

FIFTH EDITION

Physical Activity & Health

AN INTERACTIVE APPROACH



Dr. Jerome E. Kotecki

Professor of Health Science
College of Health
Ball State University
Muncie, Indiana



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World Headquarters
Jones & Bartlett Learning
5 Wall Street
Burlington, MA 01803
978-443-5000
info@jblearning.com
www.jblearning.com

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Preface

To the Student

Physical Activity & Health: An Interactive Approach, Fifth Edition serves as a valuable text to help understand the workings of the complex systems within the human body and the multidimensional components of human health. This text presents scientific evidence on the relationship between physical activity and health in a readable and understandable format. Filled with information, guidance, recommendations, and practical applications, it prepares you to identify the aspects of personal behavior that, with modification, can improve your overall health. With engaging features that address self-assessment and changing health habits, *Physical Activity & Health* charts a path, putting you in control and allowing you to decide what to do, how to do it, and when to do it. With its assistance, you will know where you are heading, the best way to get there, and the ways to travel without getting lost or running into detours. This pathway will better allow your behaviors to come naturally into alignment with your sense of what is best to create optimal health and happiness.

To the Instructor

Physical Activity & Health: An Interactive Approach, Fifth Edition consists of 16 chapters that clearly and systematically cover the core essentials of a physical fitness and personal health course. These interesting and informative chapters engage students with a variety of instructive elements that assist and encourage readers in assuming control over their health and well-being. Valuable chapter features include short scenarios and key concepts listed at the beginning of each chapter and marginal definitions for key terms and concepts placed throughout each chapter. Every chapter concludes with a chapter summary that reinforces chapter concepts, offers critical thinking questions, and reiterates the connection between physical activity and health. Each chapter's content is richly illustrated with supporting tables, illustrations, and original photos to aid in the reader's understanding and retention of the material.

Physical Activity & Health uses a distinct interactive approach to support the belief that students have more control over their lives and well-being than anything or anyone else. This text equips students with the information, skills, and practical know-how to gain control of their health, and it enables them to decide what to do and how and when to do it. By reading the chapters carefully and making an honest effort to complete the "Assess Yourself" workbook activities found at the end of the text, students will gain the confidence and competence to make responsible decisions and take fitting action to improve their health.

Physical Activity & Health: An Interactive Approach, Fifth Edition is an essential course text that offers expert knowledge in a synthesized manner that is readable and understandable to its intended audience. This is an adaptable book that fits nicely into a lecture/physical activity format, and it easily accommodates a variety of physical activity, fitness, wellness, and personal health courses. The content is carefully constructed to be meaningful to college students from all academic disciplines. It is a versatile text that has been implemented in large four-year universities, small community colleges, and other institutions of higher education.

New to This Edition

For this edition of *Physical Activity & Health: An Interactive Approach*, the latest scientific evidence, recommendations, and national standards have been incorporated throughout each chapter. Key highlights include:

- Revised statistics and data incorporated throughout the text reflect the current state of physical activity and health status in America and the world.
- A new feature, “Where Am I?,” appears at the beginning of every chapter beginning with Chapter 3. This feature integrates the Stages of Change behavior change model based on chapter content. Students will have the opportunity to assess their own stage using a short staging questionnaire on a number of key health and wellness behaviors. This “Where Am I?” feature will allow students to determine their readiness to change before reading the chapter content. Recognizing where students are in the cycle of change is important so that they can set appropriate goals and action steps to strive to achieve. This way not all students are treated the same way.
- Another new feature, “The Me I Want to Be,” appears at the end of every chapter beginning with Chapter 3. This feature provides students the opportunity to construct a personal action plan by responding to the following questions: “What type of activity are you going to do?,” “How much are you going to do?,” “When are you going to do it?,” and “How often or how many days a week are you going to do it?” after comprehending the chapter content. Additionally, “The Me I Want To Be” feature measures the student’s level of confidence or self-efficacy with regard to their feelings of confidence that they can realize their action plan and why they feel that way. Research on self-efficacy indicates that one of the best predictors of successful behavior change is confidence in one’s ability to perform a specific behavior in specific situations.
- Workbook activities previously found in the separate *Activities & Assessment Manual* have been incorporated into this text, providing science-based health and fitness activities and assessments that allow the student to individually apply the concepts explained in each chapter. “Assess Yourself” callouts appear in the margin next to where the content is described in the chapter and direct the student to the appropriate activity in the end-of-text workbook section.

