

# the science of nutrition

Canadian Edition

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# Dedication

*This book is dedicated to my amazing family, friends, and colleagues—you provide constant support, encouragement, and unconditional love. It is also dedicated to my students—you continue to inspire me, challenge me, and teach me. —JLT*

*This book is dedicated to my wonderful colleagues, friends, and family—your guidance, support, and understanding have allowed this book to happen. —MMM*

*This book is dedicated to my strong circle of family, friends, and colleagues. Year after year, your support and encouragement sustain me. —LAV*

*This book is dedicated to my family—it would never have been completed without your support and patience. —KGP*

*This book is dedicated to my family—your encouragement and support have motivated me to complete the project. —DM*

# About the Authors



## **Janice L. Thompson, Ph.D., FACSM**

University of Bristol  
University of New Mexico

Janice Thompson earned a doctorate in exercise physiology and nutrition at Arizona State University. She is currently Professor of Public Health Nutrition at the University of Bristol in the Department of Exercise and Health Sciences and is also an adjunct faculty member at the University of New Mexico Health Sciences Center. Her research focuses on designing and assessing the impact of nutrition and physical activity interventions to reduce the risks for obesity, cardiovascular disease, and type 2 diabetes in high-risk populations. She also teaches nutrition and research methods courses and mentors graduate research students.

Janice is a Fellow of the American College of Sports Medicine (ACSM) and a member of the American Society for Nutrition (ASN), the British Association of Sport and Exercise Science (BASES), and The Nutrition Society. Janice won an undergraduate teaching award while at the University of North Carolina, Charlotte. In addition to *The Science of Nutrition*, Janice coauthored the Benjamin Cummings textbooks *Nutrition: An Applied Approach* and *Nutrition for Life* with Melinda Manore.

Janice loves hiking, yoga, travelling, and cooking and eating delicious food. She likes almost every vegetable except fennel and believes chocolate should be listed as a food group.



## **Melinda M. Manore, Ph.D., RD, CSSD, FACSM**

Oregon State University

Melinda Manore earned a doctorate in human nutrition with a minor in exercise physiology at Oregon State University (OSU). She is the past chair of the Department of Nutrition and Food Management at OSU and is currently a professor in the Department of Nutrition and Exercise Sciences. Prior to her tenure at OSU, she taught at Arizona State University for 17 years. Melinda's area of expertise is nutrition and exercise, especially the role of diet and exercise in health and prevention of chronic disease, exercise performance, weight control, and micronutrient needs. She has a special focus on the energy and nutritional needs of active women and girls across the life cycle.

Melinda is an active member of the Academy of Nutrition and Dietetics and the American College of Sports Medicine (ACSM). She is the past chair of the ADA Research Committee and the Research Dietetic Practice Group and

served on the ADA Obesity Steering Committee. She is a Fellow and current Vice-President of the ACSM.

Melinda is also a member of the American Society of Nutrition (ASN) and The Obesity Society and serves as chair of the USDA Nutrition and Health Committee for Program Guidance and Planning. Melinda writes the nutrition column and is an associate editor for the ACSM's *Health and Fitness Journal*, serves on editorial boards of numerous research journals, and has won awards for excellence in research and teaching. She has also coauthored the Benjamin Cummings textbooks *Nutrition: An Applied Approach* and *Nutrition for Life* with Janice Thompson.

Melinda is an avid walker, hiker, and former runner who loves to garden, cook, and eat great food. She is also an amateur birder.

## **Linda A. Vaughan, Ph.D., RD**

Arizona State University

Linda Vaughan is a professor and past chair of the Department of Nutrition at Arizona State University. Linda earned a doctorate in agricultural biochemistry and nutrition at the University of Arizona. She currently teaches, advises graduate students, and conducts research about independent-living older adults and the nutrient content of donated and distributed food from community food banks. Her area of specialization is older adults and life-cycle nutrition.

Linda is an active member of the Academy of Nutrition and Dietetics, the American Society of Nutrition (ASN), and the Arizona Dietetic Association. She has served as chair of the Research and Dietetic Educators of Practitioners practice groups of the American Dietetic Association. Linda has received numerous awards, including the Arizona Dietetic Association Outstanding Educator Award (1997) and the Arizona State University Supervisor of the Year award (2004).

