

NUTRITION

F O R L I V I N G

THIRD EDITION



Janet L. Christian · Janet L. Greger

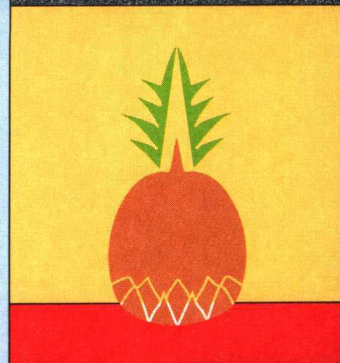
NUTRITION FOR LIVING

THIRD EDITION

Janet L. Christian

Janet L. Greger

University



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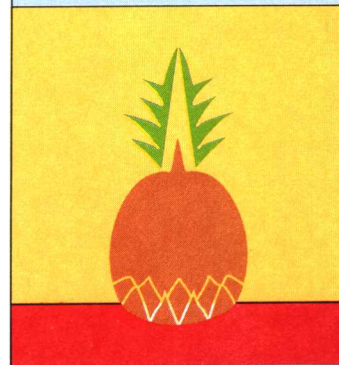
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Preface



This book is intended for students with little or no science background, enrolled in college introductory nutrition courses. Our goal in writing it is to present the science of nutrition in a lively and personal way. We want to help people focus on their own eating practices and evaluate their habits in keeping with guidelines that support good health. While intent on saying what nutrition can accomplish, we are equally straightforward about its limitations.

The basic organization of earlier editions of *Nutrition for Living* has been maintained; we have not changed the topics or the order in which they are covered. The scope of this book, though, has been broadened considerably to include topics that reflect the ever-changing study of nutrition.

Each chapter incorporates new scientific findings and nutrition recommendations that were released up to the time of the book's publication. For example, the 1989 *Recommended Dietary Allowances* are incorporated throughout the text, and the 1990 report *Nutrition During Pregnancy* substantially affected the content of Chapter 16. Even impending changes in nutrition labeling are mentioned in appropriate chapters, and the proposed Reference Daily Intakes (RDIs) and Daily Reference Values (DRVs) are provided in Appendix J.

Some chapters contain so much new material that they were almost completely rewritten; this is true for "Why You Eat What You Do," "Effects of Food Production and Processing on Nutrients," "Beyond Nutrients: What Else Is in Your Food?" and the entire life-cycle section. In response to current interests, we also developed certain topical themes more fully. Throughout this edition, you will find more information about vegetarian eating and about how nutrition and exercise together enhance good health.

Discussions in this text begin with nutrition and the human body, work through the individual nutrients and food safety, and end with a section dealing with life-cycle nutrition issues. Part One sets the stage for these topics by describing our understanding of how nutrition is important to health, by explaining and illustrating how we can assess our personal nutritional status, and by reviewing the basic anatomy and physiology of the gastrointestinal system.

Part Two presents the macronutrients, the building materials needed in large quantities by the body for energy production. The chapter "Energy

Sources and Uses” falls early in this section, following an opening chapter on water. This early position of the energy chapter provides useful background for the next chapters and also allows the flexibility to discuss weight control issues. The next three chapters—“Carbohydrates,” “Lipids,” and “Proteins”—make up most of the unit and discuss nutrient functions, distribution in the body, dietary sources, recommended levels of intake, health effects of deficiencies and excesses, evaluation of one’s own nutritional status, and just enough about chemical structures to make all of that understandable.

Part Three on eating behaviors provides a change of pace and an opportunity to apply the technical material learned in Part Two to everyday life. The first chapter, “Why You Eat What You Do,” spotlights the factors that influence our daily food choices. A favorite topic of students—body weight—is thoroughly discussed in the next chapter. Anorexia nervosa and bulimia are covered in a separate short chapter on eating disorders.