These “Assess Yourself” activities assist students in examining their current status and measure what they are doing now. This will help them identify aspects of their personal behavior that with modification can improve their overall health. By recognizing areas needing improvement, the student will be better able to set personal goals that allow for health enhancement. Finally, completing the “Assess Yourself” activities will provide students with many opportunities for individual reflection as it relates to the management of their health. Self-reflecting on the way they are living will better allow their actions to come naturally into alignment with their sense of what is best for them to create health and happiness.

Key Chapter Highlights

Chapter 1—The Physical Activity and Health Connection

- Includes expanded coverage related to health and wellness, epidemiology, risk factors, and protective factors.

Chapter 2—Understanding and Enhancing Health Behaviors

- Includes new illustrations related to when and why people change based on decisional balance, as well as a helpful grid that allows students to thoughtfully list the pros and cons as they contemplate a specific behavior change.
- Features a linear scale that allows students to measure their confidence level and understand what barriers may be keeping them from being more confident.

Chapter 3—Principles of Physical Fitness Development

- Includes an updated, validated “My Physical Activity and Exercise Pyramid” graphic. This graphic effectively integrates the *Physical Activity Guidelines for Americans* and the American College of Sports Medicine (ACSM) exercise guidelines for obtaining optimal health and fitness, thereby increasing the fluidity of understanding between each set of recommendations.

Chapter 4—The Heart of Physical Fitness: Cardiorespiratory Endurance,**Chapter 5—The Power of Resistance Training: Strengthening Your Health,** and**Chapter 6—Focus on Flexibility: Stretching for Better Health**

- Provide updated information from the American College of Sports Medicine for the chapters related to the building blocks of fitness.

Chapter 7—Optimal Nutrition for an Active Lifestyle

- Incorporates updated content reflecting the *Dietary Guidelines for Americans, 2015–2020* released in January 2016, as well as the redesigned Nutrition Facts label, released in May 2016.

Chapter 8—Achieving and Maintaining a Healthy Weight

- Features expanded coverage of body fat distribution—specifically abdominal obesity—and its association with destructive metabolic abnormalities.

Chapter 9—Achieving Optimal Bone Health

- Includes updated content on dietary sources for calcium and vitamin D.

Chapter 10—Mental Health and Coping with Stress

- Includes a new validated psychometric PHQ-4 depression and anxiety screen scale for college students that allow readers to quickly assess how depressed or anxious they are at the present moment.

Chapter 11—Making Informed Decisions About Drug Use

- Incorporates updated criteria for substance use disorder from the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*.

Chapter 12—Consumer Health

- Features revised information on health fraud, common marketing techniques, the need for health literacy, becoming a wiser health consumer, surfing the web for health information, locating reliable health organizations, and understanding the healthcare system.

Chapter 13—Developing Healthy Social and Intimate Relationships

- Updates information on developing a healthy sexual relationship and managing fertility.

Chapter 14—Protecting Your Cardiovascular System,

Chapter 15—Reducing Your Cancer Risk, and

Chapter 16—Preventing Sexually Transmitted Infections,

- Further enhance the students' understanding of the basic mechanisms of these diseases, including their relation to lifestyle and how their onset can be delayed, prevented, or reversed.

Acknowledgments

The author's writing is only one portion of the work that goes into the development and production of a textbook. Many other people work long hours with a shared goal: to produce a visually appealing, error-free, up-to-date, high-quality product for students. I would like to acknowledge the dedication and hard work of these individuals—for without them this project never would have been realized.

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Features of This Text

Physical Activity & Health: An Interactive Approach, Fifth Edition incorporates a number of engaging pedagogical features to aid in the student's understanding and retention of the material.

Each chapter starts with **What's the Connection?** This short scenario profiles a college student who wants to change a specific behavior that is relevant to that chapter's content. At the end of the chapter, **Making the Connection** shows what the student has learned about the behavior he or she wants to change and the action(s) that should be taken to change that behavior.

what's the connection?