Linda enjoys swimming, cycling, and baking bread in her free time.



## **Kathy Gottschall-Pass, Ph.D., RD**

University of Prince Edward Island

Kathy Gottschall-Pass is a professor and chair of the Department of Applied Human Sciences at the University of Prince Edward Island (UPEI). She obtained her doctorate in Human Nutrition from the University of Saskatchewan. She is a registered Dietitian who previously worked in research and development for the food industry and taught at St. Francis Xavier University prior to her tenure at UPEI. She teaches in the areas of food science, introductory nutrition and human metabolism. Kathy's research interests focus on food components



and nutritional factors involved in the prevention of chronic diseases and the mechanisms of their action. She is an active member of Dietitians of Canada (DC) and the Canadian Nutrition Society (CNS). She enjoys reading, cooking and learning about all things technological from her teenage children.



**Debbie L. MacLellan, Ph.D., RD, FDC**

University of Prince Edward Island

Debbie MacLellan earned a doctorate in nutrition at the University of Saskatchewan. She is currently a professor in the Department of Applied Human Sciences at the University of Prince Edward Island (UPEI) where she teaches in the areas of professional practice, research, food-service management, and introductory nutrition. She is also the Director of the Integrated Dietetic Internship program at UPEI. Debbie's research interests include school nutrition policy implementations, nutrition education and counselling, and the professional socialization of dietitians. Prior to her tenure at UPEI, Debbie worked as a registered dietitian in long term and acute care. She is an active member of Dietitians of Canada (DC) and is a past-Chair of the Board of Directors. Debbie has also served on the Professional Standards Advisory Committee for DC and is currently Chair of the Scientific Review Committee for the Canadian Foundation for Dietetic Research. She enjoys spending time with her family, especially her grandchildren, and reading mystery novels.

# Preface

Nutrition is a dynamic, evolving, and exciting science. Learning about the scientific fundamentals of nutrition—the essential components of food and their functions in biological processes—can be challenging. Accordingly, we have designed this text’s organization and pedagogy to make the material accessible, and to engage nutrition and other health science majors.

Maintaining health and preventing chronic disease is a main theme of this text. By organizing the text’s contents around the functions of vitamins and minerals and their effects on the body we aim to help students appreciate that groups of micronutrients have crucial interconnected roles. In our teaching, we have found that this functional approach enhances understanding and discourages the simple rote memorization of lists of nutrients.

Students must be able to use scientific knowledge to assess diets, to evaluate research, and to appraise nutrition information. But to achieve these goals, they must learn about current scientific knowledge and how to evaluate future findings. Accordingly, the text emphasizes an evidence-informed approach to practice and promotes active learning through critical thinking. Each chapter incorporates Case Studies and Evidence-Informed Decision Making discussions to promote the development of these skills.

## The Canadian Edition

Our primary goal in writing the Canadian edition of *The Science of Nutrition* was to create a reliable, accessible nutrition resource for Canadian students and instructors. Throughout the book you will find current Canadian material, including the following:

- Material from *Eating Well with Canada’s Food Guide*
- Canadian food regulations
- Canadian research and innovations
- Nutrition issues unique to Canadian populations
- Canadian data
- Canadian references
- Links to Canadian websites

## Organization

The book is divided into 19 chapters plus 7 appendices (4 of which are in the printed book and 3 of which are available online).

In Chapter 1 we provide an introductory overview of how nutrition contributes to good health. After briefly describing the essential nutrients, we discuss current nutrition recommendations and how they are used in dietary assessment. We conclude the chapter with an overview of the scientific method where students are challenged to think critically about the nutrition information and advice provided by the media and on the internet.

In Chapter 2 we outline the key components of a healthy diet and introduce students to *Eating Well with Canada’s Food Guide* and to nutrition labelling rules and regulations.

In Chapter 3 we begin with a discussion about why we eat the foods that we do. Then we present an overview of the processes of digestion, absorption, and elimination of food and nutrients.

