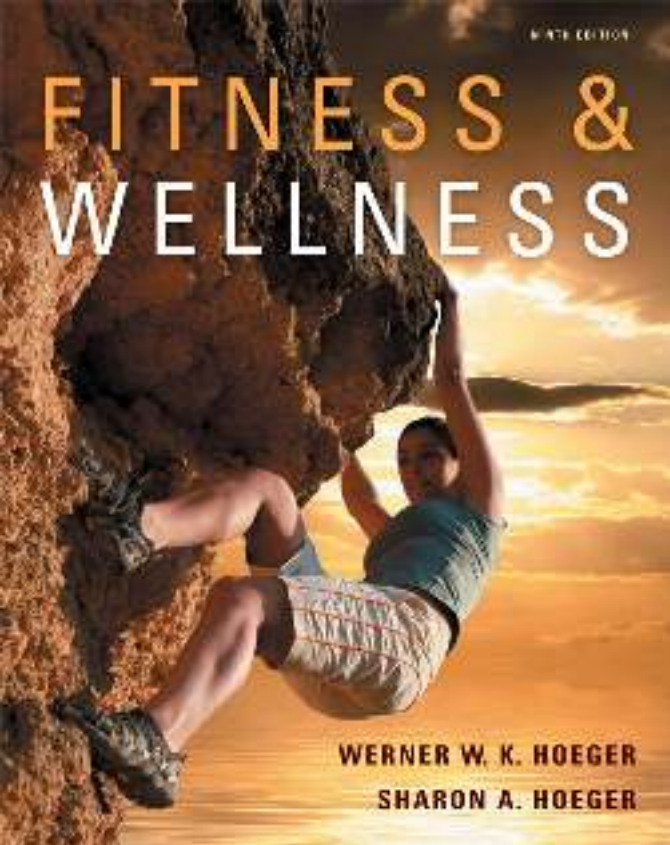


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FITNESS & WELLNESS

WERNER W. K. HOEGER
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Fitness and Wellness

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NINTH EDITION

Fitness and Wellness

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and

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Fitness & Wellness, Inc.

Boise, Idaho



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Ty Milford/Masterfile

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Most people go to college to learn how to make a living. Making a good living, however, won't help them unless they live an active lifestyle that will allow them to enjoy what they have. Unfortunately, the 21st-century American lifestyle does not provide the human body with sufficient physical activity to achieve or maintain adequate health.

Many of the behaviors we adopt in life are products of our environment. Currently, we live in a "toxic" health and fitness environment. We are so habituated to our modern-day environment that we miss the subtle ways it influences our behaviors, personal lifestyle, and health each day. The epidemic of physical inactivity and obesity that is sweeping across America is so harmful to health that it actually increases the deterioration rate of the human body and leads to premature aging, illness, and death.

About one half of the adults in the United States do not achieve the recommended amount of daily physical activity. Among those who do, most do not reap the full benefits because they simply do not know how to implement and stay with a sound program that will yield the desired results.

The good news is that lifetime wellness is within the grasp of most people. We know that most chronic and debilitating conditions are largely preventable. Scientific evidence has shown that improving the quality—and most likely the length—of our lives is a matter of personal choice.

This book offers you the necessary information to start on your path to fitness and wellness by adhering to a healthy lifestyle. The information in the following chapters and the subsequent activities at the end of each chapter will enable you to develop a personal program that promotes lifetime fitness, preventive health care, and personal wellness. The emphasis throughout the book is on teaching you how to take control of your lifestyle habits so you can do what is necessary to stay healthy and realize your optimum well-being.

What the Book Covers

As you study this book and complete the various activities, you will learn to:

- Determine whether medical clearance is needed for your safe participation in exercise.
- Conduct nutrient analyses and follow the recommendations for adequate nutrition.
- Develop sound diet and weight-control programs.
- Assess the health-related components of fitness (cardiorespiratory endurance, muscular strength and endurance, muscular flexibility, and body composition).
- Write exercise prescriptions for cardiorespiratory endurance, muscular strength and endurance, and muscular flexibility.
- Understand stress, lessen your vulnerability to stress, and implement a stress-management program if necessary.
- Implement a cardiovascular disease risk-reduction program.
- Follow guidelines to reduce your personal risk of developing cancer.
- Implement a smoking cessation program, if applicable.
- Understand the health consequences of chemical dependency and irresponsible sexual behaviors and learn guidelines for preventing sexually transmitted infections.
- Discern between myths and facts concerning exercise and health-related concepts.
- Learn behavior-modification techniques to help you adhere to a lifetime fitness and wellness program.

