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**Gordon M. Wardlaw**

# Contemporary Nutrition

**Issues and Insights**

*Zebra  
Zucchini  
Taste like  
but is sweeter  
Our favorite!  
regular Zucchini*

Contemporary

# Nutrition

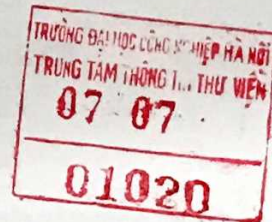
Issues and Insights

Fifth Edition

Gordon M. Wardlaw

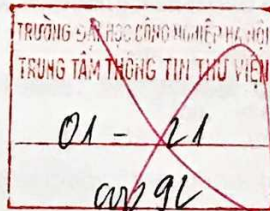
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# Preface

## To the Instructor

If you teach nutrition, you undoubtedly already find it a fascinating subject. However, nutrition can also be quite frustrating to teach. Claims and counterclaims abound regarding the need for certain constituents in our diets. Sodium is a good example. One group of researchers promotes a low-sodium diet for the general population as an effective measure against hypertension. Other groups state that this is much less of a concern compared to other habits, such as inactivity and adult weight gain. How does an instructor adequately convey seemingly conflicting messages to introductory students?

As an author and teacher, I too am aware of conflicting opinions in our field and thus draw on as many sources as possible in the continual updating of this textbook, now in its fifth edition. I have incorporated much new material, especially from recently published articles in major nutrition and medical journals; the 9th edition of *Modern Nutrition in Health and Disease*, edited by Shils, Olson, Shike; and *Present Knowledge in Nutrition*, edited by Bowman and Russell. In addition, available information on the latest Dietary Reference Intake revisions to the 1989 RDA is incorporated where appropriate.

### Personalizing Nutrition

One prominent theme in nutrition research today is *individuality*. Not all of us, for example, find that saturated fat in our diets raises our blood cholesterol values above recommended standards. Each person responds differently, often idiosyncratically, to nutrients, and I try to reinforce this point throughout the book.

Moreover even at this basic level, the text's discussions do not assume that all nutrition students are alike. Chapter content and features, such as Rate Your Plate, repeatedly ask students to learn more about themselves and their health status and to use their new knowledge to improve their health. After reading this textbook, students should be better equipped to understand how the nutrition information on the evening news, on cereal boxes, in popular magazines, and by government agencies applies to them. My goal is for students to understand that their knowledge of nutrition will allow them to evaluate and personalize nutrition information, rather than follow every guideline issued for an entire population. After all, a population by definition consists of individuals with varying genetic and cultural backgrounds, and these individuals have varying responses to diet.

As a final note on helping students bring nutrition down to a personal level, the book covers important questions students often bring to class, concerning topics such as ethnic diets, eating disorders, supplements, alternative therapies, vegetarianism, diets for athletes, and fad diets. Regardless of topic, the overall emphasis remains the same—the importance of understanding one's food choices and modifying one's diet to best meet personal needs.

### Audience

*Contemporary Nutrition: Issues and Insights* is designed for a non-majors audience, particularly those students with little or no background in college-level chemistry, physiology, or human biology. Those topics have, for the most part, been kept to a minimum and explained in a simple, straightforward manner wherever necessary. I have been careful to include the basic scientific foundation needed to adequately comprehend certain topics in nutrition, such as a basic discussion of protein synthesis in Chapter 6.

Because of the flexible chapter organization and pedagogical features, this book can be used with students of diverse educational backgrounds and interests. Real-life examples have been incorporated to appeal to the interest of college students in general.

### Organization

This book is organized into six parts that reflect the major topics typically covered in an introduction to the study of nutrition:

- Part One Nutrition: A Key to Health
- Part Two The Energy-Yielding Nutrients and Alcohol
- Part Three Vitamins and Minerals
- Part Four Energy: Balance and Imbalance
- Part Five Nutrition: A Focus on Life Stages
- Part Six Nutrition: Beyond the Nutrients

The Table of Contents also reflects the inclusion of two chapters not typically found in introductory textbooks: Chapter 7, Alcohol and Chapter 12, Eating Disorders. The expanded discussion of these topics is the result of feedback from instructors who felt it was important to provide their students with a thorough, balanced discussion of these relevant topics.

Although most frequently used in semester-long courses, the text's organization allows instructors to omit Parts or Chapters to fit the needs of quarter-length courses. I have also tried as much as possible to make each chapter function independently so that instructors can cover the material in the order that best fits their particular course needs.

## New to This Edition

Each edition of *Contemporary Nutrition: Issues and Insights* witnesses a profusion of new and rapidly changing information from the world of nutrition science. To give students an accurate picture of nutrition today, it is important to provide them with the most up-to-date information available. With the help of colleagues, reviewers, and my own students, I continually scour the latest research and update the text accordingly. I also carefully consider the feedback of instructors using this text to refine the content to better meet the needs of today's students. The following list highlights just some of the changes and updates that you will find in the fifth edition of *Contemporary Nutrition: Issues and Insights*.

### Chapter 1, What You Eat and Why

- More examples of the metric system in everyday life
- The important influence of one's psychological state on satiety and a practical result of that relationship
- The growing use of 'energy' bars by adults

### Chapter 2, Tools for Designing a Healthy Diet

- Current attention to energy density in the diet
- Pyramids promoted by the Mayo Clinic and the new book by Dr. Walter Willett
- New figure showing graphic representation of appropriate serving sizes

### Chapter 3, The Human Body: A Nutrition Perspective

- Expanded coverage of the cell and its various organelles
- Expanded coverage of the nervous system
- Expanded coverage of the cardiovascular system
- Expanded coverage of the urinary system

### Chapter 4, Carbohydrates

- The new sugar replacement sucralose (Splenda)
- A table to estimate fiber intake
- The glycemic index of foods is developed in detail

### Chapter 5, Lipids

- Latest dietary advice from the American Heart Association and the National Cholesterol Education Program

- An example of a diet containing 40% of calories from fat as advocated by Dr. Walter Willett and for those people with Syndrome X (also called metabolic syndrome)
- Practical use of the new margarines with plant sterols

### Chapter 6, Proteins

- New Nutrition Insight on soy protein
- Simple discussion and new figure on protein synthesis
- Vegetarian pyramid from Oldways Preservation & Trust

### Chapter 7, Alcohol

- New chapter is an expanded version of a Nutrition Issue in the previous edition
- Expanded look at the benefits and risks of use of alcohol
- Risks of binge drinking
- Figure showing the relationship of alcohol intake and blood-alcohol concentration

### Chapter 8, Vitamins

- Grouping of photos showing the clinical results of various vitamin and mineral deficiencies
- The latest vitamin recommendations from the Food and Nutrition Board
- Expanded list of rich sources of vitamins

### Chapter 9, Water and Minerals

- The latest recommendations for minerals from The Food and Nutrition Board
- Expanded list of rich sources of minerals
- Table to estimate calcium intake

### Chapter 10, Energy Balance and Weight Control

- Latest statistics regarding the growing problem of overweight and obesity in North America
- New websites for students to explore
- New annotated readings for further study

### Chapter 11, Nutrition: Fitness and Sports

- Growing use of 'energy' bars and gels
- Latest fluid replacement guidelines
- Expanded list of popular ergogenic aids in the Nutrition Issue

### Chapter 12, Eating Disorders: Anorexia Nervosa, Bulimia Nervosa, and Other Conditions

- Expanded discussion of disordered eating now begins the chapter
- Latest guidelines for diagnosis and treatment of eating disorders published by the American Psychiatric Association