In Chapters 4, 5, and 6 we describe the macronutrients in detail. Each chapter includes a discussion of the important roles these nutrients play in the human body and a more detailed description of how they are digested, absorbed, and metabolized. Here we also discuss important food sources and the health-related disorders associated with particular nutrients.

In Chapter 7 we examine the metabolism of the macronutrients and their important role in energy production. We also include a discussion on the metabolic responses to feeding and fasting and the hormonal regulation of metabolism.

In Chapter 8 we present a brief introduction to the micronutrients, phytochemicals, and functional foods. This chapter sets the stage for a more detailed discussion of these nutrients in Chapters 9, 10, 11, 12, and 13. We have used a functional approach for the discussion of the essential micronutrients. In Chapter 9 we examine the nutrients involved in energy metabolism. In Chapter 10 we explore the various nutrients involved in fluid and electrolyte balance. Then, in Chapter 11, we move into a discussion of the nutrients involved in antioxidant function. Chapter 12 follows with a consideration of the nutrients involved in bone health. Chapter 13 closes this group of chapters with a discussion of the nutrients involved in blood health and immunity.

In Chapters 14 and 15 we explore the concepts of energy balance and weight control and the role of physical activity in achieving health. We discuss the various methods used to evaluate body weight and composition and the factors that contribute to excess body weight. We also consider strategies that can be used to achieve and maintain a healthy weight through diet and exercise.

In Chapters 16 through 18 we concentrate on nutrition issues through the lifecycle. We explore the role that food and nutrients play in the promotion of health from preconception to older adulthood, and we discuss nutrients and nutrition-related concerns in the various life stages.

In Chapter 19 we discuss the issues related to food security and insecurity in Canada and around the world. We look at the populations most affected by food insecurity and possible ways to address the problem.

## Special Features of This Canadian Edition

### Test Yourself True or False?

1. A kilocalorie is a measure of the amount of fat in a food. **True or False?**
2. Proteins are not a primary source of energy for our bodies. **True or False?**

### Chapter Objectives After reading this chapter, you will be able to:

1. Define the term *nutrition*, p. 4.
2. Discuss why nutrition is important to health, pp. 6–8.
3. Identify the six classes of nutrients essential for health, pp. 10–15.

**Did You Know?**

Eating Well with Canada's Food Guide has been translated into ten different languages in addition to English and French! Translations include Arabic, Chinese, Farsi (Persian), Korean, Punjabi, Russian, Spanish, Tagalog, Tamil, and Urdu. You can download copies of these translations from [www.hc-sc.gc.ca/nr-an/food-guide-aliment/order-commande/guide\\_trans-trad-eng.php](http://www.hc-sc.gc.ca/nr-an/food-guide-aliment/order-commande/guide_trans-trad-eng.php).

### NUTRITION LABEL ACTIVITY

#### Recognizing Carbohydrates on the Label

Figure 4.17 on page 142 shows labels for two breakfast cereals. The cereal on the left (a) is a whole grain product with no added sugar, whereas the one on the right (b) is a processed and sweetened cereal. Consider the information shown and work through the questions below.

1. Examine the information listed as a subgroup on the label under **total carbohydrate**. How much sugar and how much fibre does each cereal contain?
2. What is the % Daily Value for carbohydrates for each cereal? What does this number mean?
3. For each cereal, calculate the number of calories and

### NUTRITION MYTH OR FACT?

#### Do Athletes Need More Protein Than Inactive People?

Roula is a competitive figure skater who trains five days a week. She tries to eat a healthy diet but often finds it difficult because of her busy training schedule and the fact that she has recently adopted a vegetarian lifestyle. Roula has been told that she needs to eat more protein to build muscle and ensure optimal performance. She decides to add a 20 grams protein supplement to her juice after each practice, which increases her usual protein intake to 90 grams per day. Roula's kcal intake is usually about 2400 kcal per day. She weighs 55 kg.



Students learn effectively when they are interested, enthusiastic, and actively engaged. We have taken care to incorporate features that facilitate teaching and learning the science of nutrition.