New in the Ninth Edition

All chapters in the ninth edition of *Fitness and Wellness* have been revised and updated according to recent advances published in the scientific literature and in-

formation reported at professional health, physical education, and sports medicine conferences.

A new feature added to this edition is individual *Real Life Stories* presented at the start of each chapter. Students can relate to these accounts as many encounter similar situations in their own lives. In addition to the individual chapter updates listed below, several new graphs and photographs is included in this new edition. Following are the most significant chapter updates:

- In Chapter 1, “Introduction to Physical Fitness and Wellness,” all pertinent statistics related to the prevalence of physical activity, life expectancy, and the leading causes of death in the United States have been brought up to date. Also included are the newly released *Federal Guidelines for Physical Activity* for children, adults, older adults, and pregnant and postpartum women. These guidelines supplement the landmark 1996 *Surgeon General’s Report on Physical Activity and Health* as well as the 2007 *American College of Sports Medicine and American Heart Association Physical Activity and Public Health Recommendations*. Additional information is also presented on the benefits of vigorous-intensity versus moderate-intensity aerobic activity.
- In Chapter 2, “Assessment of Physical Fitness,” the muscular strength and flexibility tables have been simplified so that students can more readily determine personal test results and their respective fitness categories. To further facilitate the assessment of flexibility fitness, the Total Body Rotation Test has been replaced with the Finger Touch Test. The latter test is used to determine shoulder flexibility and does not require equipment other than a cloth measuring tape.
- The topic of Chapter 3, “Exercise Prescription,” has been extensively updated to conform with the newly released *American College of Sports Medicine Guidelines for Exercise Testing and Prescription* and the *Federal Guidelines for Physical Activity*. All three prescription guidelines—cardiorespiratory endurance, muscular strength, and muscular flexibility—have been revised. A new and more accurate maximal heart rate equation is now used in place of the traditional “ $220 - \text{age}$ ” equation.
- Updates and revisions have been made to the descriptions of selected aerobic activity choices discussed in Chapter 4, “Evaluating Fitness Activities.”
- The ever-increasing importance of vitamin D is examined in Chapter 5, “Nutrition for Wellness,” with an expanded discussion on the benefits of this vitamin and how to obtain an adequate supply. Additional information is also included on probiotics and multivitamin supplements.
- Chapter 6, “Weight Management,” has been revised to conform with the new *Position Stand: Appropriate Physical Activity Intervention Strategies for Weight Loss and Prevention of Weight Regain for Adults* released in 2009 by the American College of Sports Medicine. Revised figures on the incidence of overweight, along with discussion of obesity trends in the United States and the health consequences of obesity and its impact on life expectancy, are provided. A new section on the role of sleep deprivation on weight management and weight loss and the importance of social support to enhance proper weight management were added as well.
- A new section on Sleep and Wellness has been added to Chapter 7, “Stress Management.” This section addresses the problem of chronic sleep deprivation among college students.
- In Chapter 8, “A Healthy Lifestyle Approach,” all statistics on the incidence and prevalence of cardiovascular disease, cancer, addictive behavior, and sexually transmitted infections have been updated. The guidelines for a graded exercise stress electrocardiogram have been revised and new information is provided on the effects of statin drugs on inflammation and the role of “safe sun exposure” on cancer prevention.
- Several questions in Chapter 9, “Relevant Fitness and Wellness Issues,” have been updated. New questions related to fitness and wellness issues have been added to the chapter, including information on training order between cardiorespiratory endurance and strength training, energy drinks and performance, and the effectiveness of diet plans.

