

All Chapters:

- Reviewed and updated content throughout the text
- Enhance visual learning through new figures and tables
- New “Try It” activities accompany each “How To” box
- New “Diet Analysis Activities” incorporated into the “Nutrition Portfolio” sections at the end of each chapter
- Moved all Nutrition Calculation activities from the end of the chapters to the website

Chapter 1: An Overview of Nutrition

p. 16 New Table 1-4: Parts of a Research Article

Chapter 2: Planning a Healthy Diet

p. 36 Introduced the concept of nutrient profiling

p. 46 New section, “Recommendations versus Actual Intakes,” introduces the Healthy Eating Index and evaluates the current American diet against dietary guidelines

p. 46 New Figure 2-4: Recommendations and Actual Intakes Compared

p. 64 New Figure H2-1: Low-Fat Milk and Soy Milk Compared

p. 65 New Table H2-1: Good Vegetarian Sources of Key Nutrients

Chapter 3: Digestion, Absorption, and Transport

p. 84 New Figure 3-13: An Example of a Negative Feedback Loop (using gastrin)

p. 86 Description of how heart disease can damage the digestive tract (intestinal ischemia)

Chapter 4: The Carbohydrates: Sugars, Starches, and Fibers

p. 108 New photo to reinforce the concept that glucose is the primary fuel of the brain

p. 122 New photo to illustrate how consumers can read food labels to find whole grain products

p. 102 Additional information on resistant starch

p. 115 Moved introduction to Alternative Sweeteners from Highlight into main chapter; discussion of alternative sweeteners and weight control moved to Chapter 9; moved discussion on safety issues surrounding alternative sweeteners to Chapter 19

p. 116 New Table 4-2: Alternative Sweeteners

Chapter 5: The Lipids: Triglycerides, Phospholipids, and Sterols

- p. 137** New Figure 5-5: Diagram of Saturated and Unsaturated Fatty Acids Compared
- p. 147** New Figure 5-19: Lipid Transport via Lipoproteins
- p. 148** Added discussion on endocrine role of adipose tissue and introduced adipokines

Chapter 6: Protein: Amino Acids

- p. 175** Introduced the terms *primary*, *secondary*, *tertiary*, and *quaternary* to the discussion on protein structure
- p. 182** Simplified the discussion on fluid balance and added a photo of edema
- p. 185** Moved the discussions on deamination, transamination, ammonia production, and urea excretion from Chapter 7 (metabolism) to Chapter 6
- p. 199** New Figure H6-1: Nutritional Genomics
- p. 201** New Figure H6-3: Nutrient Regulation of Gene Expression

Chapter 7: Metabolism: Transformations and Interactions

- p. 208** Revised Figure 7-4: The Capture and Release of Energy by ATP
- p. 215** Simplified Figure 7-10: Glucose Enters the Energy Pathway
- p. 219** New Figure 7-15: A Mitochondrion (moved from figure of typical cell)
- p. 227** Moved the discussions on low-carbohydrate diets here from Highlight 9
- p. 236** Revised Table H7-3: kCalories in Alcoholic Beverages and Mixers to include grams of alcohol and additional drinks

Chapter 8: Energy Balance and Body Composition

- p. 252** Table 8-4: Body Mass Index (BMI) replaced BMI figure
- p. 253** New “How To: Determine BMI” feature on using the BMI table to determine current BMI and a desired BMI

Moved How To Determine Body Weight Based on BMI with mathematical equations from the last edition to the Instructors’ Manual

Chapter 9: Weight Management: Overweight, Obesity, and Underweight

- p. 275** Added discussion on adiponectin
- p. 276** New Table 9-1: Proteins Involved in Regulation of Food Intake and Energy Homeostasis
- p. 278** Introduce the term nonexercise activity thermogenesis (NEAT)
- p. 283** Added discussion on phentermine and diethylpropion to drug treatments
- p. 294** Added discussion on cognitive skills to support weight loss
- p. 305** Revised Highlight 9: The Latest and Greatest Weight-Loss Diet—Again

Chapter 10: The Water Soluble Vitamins: B Vitamins and Vitamin C

- p. 313** New Figure 10-1: Dose Levels and Effects
- p. 315** Adding discussion differentiating between “wet” and “dry” beriberi
- p. 328** Rewrote section on folate and cancer
- p. 336** Distinguishing symptoms and causes
- p. 339** Revised section on vitamin C and the common cold