Finding her way to classes. Learning to schedule time for studying. Meeting new people and making friends. These are just a few of Destiny's experiences during the first weeks of her first year at college. Destiny spends lots of time in the library, and when she isn't studying or going to classes she is working as a part-time receptionist at the university bookstore. With all these commitments, Destiny is finding it difficult to stay physically active; as a matter of fact, her daily routine requires very little physical activity. In high school, Destiny was physically active in

making the connection


Destiny realizes that she is in college to learn and do well academically. Her mid-term grades are fine, but she doesn't like feeling tired all the time. After reading this chapter, Destiny realizes that she must take more responsibility for how she is feeling. She surmises that the lack of physical activity in her life may be contributing to her worn-out feeling and begins to think of ways she can find time to become more physically active while still maintaining other positive aspects of college life.

...ride her bike to school every day. Now, Destiny notices that she feels not as energetic as she used to be. She begins to think of ways to being away from the bookstore, and to studying a lot.

Each chapter also begins with a **Concepts** list that identifies the content and skills that should be mastered in the chapter. Students should review the concepts before reading the chapter to use the concepts effectively.

concepts

- 1 Many of us are concerned about our present and future health.
- 2 Wellness is conceptualized as a complex interaction and integration of the seven dimensions of health, each based on a dynamic level of functioning oriented toward maximizing our potential and based on self-responsibility.
- 3 A healthy lifestyle is a recurring pattern of health-promoting and disease-preventing behaviors undertaken to achieve wellness.
- 4 A self-change approach assumes that human beings can manage their lifestyle change and learn to control environmental



Many of us are concerned about our present and future health.

These **Key Concepts** are referenced in the chapter with a numbered icon, allowing students to quickly find the information when reviewing the chapter.



Assess Yourself

- 12.1 Skeptical Buyer Exercise
- 12.2 Test Your Supplement Savvy
- 12.3 ACSM Health and Fitness Facility Evaluation


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At the beginning of each chapter is a listing of the corresponding **Assess Yourself** workbook exercises for that chapter. Marginal callouts also appear in the chapter next to sections that closely align with the Assess Yourself workbook content, which appears at the end of the text. These chapter-specific exercises assist students in better understanding themselves and in making informed health behavior changes. Instructors may assign these as homework assignments or students may undertake them on their own.

Talk test A simply way to measure relative aerobic intensity.

Key Terms appear in boldface type the first time they are mentioned, with their definitions appearing in the margin for easy reference. Definitions can also be found in the end-of-text **Glossary**.

Where Am I?



Readiness to Change with Regard to Interrupting Sustained Sitting


Please indicate which statement best describes your readiness to take regular activity breaks to interrupt sustained sitting by standing up and walking around for 2 minutes every 30 minutes.

- Description of the sustained sitting recommendation doesn't match my current behavior patterns, and I don't intend to change in the next 6 months. (Precontemplation)
- Description of the sustained sitting recommendation doesn't match my current behavior patterns, but I do intend to change in the next 6 months. (Contemplation)
- Description of the sustained sitting recommendation doesn't match my current behavior patterns, but I am motivated and confident that I can change in the next month. (Preparation)
- Description of the sustained sitting recommendation is similar to my current behavior patterns, but I've been practicing this behavior for less than 6 months. (Action)
- Description of the sustained sitting recommendation is similar to my current behavior patterns, and I've been practicing this behavior for 6 months or longer. (Maintenance)

Beginning in Chapter 3, the new **Where Am I?** feature provides students with the opportunity to assess their readiness to change before reading the chapter content using the Stages of Change behavior change model.

Beginning in Chapter 3, the new **The Me I Want to Be** feature encourages students to construct a personal action plan while also measuring the student’s level of confidence or self-efficacy.

The Me I Want To Be



My Action Plan for Limiting Leisure-Time Sustained Sitting

At the beginning of this chapter, you identified your stage of readiness to change with regard to limiting sustained sitting. Now, decide what you can realistically expect to accomplish within the next month.