- Each chapter opens with a brief quiz entitled **Test Yourself**. These true–false questions pique interest in the topics to be covered in the chapter by raising and dispelling some common misconceptions about nutrition. Answers to these questions are provided at the end of each chapter.
- **Chapter Objectives** follow the chapter-opening quiz and outline the knowledge and skills to be learned. By providing a roadmap at the beginning of each chapter, the Objectives will help students to read and understand the material more efficiently and more effectively.
- **Key Terms** are boldfaced in the body of the text where they are defined. They are also restated with their definitions in the margin. For convenience, they are also collected in a **Glossary** near the end of the book.
- **Did You Know?** boxes bring attention to important Canadian research and issues.
- **Highlight** boxes provide additional information about a particular topic.
- **Nutrition Label Activities** guide students in how to critically assess the information given in particular Canadian food labels.
- **Nutrition: Myth or Fact?** boxes dispel common misconceptions and encourage students to critically evaluate information from advertising, mass media, and their peers.



- **You Do the Math** boxes provide examples and opportunities to work out quantitative calculations.
- A **Case Study** (with a set of Critical Thinking Questions) in each chapter presents a scenario that encourages students to apply the material they have learned in the chapter. All the Case Studies in the book are listed immediately following the Table of Contents.
- A **See for Yourself** box immediately preceding the Chapter Review offers brief, targeted activities that encourage active learning. This self-assessment feature provides students with the opportunity to learn about their own nutrition and health habits.
- A **Chapter Review** appears at the end of each chapter, and consists of the following elements:
  - **Test Yourself Answers** consisting of answers to the chapter-opening quiz.
  - A **Summary** that briefly reviews the key concepts of the chapter.
  - **Review Questions** that consist of multiple-choice and short-essay questions. Answers to all the Review Questions may be found near the end of the book.
  - Annotated **Weblinks** that help students start to explore particular topics in more detail.
- A robust **Evidence-Informed Decision Making** feature at the end of each chapter focuses on an important current issue. Here students are encouraged to think critically about the issue and to answer the Using the Evidence questions. All the Evidence-Informed Decision Making sections are listed immediately following the Table of Contents.
- For convenience, various **Tables of Dietary Reference Intakes** are given on the inside of the front and back covers.

## Instructor Supplements

### Instructor's Resource CD-ROM

We have carefully prepared an *Instructor's Resource CD-ROM* (ISBN: 978-0321-83711-0) to aid in presenting engaging lectures, providing additional activities, assessing students' answers to all the questions in the book, and preparing tests and exams. It includes the following items:

- **Instructor's Manual** that includes additional activities as well as answers to all the questions in the book (except for the answers to the Review Questions, which are given in the book itself).
- A **Testbank** available either in Word (called a **Test Item File**) or in a computerized format (called **Pearson TestGen**). Pearson TestGen is a powerful program that enables instructors to view and edit existing questions, create new questions, and generate quizzes, tests, exams, or homework. With Pearson TestGen instructors can also administer tests on a local area network, have the tests graded electronically, and have the results prepared in electronic or printed reports.
- **PowerPoint Slides** that can be used to help create lectures.
- An **Image Library** consisting of electronic files of all the figures and tables in the textbook.

### CourseSmart eTextbook

The **CourseSmart eTextbook** (978-0321-62474-1) version of this book represents a new way for instructors and students to access textbooks online, anytime, from anywhere. With thousands of titles across hundreds of courses, CourseSmart helps instructors choose the best textbook for

**CASE STUDY** **Nutrition Supplements for Older Adults**

Gustavo is a 71-year-old man with a history of high blood pressure who lives at home by himself. He has a very sedentary lifestyle but he has been losing weight since his wife died a year ago. He currently weighs 66 kg. Gustavo has limited cooking skills and often just has a bowl of soup for supper. He does not drink milk and recently started to limit his fluid intake after lunch in an attempt to minimize the number of trips to the bathroom in the evening. His daughter has been nagging him to start taking a multivitamin supplement and his doctor has suggested that he take a calcium and vitamin D supplement. Gustavo is referred to a dietitian who completes a dietary assessment. The results indicate that Gustavo's usual daily protein intake is adequate, but his energy intake is only 1000 kcal and he is not eating the recommended number of servings.