Part Four returns to the nutrients, with a comprehensive, up-to-date discussion of vitamins and minerals in the same detail as the macronutrient chapters. Part Five, *Food Safety: A Concern of the 90s*, speaks to the worries many people have that our food supply is exposing us to more hazards and providing us with fewer nutrients than it did before. We’ll look at the effects of food processing on nutrients and consider whether we are likely to be at risk from food-borne microorganisms, environmental toxicants, naturally occurring toxicants, and additives.

The final unit, *Nutrition Through Your Life*, examines how nutritional needs change as we grow older. Each phase of life—from infancy through adulthood—requires special consideration regarding nutrition. Topics covered include breast-feeding versus bottle-feeding of infants, obesity in children, nutrition and behavior, and the importance of both nutrition and exercise in maintaining long-term health. Finally, we will see that our education in nutrition must be a continuing process.

We created this book to be flexible enough to meet the restrictions of almost any course calendar and the preferences of most instructors. It will continue to serve as a useful reference after the course is over. Although it is logical to cover the nutrient chapters before those on the life cycle, the other topics can be read in almost any sequence. For example, Chapter 9 (“Why You Eat What You Do”) could be discussed at any time, and the weight control chapter, Chapter 10, could be covered elsewhere in the course. Similarly, the food science chapters in Part Five could easily be relocated as a unit or used independently.

Features of This Book

In the Third Edition, we enhanced the features that teachers and students have valued in the earlier editions. A new Critical Thinking feature will challenge your students further and be the basis for lively classroom discussion.

Critical Thinking Case Studies. The important new attractions of the Third Edition are the Critical Thinking Case Studies. These concern nutrition topics that are controversial, timely, and have no easy answers: “Is Bottled Water Better?” “Fiber, Fiber Everywhere—So What?” and “Food Safety of Poultry: Whose Job?” These sections help students gain experience in making operational decisions (whether to eat a certain type of food, for example), even when current scientific knowledge is unable to support a clear-cut right answer.

To help students make decisions about such issues, each Critical Thinking exercise consists of four parts (1) *The Situation* provides a context for the facts. (2) The accuracy of the presented facts is examined in *Is the information accurate and relevant?* (3) Other important factors regarding the issue are discussed in *What else needs to be considered?* (4) *What do you think?* presents a series of viable options. The student is challenged to choose what action is most suitable for him or her.

Slice of Life. By popular demand, Slice of Life returns to the Third Edition. These case study examples—both ordinary and extraordinary—bring to life the relevance of the information just presented. This feature helps students see how nutritional principles apply to themselves and the foods they typically eat.

Margin Glossary. Important terms appear in red boldface type and are defined in the margins of the text, where the word first appears.

Assessment Exercises. The twelve self-assessment sections encourage your students to see how their nutrient intake compares with recommended intakes. Some assessments are taken directly from the second edition of *Nutrition for Living*, while others are completely new or modified from past assessments. For example, a new assessment in the energy chapter uses formulas published in the 1989 RDAs to estimate daily energy needs, and a new assessment in the carbohydrate chapter invites students to estimate their dietary fiber intake, a topic of great current interest.

For the convenience of both teachers and students, an Assessment Pad is packaged free with this text at the option of the professor. This pad contains 4 copies of each assessment.

Nutrition for Living. The Nutrition for Living sections offer advice about how to achieve better nutrition habits. They include suggestions regarding food planning, selection, and preparation methods that are consistent with current nutrition goals.

Supplementary Materials

A complete package of supplementary materials accompanies this text.

- The student **Study Guide**, written by Dr. Susan Nitzke of the University of Wisconsin-Madison. This helpful guide follows the organization of

the textbook. Each chapter provides an overview of the equivalent text chapter, a suggested study plan, learning objectives, a detailed chapter outline, a section on helpful memory aids, self-testing exercises, and application exercises. The memory aids section includes suggestions for constructing one or more concept maps, which are diagrams that show important concepts and the relationship between them. This unique exercise will help the students organize their knowledge in such a way that they are more likely to retain it. Every chapter of the study guide ends with a sample concept map, a list of answers to the testing exercises, and sample answers to the application exercises.