- Create a realistic and specific action plan to limit leisure-time sustained sitting by answering the following questions:
 - What** type of activity are you going to do?
 - How much** are you going to do?
 - When** are you going to do it?
 - How often** or how many days a week are you going to do it?

Example action plan: Next week, I will stand up and do some light stretching (what) for at least 1 minute (how much) for every 30 minutes of sustained sitting (when) during the day (how often).
Your action plan: Next week, I will: _____
- How confident are you that you can follow your action plan to limit sustained sitting? Circle the number that best describes your feelings of confidence that you can implement your action plan according to the following scale:

Not at all confident	Not very confident	Moderately confident	Very confident	Extremely confident
1	2	3	4	5
- Why do you feel this way? _____

The **Physical Activity and Health Connection** section reinforces and summarizes the connection between physical activity and health in relation to the topics discussed at the end of each chapter.

Physical Activity and Health Connection

Physical activity is an essential lifestyle behavior when it comes to promoting health and preventing many major chronic diseases. It provides health benefits that cannot be obtained in any other way. It can assist with every other aspect of a healthy lifestyle and is central to wellness.

At the end of each chapter, **Concept Connections** reinforce important concepts with a brief narrative following each original concept. This emphasizes what students have learned by carefully reading the chapter and works as an excellent review tool.

concept connections

- 1

Many of us are concerned about our present and future health. We feel that we have some control over our health through our lifestyle or behaviors—things we can do or not do—that will promote health and prevent disease. However, the actions of far too many of us do not produce the good health we desire. As a college student, you face many health choices—choices that can affect you in the “here-and-now” and for the rest of your life. You are responsible for learning and implementing the best choices regarding your health. It is a responsibility only you can own.
- 2

Wellness is conceptualized as a complex interaction and integration of the seven dimensions of health, each based on a dynamic level of functioning oriented toward maximizing our potential and based on self-responsibility. When a person makes a conscious decision to work toward these enhanced aspects of health, well-being or wellness is identified. Halbert Dunn (1967) first wrote about the upper limits of health in his book *High Level Wellness*. Dunn saw wellness as a dynamic process of change and growth that was largely determined by the decisions we make about how to live our lives.
- 3

A healthy lifestyle is a recurring pattern of health-promoting and disease-preventing behaviors undertaken to achieve wellness. It is a way of life based on the idea that our chances of self-fulfillment are increased or decreased directly by our level of health. Further, it can decrease significantly the risk of disease and increase the chances of living a life of high quality into the later decades of life.
- 4

A self-change approach assumes that human beings can manage their lifestyle change and learn to control environmental factors that are detrimental to health. It puts you in control of your health and permits you to determine what to do, as well as how and when to do it. A self-change approach requires planning, time and effort, and, most important, the development of special lifestyle skills.

Critical Thinking

1. Explain the differences between health-related fitness and skill-related fitness.
2. Several scientific fitness principles (overload, progression, specificity, reversibility, recovery, individual differences) must be adhered to in order to develop an effective physical activity program. Select three different principles and explain them.
3. You can use the FITT formula to help you determine how much exercise is enough for you to build fitness safely and effectively. What does FITT stand for?

Critical Thinking questions at the end of each chapter provide students with an opportunity to use the knowledge they've gained in applying, analyzing, and evaluating relevant situations.

About the Author



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Jerome E. Kotecki is a professor of Health Science in the Department of Nutrition and Health Science located within the College of Health at Ball State University. Dr. Kotecki earned his doctorate in health education and his master's degree in exercise science from Indiana University. Dr. Kotecki has published more than forty scientific research papers on the prevention, arrest, and reversal of the most common chronic diseases facing Americans today. He has authored or coauthored multiple textbooks on the importance of healthy lifestyle habits to enhance the multidimensional components of human health and prevent cardiovascular disease, diabetes, cancer, and other chronic

conditions. An experienced teacher and researcher, he is devoted to helping students adopt and maintain healthy lifestyles. Dr. Kotecki has been recognized for his contributions to the scholarship of teaching and learning by his department, college, and university. When he is not writing or teaching, he is an avid fitness participant and enjoys yoga, cycling, resistance training, running, rock climbing, and hiking.