**SEE FOR YOURSELF**

**Are You at Risk?**

You could be one of many Canadians who have type 2 diabetes and don't know it. If you are age 40 or over, you are at risk for type 2 diabetes and should be tested at least every three years. If you check any of the boxes below, you should be tested for diabetes sooner or more often.

☐ I have a parent, brother, or sister with diabetes.

☐ I am a member of a high-risk group (Aboriginal, Hispanic, South Asian, Asian, or African-descent).

☐ I have health complications that are associated with diabetes.

☐ I gave birth to a baby that weighed over 4 kg (9 lb) at birth.

☐ I had gestational diabetes.

☐ I have been told I have impaired glucose tolerance or impaired fasting glucose.

☐ I have high blood pressure.

☐ I have high cholesterol or other fats in my blood.

☐ I am overweight (especially if I carry most of my weight around my middle).

☐ I have been diagnosed with polycystic ovary syndrome, acanthosis nigricans, or schizophrenia.

**EVIDENCE-INFORMED DECISION MAKING**

**Meat Consumption and Global Warming: Tofu to the Rescue?**

(a) The difference in greenhouse gas emissions associated with meat-based (a) versus vegetarian (b) meals is similar to the difference between driving an SUV versus an average sedan.

(b)

When it comes to greenhouse gas emissions, Canada had the third-worst record of the countries who were members of the Organisation for Economic Co-operation and Development (OECD) at the time of this study.<sup>10</sup> Which causes more greenhouse gas emissions: livestock production or transportation? The answer may surprise you according to the United Nations Food and Agriculture Organization (FAO). Livestock production generates more of the gas responsible for global warming—18%—than transportation.<sup>11</sup> The FAO estimates that livestock production accounts for:

- 9% of all carbon dioxide (CO<sub>2</sub>) production deriving from human activity
- 37% of all human-induced methane, a gas with 21 times the global warming potential (GWP) of CO<sub>2</sub>
- 60% of ammonia, which contributes to acid rain

• 65% of human-related production of nitrous oxide, a gas with 266 times the GWP of CO<sub>2</sub>.

How does this compare to emissions generated from production of food? A recent study from researchers at the University of Chicago concluded that an adult consuming an average daily number of calories from a typical mixed American diet causes the emission of 1483 kg of greenhouse gases when the emissions associated with consuming the same number of calories from plant sources are taken into account. For those tried, certainly this difference amounts to over 6% of the total U.S. greenhouse gas emissions.<sup>12</sup>

Livestock production is also a major source of land degradation, through both overgrazing and feed production. Livestock now use 30% of the earth's land surface for pasture or feed production. Aggressive deforestation, which has long been linked to global warming, is clearing more and more land for pasture. For example, in Latin

(a) Livestock production (a) and aggressive deforestation (b) both contribute to increased greenhouse gas emissions.

(b)

their class and give their students a new option for buying the assigned textbook as an eTextbook at a lower cost. For more information, visit [www.coursesmart.com](http://www.coursesmart.com).

## Acknowledgements

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When we decided to take on the task of writing the Canadian edition of this text, we really had no idea how much work this would entail. There are a myriad of little details that needed to be attended to in addition to the gathering of information related to Canadian nutrition research and practice. We would like to thank our student assistant, Sarah Nabuurs, for helping us check all of those details and for asking us questions from a student's point of view, which has made this book more student-centred. We would also like to thank the students in our introductory nutrition classes who have helped us test out some of our ideas and provided us with valuable feedback. We would like to thank all of the wonderful staff at Pearson for their dedication and commitment to this book. They are an incredibly professional group of individuals and we are extremely grateful to them for their patience and guidance. In particular, our developmental editor, Maurice Esses, provided us with invaluable support and encouragement throughout the writing process. His attention to detail and critical eye kept us on track and helped us to make improvements along the way. Finally, we would like to thank our colleagues, friends, and family members who have motivated us to keep going. This really has been a team effort.

Kathy Gottschall-Pass  
 Debbie L. MacLellan

# MasteringNutrition<sup>®</sup>

**MasteringNutrition** ([www.masteringnutrition.pearson.com](http://www.masteringnutrition.pearson.com)) is a course management system that makes it easy to organize your class, personalize your students' educational experience, and push their learning to the next level.