- **The Instructor's Guide**, by Dr. Susan Nitzke. This guide includes chapter learning objectives, a brief outline of each chapter in the text, suggestions for how to use the new critical thinking case studies in the classroom, a list of additional classroom resources, and a testbank of multiple choice and short answer questions. Testbank questions are correlated with the learning objectives and are classified according to level of difficulty.
- **Computerized Testing Software**. All test questions in the Instructor's Guide are also available on The Benjamin/Cummings Microcomputer Testing Software, available for the IBM PC, AT, and XT, the Apple II family, and the Macintosh computers. This software is available for qualified adopters of *Nutrition for Living* by contacting the publisher or your local representative.
- **Color Transparencies**. A set of 50 transparency acetates of key illustrations and tables in the text will be available to qualified adopters of the text.

Acknowledgments

Each edition of this text has provided proof-positive that a book requires the cooperation of many people; we do, indeed, have a large number to thank.

At Benjamin/Cummings, we have appreciated the strong commitment to this project from the outset; it was extremely helpful to meet early on with the entire staff assigned to the book, plus General Manager Sally Elliott, to plan this edition. The members of the editorial team—Connie Spatz, Pat Coryell, and Lisa Donohoe—each have added their unique perspectives and insights to help in shaping this edition. Connie handled the important transition between editions and got the wheels in motion for this one before moving along to greater responsibilities. Pat, new to Benjamin/Cummings, arrived brimming with ideas, but also respected our convictions. Lisa brought her very successful experience from other projects to this one, and raised our consciousness about consumer interests . . . and parenting twins!

We thank designer Mark Ong for the clean and engaging appearance of the book and for carrying on the tradition of our text covers with this edi-

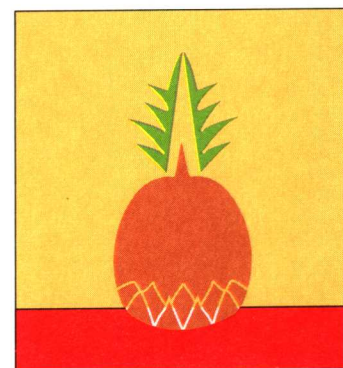
tion's luscious-looking pineapple. And thanks to Darcy Lanham whose colorful "photo finds" highlight the messages on these pages. Finally, we appreciate Janet Vail's and John Walker's effective orchestration and steady tempo through the complicated production process; their efforts brought all the disconnected notes, phrases, and themes together into a harmonious book.

Here at home, we thank our friend and colleague Susan Nitzke, the author of the Instructor's Guide and student Study Guide that accompany this text. In these ancillaries, she has utilized not only her extensive nutrition knowledge but also her expertise about how people learn. In addition, her stamp is on the text: As a leader in the use of critical thinking in nutrition education, she has been a valued resource as we developed the new Critical Thinking Case Studies; in fact, she has been a helpful soundingboard throughout our writing of the text.

Finally, we appreciate the many careful reviewers and consultants who scrutinized and commented on various portions of this book, contributing to its refinement; and we are indebted to all those instructors who shared their experiences with using previous editions. Their classrooms are reflected in the pages of this edition.

We warmly thank you all.

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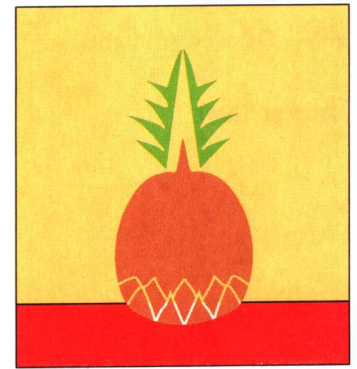
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YOU ARE WHAT YOU EAT



