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learning nutrition can be exciting and engaging. Discovering Nutrition, Fifth Edition takes students on a fascinating journey beginning with curiosity and ending with a solid knowledge base and a healthy dose of skepticism for the endless ads and infomercials promoting “new” diets and food products. We want students to learn enough about their nutritional and health status to use this new knowledge in their everyday lives. Our mission is to give students the tools to logically interpret the nutrition information provided by the evening news, on food labels, in popular magazines, and by government agencies. Our goal is to help them become sophisticated consumers of both nutrients and nutrition information. Hopefully, students will come to understand that knowledge of nutrition allows them to personalize information rather than follow every guideline issued for an entire population.

Discovering Nutrition is unique in its behavioral approach. It challenges students to act, not just memorize the material. Familiar experiences and choices draw students into each chapter, and analogies illuminate difficult concepts. In addition, we address important topics that students are curious about, such as ethnic diets, functional foods, nutrient supplements, phytochemicals, vegetarianism, diets for athletes, diet and chronic diseases, food safety, and fad diets. We focus attention on alcohol, eating disorders, obesity, and complementary nutrition. Some instructors may wish to cover metabolism, so we have included a Spotlight on Metabolism and Energy Balance to provide a friendly tour of the metabolic pathways. Discovering Nutrition brings up-to-date nutritional research into your classroom. It features the latest standards: the Dietary Reference Intakes, 2010 Dietary Guidelines for Americans, and USDA’s Choose MyPlate.

Spotlight on Obesity and Weight Management

Obesity is a growing epidemic in the United States and worldwide, affecting over one-third of the American adult population and almost 20 percent of children and teens. New to the fifth edition of Discovering Nutrition, the Spotlight on Obesity and Weight Management takes an in-depth scientific, behavioral, and social look at this escalating problem. Rising rates of obesity resulting from overconsumption of energy-dense, sugar-laden, high-fat foods that are convenient, widely available, and inexpensive have become a significant public health concern. Overconsumption in combination with low intakes of nutrient-dense foods such as whole fruits, vegetables, unrefined grains, and low-fat dairy products is creating a nutritional imbalance that favors weight gain and poor health. To make matters worse, an increasingly sedentary lifestyle and decreased exercise and physical activity pave a path toward obesity and other serious, chronic, degenerative conditions. The Spotlight on Obesity and Weight Management takes a candid look at the obesity crisis, including the causes and health consequences of excess weight, and provides guidance for moving toward a healthier lifestyle.

Diet and Health

New to the fifth edition, Chapter 10, Diet and Health, explores the connection between nutrition and chronic diseases, including cardiovascular disease, hypertension, cancer, diabetes, and osteoporosis. For some, the linkage is pronounced; for example, the dramatic surge in obesity rates in the United States is a major reason why the incidence of type 2 diabetes has tripled since 1970. For others, the link is more surprising, such as evidence that shows a generous intake of vegetables and fruits can reduce the risk of cancer.

Spotlight on Dietary Supplements and Functional Foods

The revised Spotlight on Dietary Supplements and Functional Foods takes a hard look at the latest science behind the potential benefits and harmful effects of dietary and herbal supplements, as well as the professed benefits of functional foods. Making decisions about nutrition and health requires both consumers and professionals to stay informed and consult reliable sources before trying a new product or embarking on a new health regimen. The Spotlight on Dietary Supplements and Functional Foods considers claims made for products and therapies in terms of current scientific knowledge, but it also takes into account the regulatory and safety issues that are present.

Dietary Guidelines for Americans

The seventh edition of the Dietary Guidelines for Americans places stronger emphasis on improving poor diets
and increasing physical activity, two of the most important factors for combating the obesity epidemic. Eating a healthy balance of nutritious foods continues as a central point in the Dietary Guidelines, but simply balancing nutrients is not enough for health. Total calories also count, especially as more Americans are gaining weight. Because almost two-thirds of Americans are overweight or obese and more than half get too little physical activity, the 2010 Dietary Guidelines place a stronger emphasis on calorie control and physical activity. The report identifies several key recommendations. As you read the chapters, look for these recommendations highlighted in the margins.

**Choose MyPlate**

Choose MyPlate is part of an overall food guidance system that emphasizes the need for a more individualized approach to improving diet and lifestyle. MyPlate incorporates recommendations from the Dietary Guidelines for Americans and uses interactive technology found at www.ChooseMyPlate.gov. These interactive activities allow individuals to obtain more personalized recommendations for daily calorie levels based on the Dietary Guidelines for Americans and to find general food guidance and suggestions for making smart choices from each food group. Concepts from MyPlate and the Dietary Guidelines are covered throughout the text and are fully integrated into the text.

**Accessible Science**

Discovering Nutrition makes use of the latest in learning theory and balances the behavioral aspects of nutrition with an accessible approach to scientific concepts. This text is intended to be a comprehensive resource that communicates nutrition both graphically and personally.

We present technical concepts in an engaging, nonintimidating way with an appealing, stepwise, and parallel development of text and annotated illustrations. Illustrations in all chapters use consistent representations. Each type of nutrient, for example, has a distinct color and shape. Icons of an amino acid, a protein, a triglyceride, and a glucose molecule represent “characters” in the nutrition story and are instantly recognizable as they appear throughout the text.

This text is unique in the field of nutrition and leads the way in depicting important biological and physiological phenomena, such as emulsification, glucose regulation, digestion and absorption, and fetal development. Extensive graphic presentations make nutrition and physiological principles come alive. The illustrations use pictures to teach and are part of a multimedia package that coordinates the text with illustrations and software. The EatRight Analysis program is a fully integrated ancillary designed to help students track their diets, make choices, and hone their nutritional skills.

