

TOTAL FITNESS

*Exercise, Nutrition,
and Wellness*



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To my family,
Betsy, Haney, Will, Mom, and Dad.
Your love and encouragement have always
meant more than you will ever know.
Stephen L. Dodd

To my mother,
who encouraged me to pursue academic endeavors.
Scott K. Powers

Preface

Good health is our most precious possession. Although it is usually only in times of illness or injury that we really appreciate good health, more and more people are realizing that health is not simply the lack of disease. Indeed, there are degrees of health, or, to use the more popular phrase, degrees of “wellness.” It is now clear that lifestyle can have a major impact on our degree of wellness.

This textbook is intended for an introductory college course in physical fitness and wellness and focuses on how to alter one’s lifestyle to achieve a high degree of physical fitness and wellness. The two major aspects of our daily lives that most affect our level of wellness are exercise and diet. Hence, a major theme of this book is that exercise and diet interact and that both regular exercise and good nutrition are essential to achieve total fitness and wellness.

This text is an effort to provide clear and objective research-based information to college students during their first course in physical fitness and wellness. By providing a research-based text, we hope to dispel the many myths associated with exercise, nutrition, weight loss, and wellness. Further, we have attempted to provide a “how-to” approach for the evaluation of various wellness components such as fitness levels and nutritional status. We also describe ways to bring about a change in lifestyle (design a fitness program, monitor progress, alter food choices, etc.) that will lead to a higher degree of wellness. Indeed, the title of the book, *Total Fitness: Exercise, Nutrition, and Wellness* is indicative of the philosophy that to be completely fit, one must combine optimal physical activity and proper nutrition.

Why Another Text?

Numerous physical fitness and wellness texts are available. Our motivation in writing this text was to provide a unique physical fitness text that not

only covers the primary concepts of physical fitness and wellness but also addresses important issues such as exercise-related injuries, exercise and the environment, and exercise for special populations, which are omitted from many texts. Further, we have created a text with a strong foundation in both exercise physiology and nutrition and which contains the latest research findings. We believe that the combination of the following components make this text unique:

Foundation in Exercise Physiology

First, we believe that it is imperative that a student have an understanding of the basic physiological adaptations that occur in response to both acute exercise and regular exercise training. Without this understanding, it is impossible to plan, modify, and properly execute a “lifetime” exercise program. As active researchers in exercise physiology, it was a challenge to present accurate and detailed information to adequately explain the physiological adaptations during exercise, yet convey this information to college students with limited science background. Based on positive reviews by dozens of college students, we believe that we have accomplished this formidable task.

Strong Emphasis on Nutrition

To discuss physical fitness and wellness without considering the interaction of exercise and good nutrition would be a serious mistake. Although many texts present some nutrition information, we have placed a major emphasis on comprehensive coverage of basic nutrition and weight control by dedicating separate chapters to each. In addition, because we feel so strongly that the interaction of nutrition with exercise is so important and that an understanding of one almost necessitates an understanding of the other, we have woven a nutritional theme throughout the text. In each chapter, we have included informa-

tion boxes entitled “Nutritional Links to Health and Fitness,” which give examples of how nutrition is related to the subject matter of that chapter. This is a unique feature that is not contained in current physical fitness and wellness texts.

Coverage of the Latest Scientific Research on Physical Fitness, Nutrition, and Wellness

We feel strongly that college physical fitness and wellness texts should contain the latest scientific information and include references for scientific studies to support key information about physical fitness, nutrition, or wellness. Without scientific references to support key statements, a text may become another source of opinion and speculation that leads to much misinformation in an already confused arena. Our approach has been to provide current scientific references to document the validity of our facts in every chapter. In addition, some of the material in each chapter is referenced with current reviews on the topic being covered to provide a broad-based source of material for those readers with an in-depth interest in a particular area. We have also provided a “Suggested Reading” list at the end of each chapter for the reader who wants an even more broad-based source of information.

In regard to new information, we have attempted to present the most current research in the fitness/wellness arena. For example, it is now clear that exercise plays a role in reducing the risk of some cancers and contributes to a longer life. Although there has been speculation about this for years, supporting evidence has only recently become available. In the area of nutrition, scientific data are now suggesting that there may be a new role for vitamins in preventing certain diseases and even in combating the aging process. In addition, while it is well accepted that fat in the diet increases the risk of heart disease, it has recently been shown that dietary fat plays a greater role in weight gain than other nutrients. These are but a few examples of how we have attempted to make this text current. However, with any attempt to present the latest information, there is always the risk of presenting ideas that are not fully substantiated by good research. We have made a concerted effort to avoid this pitfall by using information from the most highly respected scientific journals and by consulting with experts in the field. Thus we feel confident that this text is both current and factual.