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 - **Website** (<http://www.cengage.com/health/hoeger/fw9e>). When you adopt *Fitness and Wellness*, ninth edition, you and your students will have access to a rich array of teaching and learning resources that you won't find anywhere else. Resources include a downloadable study guide for students, Web links, flash cards, and more.
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 - **Behavior Change Workbook.** ISBN-10: 0-495-01145-2. The Behavior Change Workbook includes a brief discussion of the current theories behind making positive lifestyle changes, along with exercises to help students make those changes in their everyday lives.
 - **Careers in Health, Physical Education, and Sports, 2e.** ISBN-10: 0-495-38839-4. This unique booklet takes students through the complicated process of picking the type of career they want to pursue; explains how to prepare for the transition into the working world; and provides insight into different career paths, education requirements, and reasonable salary expectations. A designated chapter discusses some of the legal issues that surround the workplace, including discrimination and harassment. This supplement is complete with personal-development activities designed to encourage students to focus on and develop better insight into their future.
 - **Walk4Life® Pedometer.** ISBN-10: 0-495-01315-3. Provided through an alliance with Walk4Life, the Walk4Life Elite Model pedometer tracks steps, elapsed time, and distance. A calorie counter and a clock are included in this excellent class activity and tool to encourage students to track their steps and walk toward better fitness awareness.
 - **Readings for a Healthy Lifestyle.** ISBN-10: 0-759-35944-X. This reader features 12 articles written by author Dianne Hales and published in PARADE magazine. Readings include "Take

Your Meds—The Right Way,” “You Can Think Yourself Thin,” “Getting Yourself Back on Track,” “Too Tough to Seek Help,” and “The Best Medical Help Online.”

- **TestWell Online Assessment Access Card.** ISBN-10: 0-495-01264-5. This Web-based assessment tool allows students to answer 100 questions specific to their health status in relation to the six dimensions of wellness. Students are provided a 10-Step Behavior Change Guide for long-term positive behavior modifications. It can be used as a pre-test or a post-test to assess students’ health status, and it can provide a venue for learning about the different dimensions of wellness. It executes immediate feedback based on students’ responses and can contribute to classroom participation and overall learning assessment. TestWell offers a fun and easy Web-based activity for student enrichment.

Brief Author Biographies

Werner W.K. Hoeger is a professor emeritus of the Department of Kinesiology at Boise State University. He remains active in research and continues to lecture in the areas of exercise physiology, physical fitness, and wellness.



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Dr. Hoeger completed his undergraduate and master’s degrees in physical education at the age of 20 and received his Doctorate degree with an emphasis in exercise physiology at the age of 24. He is a Fellow of the American College of Sports Medicine and also of the Research Consortium of the American Alliance for Health, Physical Education, Recreation, and Dance. In 2002, he was recognized as the Outstanding Alumnus from the College of Health and Human Performance at Brigham Young University. He is the recipient of the 2004 first Presidential

Award for Research and Scholarship in the College of Education at Boise State University. In 2008, he was asked to be the keynote speaker at the VII Iberoamerican Congress of Sports Medicine and Applied Sciences in Mérida, Venezuela and was presented with the Distinguished Guest of the City recognition.

Dr. Hoeger uses his knowledge and personal experiences to write engaging, informative books that thoroughly address today’s fitness and wellness issues in a format accessible to students. Since 1990, he has been the most widely read fitness and wellness college textbook author in the United States. He has published a total of 49 editions of his 9 fitness and wellness-related titles. Among the textbooks written for Wadsworth Cengage Learning are *Principles and Labs for Fitness and Wellness*, eleventh edition; *Lifetime Physical Fitness and Wellness: A Personalized Program*, eleventh edition, *Principles and Labs for Physical Fitness*, seventh edition; *Wellness: Guidelines for a Healthy Lifestyle*, fourth edition; and *Water Aerobics for Fitness and Wellness*, third edition (with Terry-Ann Spitzer Gibson).

Dr. Hoeger was the first author to write a college fitness textbook that incorporated the “wellness” concept. In 1986, with the release of the first edition of *Lifetime Physical Fitness and Wellness*, he introduced the principle that to truly improve fitness, health, and quality of life and achieve wellness, a person needed to go beyond the basic health-related components of physical fitness. His work was so well received that every fitness author immediately followed his lead in the field.