**New to This Edition**

For this Fifth Edition, the latest scientific evidence, recommendations, and national standards have been incorporated throughout. Specific updates include the following:

- New organization of the chapters allowing the material to flow in a more intuitive fashion
- New Learning Objectives clearly mapping to chapter content
- New Spotlight on Obesity and Weight Management offering a candid look at the obesity crisis
- New Diet and Health chapter examining the connection between nutrition and chronic disease
- New section on dietary guidelines around the world, including the Japanese Food Guide and Canadian recommendations
- Revised Spotlight on Dietary Supplements and Functional Foods providing a look at the professed benefits of dietary and herbal supplements as well as functional foods
- Revised and new FYI and Quick Bite features covering the Affordable Care Act, nutritional coaching, high protein diets, and more
- Updated Position Statements from the Academy of Nutrition and Dietetics (formerly the American Dietetic Association), the American Heart Association, the American College of Sports Medicine, and Dietitians of Canada
- Expanded discussion on preventing eating disorders, the impact of the college environment on eating disorders, and maladaptive coping patterns
How to Use This Text

Discovering Nutrition focuses on teaching behavioral change, personal decision making, and up-to-date scientific concepts in a number of novel ways. This interactive approach addresses different learning styles, making it the ideal text to ensure mastery of key concepts. Beginning with Chapter 1, the material engages students in considering their own behavior in light of the knowledge they are gaining. The pedagogical aids that appear in most chapters include the following:

The **Think About It** questions at the beginning of each chapter present realistic nutrition-related situations and ask students to consider how they would behave in such circumstances.

**Learning Objectives**, new to the *Fifth Edition*, focus students on the key concepts of each chapter and the material they will need to learn.
Position Statements from distinguished organizations such as the Academy of Nutrition and Dietetics, the American College of Sports Medicine, and the American Heart Association relate to the chapter topics and bolster the assertions made by the authors by showcasing concurrent opinions held by some of the leading organizations in nutrition and health.

Key Terms appear in boldface type the first time they are mentioned, with the accompanying definitions in the margin, making it easy for students to comprehend and retain material.

For Your Information offers more in-depth treatment of controversial and timely topics, such as unfounded claims about the effects of sugar, whether athletes need more protein, nutritional coaching, and the usefulness of the glycemic index.
Quick Bites sprinkled throughout the book offer fun facts about nutrition-related topics such as exotic foods, social customs, origins of phrases, folk remedies, medical history, and so on.

Key Concepts summarize previous content as well as highlight important information.

Label to Table helps students apply their new decision-making skills at the supermarket. It walks students through the various types of information that appear on food labels, including government-mandated terminology, misleading advertising phrases, and amounts of ingredients.
The Learning Portfolio at the end of each chapter collects—in one place—all aspects of nutrition information students need to solidify their understanding of the material. The various formats will appeal to students according to their individual learning and studying styles.

### Key Terms

- Adipocytes
- Adipose tissue
- Alpha-linolenic acid
- Atherosclerosis
- Cancer
- Chain length
- Cholesterol
- Choline
- Chylomicron
- Cis fatty acid
- Conjugated linoleic acid (CLA)
- Diglyceride
- Eicosanoids
- Essential fatty acids (EFAs)
- Fat replacers
- Fatty acids
- Glycerol
- High-density lipoproteins
- Hydrogenation
- Intermediate-density lipoproteins (IDLs)
- Lanugo
- Lecithin
- Linoleic acid
- Lipoproteins (LDLs)
- Monoglyceride
- Monounsaturated fatty acid
- Nonessential fatty acids
- Obesity
- Omega-3 fatty acid
- Omega-6 fatty acid
- Oxidation
- Phosphate group
- Phospholipids
- Phytosterols
- Polyunsaturated fatty acid
- Saturated fatty acid
- Squalene
- Sterols
- Subcutaneous fat
- Trans fatty acid
- Unsaturated fatty acid
- Very-low-density lipoproteins
- Visceral fat

### Study Questions

1. What do the terms saturated, unsaturated, and polyunsaturated, signify?
2. What does the hardness or softness of a fat typically signify?
3. Name the two essential fatty acids.
4. Which is the most common form of lipid found in fat?
5. List the major functions of triglycerides.
6. What are the positive and negative consequences of hydrogenating a fat?

### Study Points

- Try This
  - The Fat = Fullness Challenge

The goal of this experiment is to see whether fat affects your desire to eat between meals. Do this experiment on two consecutive breakfasts. Each meal is to include only

### Try This activities provide suggestions for hands-on activities that encourage students to put theory into practice. It will especially help students whose major learning style is experiential.
The Integrated Learning and Teaching Package
Qualified instructors can receive extensive Instructor Resources by contacting their Nutrition Account Specialist. Available resources include:

- Test Bank, including more than 850 questions
- Slides in PowerPoint format, featuring more than 500 slides
- Instructor’s Manual, containing lecture outlines, discussion questions, and answers to the in-text Study Questions
- Image Bank, supplying key figures from the text
- Sample Syllabus, showing how a course can be structured around this text
- Transition Guide, providing guidance in switching from the previous edition

EatRight Analysis
Dietary analysis software is an important component of the behavioral change and personal decision-making focus. EatRight Analysis, developed by ESHA Research and available through Jones & Bartlett Learning, provides software that enables students to analyze their diets by calculating their nutrient intake and comparing it to recommended intake levels. EatRight Analysis offers dietary software online at eatright.jblearning.com. With this online tool, you and your students can access personal records from any computer with Internet access. Through a variety of reports, students learn to make better choices regarding their diet and activity levels.
The Discovering Nutrition author team represents a culmination of years of teaching and research in nutrition science and psychology. The combined experience of the authors yields a balanced presentation of both the science of nutrition and the components of behavioral change.

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