Text Coverage and Features

There are many ways in which textual material can be arranged, but it was agreed that the best way to determine the book content would be to ask instructors. We met with focus groups from coast to coast in an attempt to determine the most important topics, most desirable layout, features, and supplements. Accordingly, we have included the following to enhance learning.

Coverage

The text contains more material than can be covered in a typical 15-week semester. This is by design. The text is designed to be comprehensive in order to afford instructors a large degree of freedom to select the material they consider most important for the makeup of their class. The book begins (Chapter 1) by defining the major concepts of the text (i.e., physical fitness, health-related fitness, wellness, etc.). One of the unique features of this book is that there is an early coverage of the “how-to” of evaluation (Chapter 2). This provides the opportunity to introduce classes to the practical portion of the material at the beginning of the term and to add other “lecture” topics later in the term. Chapters 3 through 6 serve as the core of the physical fitness portion of the text, as they provide the foundation and techniques for developing exercise programs. Chapters 7 and 8 are dedicated to comprehensive coverage of nutrition and diet/weight loss. As previously mentioned, the nutritional link to fitness is a common thread throughout the text. Chapters 9 through 11 cover special considerations that are important to exercise programs (e.g., environmental issues, special populations, and injuries). The comprehensive coverage of these topics is another unique aspect. Chapters 12 through 15 give extensive coverage to the wellness concepts. The ways in which heart disease, cancer, stress, sexually transmitted diseases, and drug abuse affect our levels of wellness are discussed, as well as ways to modify lifestyle to reduce the health risk from these problems. Finally, Chapter 16 illustrates ways in which you can incorporate the concepts presented throughout the text into your lifestyle and make fitness a lifetime commitment.

Writing Style

This text uses a writing style that is appropriate for students from all majors. Indeed, no course

prerequisites are necessary for reading and understanding the text. Although the fitness concepts discussed are based on scientific research, they are presented in a simple, straightforward style. Illustrations and examples are commonly used to clarify a concept.

Nutritional Focus

The focus of the text stresses the importance of proper nutrition in maintaining physical fitness and wellness. To support this focus, the book contains a detailed chapter on nutrition as well as a chapter covering the relationship between diet, exercise, and weight control. Further, every chapter in the text contains “Nutritional Links to Health and Fitness” boxes that provide additional nutritional knowledge, such as dietary guidelines for lowering cancer risk, control of blood sugar by exercise, and the use of nutritional supplements for emotional stress reduction.

Unique Topics

This text contains several “unique” chapters not contained in all introductory fitness/wellness texts. For example, this book includes chapters on: exercise and the environment, exercise for special populations, and prevention and rehabilitation of exercise-related injuries. Further, in several chapters, we have included an elementary discussion of the physiology of exercise designed to improve the students’ knowledge of how the body operates and responds to regular exercise.

A Closer Look Boxes

All chapters contain informational boxes called *A Closer Look*, which are designed to add additional details or practical applications of topics covered in the text. Topics include how to control cravings for sweets, obesity and disease, arthroscopic surgery, and how free radicals promote cancer.

Examples

Included in each chapter are practical examples to illustrate specific learning objectives, and further apply the fitness concepts.

References

The latest scientific information has been incorporated into each chapter. Source citations are

located in the text by number, and a complete reference list is provided at the end of each chapter.

Laboratory Exercises

Most chapters contain “easy-to-follow” laboratory exercises that cover areas such as lifestyle assessment, personal fitness testing, nutritional assessments, cardiovascular risk assessment, and a behavior modification contract.

Food Appendix

At the end of the book is an appendix containing the caloric and nutrient content of common foods, as well as an array of fast foods.