As an innovator in the field, Dr. Hoeger has developed many fitness and wellness assessment tools; including fitness tests such as the Modified Sit-and-Reach, Total Body Rotation, Shoulder Rotation, Muscular Endurance, Muscular Strength and Endurance, and Soda Pop Coordination tests. Proving that he “practices what he preaches,” at 48, he was the oldest male competitor in the 2002 Winter Olympics in Salt Lake City, Utah. He raced in the sport of luge along with his then-17-year-old son Christopher. It was the first time in Winter Olympics history that father and son competed in the same event. In 2006, at the age of 52, he was the oldest competitor at the Winter Olympics in Turin, Italy.

Sharon A. Hoeger is vice-president of Fitness & Wellness, Inc. of Boise, Idaho. Sharon received her degree in computer science from Brigham Young University. She is extensively involved in the research process used in retrieving the most current scientific information that goes into the revision of

each textbook. She is also the author of the software that accompanies all of the *Fitness and Wellness* textbooks. Her innovations in this area since the publication of the first edition of *Lifetime Physical Fitness & Wellness* set the standard for fitness and wellness computer software used in this market today.



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Sharon is a coauthor in five of the seven *Fitness and Wellness* titles. Husband and wife have been jogging and strength training together for over 32 years. They are the proud parents of five children, all of whom are involved in sports and lifetime fitness activities. Their motto: "Families that exercise

together, stay together." She also served as Chef de Mission (Head of Delegation) for the Venezuelan Olympic Team at the 2006 Olympic Winter Games in Turin, Italy.

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Sharon Woodard, Wake Forest University

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Fitness and Wellness

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Introduction to Physical Fitness and Wellness

There is no drug in current or prospective use that holds as much promise for sustained health as a lifetime program of physical exercise.¹

Chapter

1

OBJECTIVES

- ▶ **UNDERSTAND** the importance of lifetime fitness and wellness.
- ▶ **LEARN** the recommended guidelines for weekly physical activity.
- ▶ **DEFINE** physical fitness and list components of health-related and skill-related fitness.
- ▶ **UNDERSTAND** the benefits of a comprehensive fitness and wellness program.
- ▶ **LEARN** motivational and behavior modification techniques to enhance compliance with a healthy lifestyle program.
- ▶ **LEARN** to write SMART goals to aid with the process of change.
- ▶ **DETERMINE** whether medical clearance is required for safe participation in exercise.

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REAL LIFE STORY

Jordan's Experience

Last year as a freshman in college I was advised to enroll in a general education fitness and wellness course. I played high school sports and thought I knew all there was to know about being fit and in shape. As the course started, I realized I didn't really know how important it was to exercise regularly and take good care of myself. It quickly became my favorite class and I couldn't wait to try what I was learning. I started cardio and strength workouts according to an exercise prescription I wrote myself. I didn't even know there was such a thing as an "exercise

prescription." I even stretched once in a while and started to eat better. As I became more fit, I started to feel better about myself, I lost weight, I toned up, I had so much more energy, and I actually started to enjoy exercise. It is fun to work out! I now know that how well I will live the rest of my life has a lot to do with wellness choices I make. My goal is to never stop exercising and take good care of myself.



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Most people believe school will teach them how to make a better living. A fitness and wellness course will teach you how to live better—how to truly live your life to its fullest potential. Real success is about more than money: Making a good living will not help you unless you live a wellness lifestyle that will allow you to enjoy what you have. Your lifestyle is the most important factor affecting your personal well-being, but most people don't know how to make the right choices to live their best life.

During the last three decades, the benefits of physical activity have been substantiated by scientific evi-

dence linking increased physical activity and positive lifestyle habits to better health and improved quality of life. Even though a few individuals live long because of favorable genetic factors, for most people, the quality of life during middle age and the "golden years" is more often related to wise choices initiated during youth and continued throughout life.

Based on the abundance of scientific research on physical activity and exercise, a clear distinction has been established between the two. **Physical activity** is defined as bodily movement produced by skeletal muscles that requires the expenditure of energy and



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Physical activity and exercise lead to less disease, a longer life, and enhanced quality of life.

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