, Part 3	268
References	269

CHAPTER 8

Physical Activity, Health, and Weight Management	271
Role of Physical Activity in Weight Management	272
<i>What Are the Fat-Burning Effects of Low- to Moderate-Intensity Activity?</i>	272
<i>What Are the Fat-Burning Effects of High-Intensity Activity?</i>	273
<i>What Are the Advantages of Preserving Lean Body Mass?</i>	274
<i>How Does Activity Affect Appetite?</i>	274
<i>Does Exercise Prevent Weight Regain?</i>	275
<i>Role of Physical Activity in Weight Management: Summary</i>	276
Developing Activity Programs That Work	276
<i>Which Types of Activity Are Most Effective for Weight Management?</i>	276
<i>How Is the Appropriate Intensity of Exercise Determined?</i>	278
<i>How Much Exercise Is Enough?</i>	282
<i>Is Physical Activity Advisable for the Severely Obese?</i>	285
<i>How Can Physical Activity Be Incorporated into Daily Life?</i>	285
<i>Developing Activity Programs that Work: Summary</i>	287
Case Study. The Novice Exerciser, Part I	287
Keeping Physical Activity Safe	288
<i>What Is the Risk of Sudden Death During Exercise?</i>	288
<i>How Should People Be Screened for Participation in Physical Activity?</i>	289
<i>What Are Other Considerations for Safe Exercise?</i>	295
<i>Who Can Safely Exercise?</i>	296
<i>Keeping Physical Activity Safe: Summary</i>	297
Motivating People to Adopt an Active Lifestyle	297
<i>Who Is—and Isn't—Active?</i>	297
<i>How Do We Motivate People to Initiate Physical Activity?</i>	298
<i>How Do We Motivate People to Adhere to Physical Activity?</i>	301
<i>Motivating People to Adopt an Active Lifestyle: Summary</i>	303

Importance of Activity in Health and Weight Management	303
Case Study. The Novice Exerciser, Part 2	304
References	304

PART V Approaches to Weight Management

CHAPTER 9

Behavioral Approaches to Weight Management	307
How People Change	308
<i>Stages of Change Theory</i>	309
<i>How People Change: Summary</i>	310
Behavioral Strategies for People Thinking About Change	311
<i>What Characterizes the Precontemplation Stage?</i>	311
<i>How Does the Health Belief Model Explain Early Stages of Change?</i>	311
<i>What Are Some Strategies for Precontemplators?</i>	312
<i>Behavioral Strategies for People Thinking About Change: Summary</i>	313
Case Study. The Ex-Football Player, Part 1	314
Behavioral Strategies for People Ready to Act	314
<i>What Characterizes the Contemplation and Preparation Stages?</i>	314
<i>How Does the Theory of Planned Behavior Help Explain Readiness for Change?</i>	314
<i>What Are Some Strategies for People Ready to Act?</i>	315
<i>Behavioral Strategies for People Ready to Act: Summary</i>	316
Behavioral Strategies for People Taking Action	317
<i>What Characterizes the Action Stage?</i>	317
<i>How Does Social-Cognitive Theory Explain Behavior Change?</i>	317
<i>What Are Some Strategies for Action?</i>	318
<i>Behavioral Strategies for People Taking Action: Summary</i>	324
Case Study. The Ex-Football Player, Part 2	325
Behavioral Strategies for Maintenance and Termination	325
<i>What Characterizes the Maintenance and Termination Stages?</i>	325
<i>What Are Some Strategies for Maintenance?</i>	326
<i>Do People Who Keep Off Lost Weight Have Secrets of Success?</i>	329
<i>Behavioral Strategies for Maintenance and Termination: Summary</i>	331
Skill Building for Modifying Diet and Activity	331
<i>What Physical Activity Skills Are Needed?</i>	331
<i>What Dietary Skills Are Needed?</i>	332
<i>What Are Some Strategies for Modifying Dietary Fat Intake?</i>	332
<i>What Are Some Strategies for Controlling Calories?</i>	334
<i>Skill Building for Modifying Diet and Activity: Summary</i>	336
Culture and Behavior Change	337
<i>What Is Culture?</i>	337
<i>How Does Culture Influence Weight Management?</i>	338

<i>How Can Behaviorally Based Interventions Become Culturally Relevant?</i>	340
<i>Culture and Behavior Change: Summary</i>	341
Expected Outcomes from a Behavioral Approach to Weight Management	341
Case Study. The Ex-Football Player, Part 3	342
References	342

CHAPTER 10

Non-Behavioral Approaches to Weight Management	347
Weight-Loss Drugs	348
<i>What Characterizes a Good Weight-Loss Drug?</i>	348
<i>Which Drugs Reduce Energy Intake?</i>	349
<i>Can Drugs Reduce Fat Absorption?</i>	352
<i>What About Over-the-Counter Drugs?</i>	353
<i>Are New Drugs on the Horizon?</i>	354
<i>How Effective Is Drug Therapy?</i>	355
<i>Weight-Loss Drugs: Summary</i>	356
Case Study. The Traveling Man, Part 1	357
Dietary Supplements	357
<i>How Are Dietary Supplements Regulated?</i>	357
<i>Which Supplements Claim to Promote Weight Loss?</i>	359
<i>How Can Fraudulent Products and Practices Be Avoided?</i>	363
<i>Dietary Supplements: Summary</i>	365
Low-Calorie Diets	365
<i>What Are the Physiological Effects of Caloric Reduction?</i>	365
<i>What Are Very-Low-Calorie Diets?</i>	367
<i>How Effective Are Low-Calorie Diets?</i>	369
<i>How Can Consumers Protect Themselves from Fraudulent Low-Calorie Diet Programs?</i>	374
<i>Low-Calorie Diets: Summary</i>	375
Case Study. The Traveling Man, Part 2	375
Weight-Loss Surgery	375
<i>Who Should (and Who Should Not) Have Bariatric Surgery?</i>	376
<i>What Are the Most Common Bariatric Procedures?</i>	376
<i>How Effective Is Bariatric Surgery?</i>	378
<i>Weight-Loss Surgery: Summary</i>	380
Localized Fat Reduction	380
<i>What Is Cellulite?</i>	380
<i>Is Liposuction an Effective Treatment for Obesity?</i>	382
<i>Localized Fat Reduction: Summary</i>	384
Conclusion	384
Case Study. The Traveling Man, Part 3	384
References	385