Chapter 11: The Fat-Soluble Vitamins: A, D, E, and K

- p. 357** Clarified vitamin A’s roles in vision, gene regulation and bone development
- p. 361** New “How To” feature—Convert International Units (IU) to Weight Measurements
- p. 363** Provided descriptions of vitamin D’s many forms
- p. 364** Added details on vitamin D’s roles in gene regulation and disease development, including discussions on insufficiency, deficiency, and proposed recommendations
- p. 370** Added discussion on vitamin K and osteocalcin

Chapter 12: Water and the Major Minerals

- p. 388** Clarified the details of the renin-angiotensin-aldosterone pathway
New Figure 12-3: How the Body Regulates Blood Volume

Chapter 13: The Trace Minerals

pp. 425-427; Iron and Zinc absorption and transport
435-346

p. 442 Revised Figure 13-11: U.S. Population with Access to Fluoridated Water through Public Water Systems

p. 450 Revised Table H13-1: Phytochemicals—Their Food Sources and Actions

Chapter 14: Fitness: Physical Activity, Nutrients, and Body Adaptations

p. 458 Included Physical Activity Guidelines for Americans, 2008

p. 465 New Table 14-4: Fuels Used for Activities of Different Intensities and Durations

p. 476 Moved the discussion comparing sports drinks and water into the text and removed the “How To” feature

p. 477 New Table 14-7: Selected Sports Drinks Compared

p. 486 New Table H14-1: Substances Promoted as Ergogenic Aids

Chapter 15: Life Cycle Nutrition: Pregnancy and Lactation

p. 500 Elaborated on weight issues surrounding pregnancy, including new weight gain recommendations, weight gains compared with recommendations, pregnancy after gastric bypass, weight loss during pregnancy, and weight gains after pregnancy.

p. 515 Added short discussion on maternal PKU and aspartame use

Chapter 16: Life Cycle Nutrition: Infancy, Childhood, and Adolescence

p. 543 New Figure 16-8: Food Guide Pyramid for Young Children

p. 549 Expanded discussion on Childhood Obesity

p. 552 New Table 16-7: Recommended Eating and Physical Activity Behaviors to Prevent Obesity

p. 553 Included new Physical Activity Guidelines for Americans, 2008 (specific to children)

p. 553 New Figure 16-11: Physical Activity Pyramid for Kids

p. 559 New Table 16-11: Foods and Beverages That Meet Recommended Food Standards

Chapter 17: Life Cycle Nutrition: Adulthood and the Later Years

p. 581 Expanded discussion on immunity and inflammation in the aging process

p. 585 New Figure 17-3: Modified MyPyramid for Older Adults

p. 586 Added discussion on folate and zinc needs of older adults

Chapter 18: Diet and Health

p. 611 Expanded and integrated discussion of inflammation and its underlying role in chronic disease

p. 609 New Table 18-3: Risk Factors and Chronic Diseases

p. 609 New Figure 18-3: Interrelationships among Chronic Diseases

p. 629 New Figure 18-11: Recommendations for Reducing Cancer Risk

p. 630 Added the Healthy Eating Pyramid discussion of links between diet and health

Chapter 19: Consumer Concerns About Food and Water

p. 651 New Figure 19-1: Increases in Imported Foods

p. 664 Expanded discussion on Organic Foods

p. 665 New Table 19-5: Most and Least Pesticide-Contaminated Fruits and Vegetables

p. 668 Introduced bacteriophages—the mixture of viruses recently approved by FDA as a food additive

p. 653 Added information on H1N1 (swine flu)

p. 653 New Table 19-2: Prevention of H1N1 Infection

p. 669 Moved safety discussion on sugar alternatives to Chapter 19 from Chapter 4 Highlight

p. 674 Expanded discussion on bottled water

Chapter 20: Hunger and the Global Environment

p. 687 New Figure 20-2: The Poverty-Obesity Paradox

p. 693 Reorganized and refocused final third of the chapter on the environment and solutions

p. 700 Renamed and refocused Highlight: Environmentally Friendly Food Choices

p. 702 New Table H20-1: Environmental Impact of Commonly Eaten Seafood Choices