Designed to help you maximize class time, MasteringNutrition offers customizable, easy-to-assign and automatically graded assessments and pedagogical tools that motivate students to learn outside of class, and arrive prepared for lecture.

Developed by science educators for science students and professors, the Mastering platform has over one million active users, and a proven history with over 9 years of student use in 30 countries.

## Assignable Content

With MasteringNutrition, you can assign publisher-created pre-built assignments—pre-lecture tests, NutriCase Studies, and testbank questions—to get started quickly. You can import your own questions, and edit any of our questions or answers to match the precise language that you use.

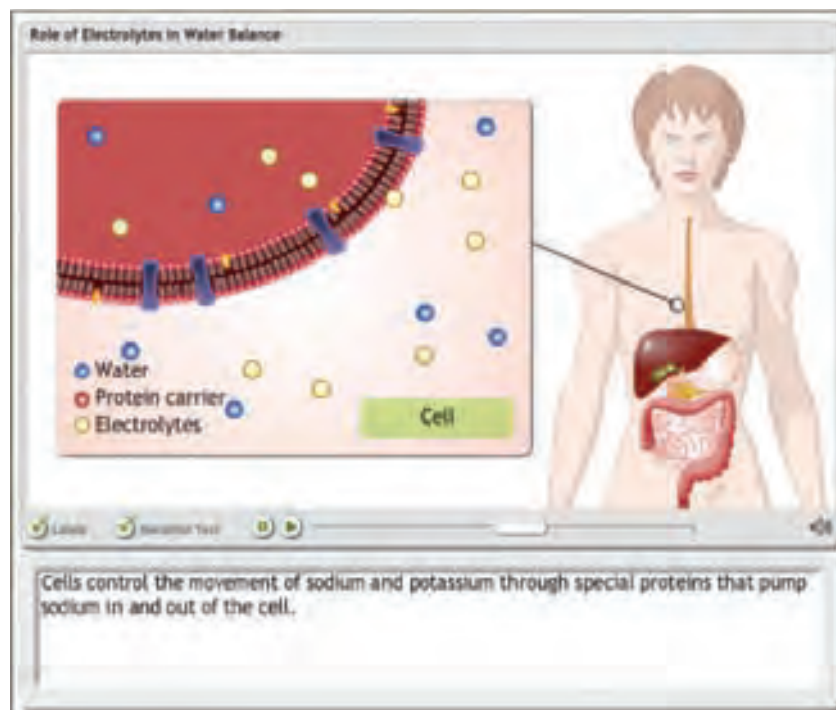
The system automatically grades every assignment that features machine-graded questions (multiple choice and fill-in-the-blank), and students' results appear in the gradebook. Note that instructor-graded questions (short answer and essay questions) must be graded by the professor.

## NutriTools

Students can experiment with 21 NutriTools—Build-a-Salad, Build-a-Pizza, Build-a-Meal, and more—to combine different food options, and thereby learn how to create healthier meals. NutriTools activities offer assignable questions.



## Animations



## Pre-Lecture Quiz

Ensure that students come to lectures prepared by assigning a Pre-Lecture Quiz featuring multiple choice, fill-in-the-blank, and short answer questions based on chapter content.

## Pearson Science of Nutrition eText

**Highlight** function allows students to highlight whatever they want to remember.

**Google®-based** search function.

**Zoom** lets students zoom in and out for better viewing.

**Hyperlinks** link to quizzes, activities, and animations.



**Notes** give you, the educator, the opportunity to push out any content that you highlight and notes to your class.

**Annotation** function provides students with the opportunity to take notes.

## NutriCase Studies

These audio case studies walk listeners through a real life nutrition challenge, and pose compelling questions that apply the chapter concepts to the case study. NutriCase Studies feature assignable multiple choice and true-false questions.

## Study Area

The Study Area of MasteringNutrition offers a plethora of resources that allow students to assess their knowledge of the material, and their progress.

## Prep Materials

Students have access to Get Ready for Nutrition, which features extra math and chemistry content related to nutrition.