Pedagogical Aids

In addition to the pedagogical aids already mentioned, each chapter also incorporates the following aids to enhance student learning:

- **Learning objectives** at the beginning of each chapter provide a focus for students to learn the key concepts presented in the chapter.
- **Margin glossaries** define and reinforce key terms, which are boldfaced in the text, and included in an alphabetical glossary at the end of the book.
- **Summaries** at the end of each chapter provide a quick, at-a-glance review of the key points covered in the chapter.
- **Study Questions** at the end of each chapter are provided for student review and analysis of the material presented.
- **Suggested Reading** lists appear at the end of each chapter for those students who are interested in further reading from a more broad-based source of information.
- **References** are listed at the end of each chapter to support all scientific information presented in the chapter and to provide a broad-based source of material for those readers with an in-depth interest in a particular area of interest or research.

Supplements

Instructor’s Manual and Test Bank

This comprehensive resource manual written by the text authors, provides everything an instructor will need to teach from this exciting new text. Each chapter of the Instructor’s Manual includes

the following: summaries, objectives and lecture outlines, overview of each lab activity, discussion activities and suggested student activities, supplemental readings list, and at least 40 test questions per chapter with multiple choice, true-false, and essay questions to choose among.

Computerized Test Bank

All test questions in the Instructor's Manual and Test Bank are available on ESATEST III, the best-selling, state-of-the-art test generation software package. This program, available for both IBM (DOS and Windows) and Macintosh systems, is free to adopters of *Total Fitness: Exercise, Nutrition, and Wellness*. ESATEST III, allows you to quickly create and print tests, add your own questions, edit existing questions, scramble questions, print different versions of the same test, and add your own instructions within test. ESATEST III also has a unique 2-track design: *Easytest* for the beginner and *Fulltest* for those who wish to write their own questions or create their own graphics. "Help screens" pop up whenever you have a question, and a toll-free number is available to provide technical support. **On-Line Testing** is also available with ESATEST III through any of three media: network system, telecommunications, or personal computer. With just a few keystrokes, it allows instructors to administer, correct, record, and return computerized exams over a variety of networks.

ESAGRADE

ESAGRADE is designed to assist instructors in the recording and processing of results from student exams and assignments. Much more than simply a computerized gradebook, ESAGRADE gives the user the power to automatically grade exams prepared by ESATEST III, using SCANTRON, analyze grades and produce various class and individual statistics, such as test results, cumulative average and class standings, provide graphic displays of those statistics, perform item analysis to determine how many students answered each question correctly or incorrectly and set up new classes. Plus, users can automatically grade exams and create student rosters by importing from ESA's On-Line Testing system.

Color Transparencies

Over 50 full-color transparency acetates made up of key illustrations, figures and charts from the

text and other related materials are available to facilitate classroom discussion and learning.

CNN Video Material

Through an exclusive arrangement with Cable News Network (CNN), a new, specially edited videotape culled from relevant CNN programs provides an exciting means for enhancing classroom discussion. This unique videotape includes segments on such relevant topics as a new breast cancer test, tanning effects, weekend athletes, the betacarotene study, and the obesity gene. A video user's guide is available that provides a description of each video segment, suggested classroom use for each segment, tie-ins with the text material, and discussion questions for each segment.

America Online

Connect the teaching of Physical Fitness and Wellness to the world of the fastest-growing online service with College OnLine from Allyn & Bacon, an on-line service designed specifically for college and university faculty and student use. A wealth of services and products, updated frequently, keep faculty and students in step with the latest data, pedagogy, and public opinion, all linked to Health, Physical Fitness, and Wellness. In addition, America Online allows you to download any of thousands of programs; attend real-time, on-line conferences and forums; keep in touch through electronic mail, including a fast and easy gateway to the Internet; and get the latest news and information from leading magazines and news wires. All you need is a computer and modem. Adopters of this text receive a two-month free subscription to America OnLine; students receive one free month. Ask your Allyn & Bacon representative for details.

Nutritional Analysis Software

From DINE Systems, Inc., this software is available to qualified adopters of this text. With DINE Healthy, students will learn good nutrition and fitness by analyzing their current diet with a database of over 7000 foods and tracking their caloric expenditure for over 400 different types of physical activities and exercise. The program helps students design a weight control program that tracks progress on a daily, weekly, and monthly basis. A recipe analysis feature suggests how your favorite recipes can be improved nutritionally. DINE Healthy compares actual food intake to your per-

sonalized profile and provides a print out of results presented in bar graph, numeric and percentage formats for easy understanding. For consistency and convenience, the nutritional values for common foods in part one of the Appendix has been prepared by DINE Systems, Inc. to match the nutritional information your students will receive with the software.

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