## Cumulative Exam

Students can assemble their own practice cumulative exam by selecting the chapters they want to test their knowledge, and the number of questions per chapter. The system then draws on a variety of questions. Note that these questions are different than the ones offered in the test bank to which you have access. MasteringNutrition automatically grades answers, so students can get feedback and check their understanding right away.

## Gradebook

Get easy-to-interpret insights into students performance using the gradebook. MasteringNutrition automatically grades every assignment that features machine-grade questions. At a glance, you can see vulnerable students and challenging assignments.

The gradebook's diagnostics provide unique insight into the class, and student performance. Charts summarize the most difficult problems, students-at-risk, grade distribution, and score improvement over the duration of the course.

## Instructor Resources

You can access all of the resources that accompany The Science of Nutrition, Canadian Edition—the Instructor's Guide, PowerPoint, Image Library, PRS Questions, Test Item File, and TestGen—from MasteringNutrition.

## Study on the Go

Students will find a unique QR code featured at the end of each chapter that provides access to Study on the Go, an unprecedented mobile integration between text and online content. Students link to Pearson's unique Study on the Go content directly from their smartphones, allowing them to study whenever and wherever they wish! Go to one of the sites below to see how to download an app to your smartphone for free. Once the app is installed, the phone will scan the code and link to a website containing Pearson's Study on the Go content, including the popular study tools Glossary Flashcards, Animations, and Quizzes, which can be accessed anytime.

### ScanLife

<http://get.scanlife.com/>

### NeoReader

<http://get.neoreader.com/>

### QuickMark

<http://www.quickmark.com.tw/>





# MyDietAnalysis

Accessible via MasteringNutrition, MyDietAnalysis offers an accurate, reliable, easy-to-use program that helps students assess their lifestyles. Featuring a database of nearly 20 000 foods, the program assists in the tracking of diet and activity levels. Students can generate and submit reports electronically.

The screenshot shows the 'Diet Tracker - Day 1' interface. At the top, there's a navigation bar with 'Home', 'Profiles', 'Diet Tracker' (highlighted), 'Activity Tracker', 'Reports', 'My Class', and 'Help'. Below the navigation bar, there's a search bar and a 'Name This Day' field set to 'Day 1'. The main table lists food items with columns for 'Delete', 'Meal', 'Serving Size', 'Food', and 'Calories'. Two items are listed: 'Cereal, hot, oatmeal, plain, inst. pkt (Quaker)' with 100 calories and 'Blueberries' with 25 calories. The 'Total Calories' row shows 125. A 'Save Changes' button is at the bottom.

Delete	Meal	Serving Size	Food	Calories
<input type="checkbox"/>	Breakfast	1 each	Cereal, hot, oatmeal, plain, inst. pkt (Quaker)	100
<input type="checkbox"/>	Breakfast	1 serving	Blueberries	25
Total Calories				125

The screenshot shows the 'Activity Tracker - Day 1' interface. At the top, there's a navigation bar with 'Home', 'Profiles', 'Diet Tracker', 'Activity Tracker' (highlighted), 'Reports', 'My Class', and 'Help'. Below the navigation bar, there's a search bar and a 'Name This Day' field set to 'Day 1'. The main table lists activities with columns for 'Delete', 'Duration', 'Activity', and 'Calories'. Two items are listed: 'running, jogging, general' with 443 calories and 'Sedentary Activities of Daily Living \*' with 1,863 calories. The 'Total Calories' row shows 2,306. A 'Save Changes' button is at the bottom.

Delete	Duration	Activity	Calories
<input type="checkbox"/>	55 minutes	running, jogging, general	443
Sedentary Activities of Daily Living *			1,863
Total Calories			2,306

The current Activity list indicates an Activity Level of Low Active. The Calorie Recommendation for this Profile is based on an Activity Level of Active.

**Footnotes**

\* The sedentary activity level includes basic daily tasks such as brushing your teeth and bathing, housework, walking to work or class, and light yard work. These tasks are called Activities of Daily Living (ADL). If you engage in physical activity beyond the activities of daily living, you may increase your activity level. Strive for an active lifestyle for optimal health.

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