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EXERCISE PSYCHOLOGY

Physical Activity
and Sedentary
Behavior



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Dedication

We dedicate this book in memory of Bert Carron. His spirit, vitality, and passion for his profession were contagious and inspirational.

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Foreword

Two of my well-regarded colleagues, Heather Hausenblas and Ryan Rhodes, have undertaken a formidable task in putting together this book. Each of them brings a wealth of knowledge, expertise, and experience in the psychology of physical activity area to the table. Having met both at conferences as emerging young scholars (many years ago), I was impressed at that time with their ability to grasp the bigger picture, synthesize information, articulate concepts, and come up with important and meaningful research questions. As evidenced by their achievements and this book, clearly this has not changed. They both are established and well-respected leaders in our field. Just as important, we have collaborated on many projects and papers, and I have rarely come across two more positive, productive, and thoughtful individuals whom I am proud to call my colleagues.

This book will undoubtedly serve as an excellent resource to researchers, practitioners, and students. The book is set up in a logical manner—which will help you, the reader, build the foundation of knowledge in this area. This should enable you to become informed on what is known about physical activity and sedentary behaviors, why physical activity and sedentary behaviors are important, why and how to change physical activity and sedentary behaviors, and how to use this knowledge in research and application.

I would like to point out some highlights. Introducing the concept of sedentary behavior is timely and much needed as physical activity is further engineered out of our lives and with the rapid increase of screen technology (tablets/iPads, smartphones, web TV, etc.). The theories presented are the major theories in our field, thus providing a description of our current understanding of behavior and why people would change. The consequences and outcomes presented include psychological and physiological aspects, and, importantly, also address negative outcomes of physical activity. The book concludes with looking at the environment, both social and physical, to complete the picture.

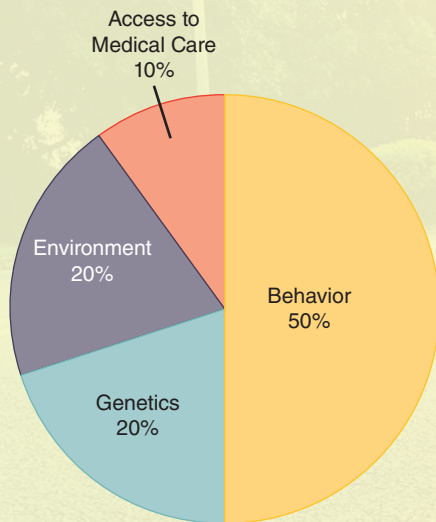
Heather and Ryan have taken a very conversational approach to this book, which makes it easy to read and facilitates understanding. This includes providing learning objectives, asking questions, providing examples, defining terms as you read along, and presenting figures and tables. Such interactive and engaging writing makes it easy for the reader to continue and see what else there is to learn. I am confident that this text will be very valuable to our field and motivate practitioners, researchers, professors, and students to push their contributions to the next level. In so doing, the book will be a catalyst to our field.

Claudio R. Nigg, PhD, FSBM

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Preface

What contributes to our overall health? What might surprise you is that our behavior—that is, what we are actually doing (or not doing)—has the most significant impact on our overall health. According to the U.S. Department of Health and Human Services (2014), our behavior has more of an impact on our health than our genetics, our environment, and our access to medical care.



Components of Health

Data from U.S. Department of Health and Human Services. (2010). Physical activity for everyone: Recommendations. Retrieved March 27, 2010, from <http://www.cdc.gov/physicalactivity/everyone/guidelines/adults.html>.

If we break our behavior down even further, physical activity has one of the biggest impacts on our overall health. The science is clear—every system of the body benefits when a person exercises. Regular exercise is likely the single best prescription that people of all ages could take to reap a huge host of health benefits. Physical activity is highly effective for preventing and treating many of our most prevalent chronic diseases, including coronary heart disease, hypertension, heart failure, obesity, depression, and diabetes. The bottom line is that physical activity is very (very) good for our health. In fact, people who are regular exercisers can expect to have a mean life expectancy that is 7 years longer than that of their physically inactive friends (Chakravarty, Hubert, Lingala, & Fries, 2008).

Physical activity by itself, however, isn't enough to achieve overall health because it needs to be paired with a reduction in sedentary behavior. Sedentary behavior includes activities undertaken in either a sitting or reclined position, such as watching TV, reading, and engaging in activities on the computer. Too much sitting appears to be a health risk that is additional to, and distinct from, too little exercise. The consequence is that even if people are meeting the physical activity guidelines, if they spend most of their remaining waking hours in sedentary activities, they will experience a distinct negative impact on their overall health. We need to not only move more at a moderate and/or vigorous pace, but we also need to stand up more during the day.

The editor of *The Lancet* concluded in the July 2012 issue that was dedicated to physical activity and health: "In view of the prevalence, global reach, and health effect of physical inactivity, the issue should be appropriately described as pandemic, with far-reaching health, economic, environmental, and social consequences" (July 2012). This powerful conclusion reveals that more than ever the field of exercise and sedentary behavior psychology is of great importance.

How can we get people to move more and sit less? We have tackled this question in this book by exploring the research, summarizing the key areas in this increasingly significant area of scientific inquiry in order to shed light on possible

answers to this question. Our main goal in writing this book was to produce the first targeted book to bring the research examining the psychology of both exercise and sedentary behavior together in a comprehensive, educational, and informative format with a socioecological scope.

This book is intended for health professionals, researchers, professors, and students who are interested in learning more about the psychological basis of exercise and sedentary behavior. It is our hope that it will stimulate continued interest and research in these important aspects of human behavior.

ORGANIZATION OF THE BOOK

All areas of science proceed through four general stages. The first stage is *description*. The descriptive stage is essential because it informs us about “what is.” A large proportion of the research in the psychology of exercise and sedentary behavior has been descriptive in nature. Section 1 is devoted to the introductory material describing exercise psychology (Chapter 1) and the psychology of sedentary behavior (Chapter 2).

The second and third stages of science, *explanation* and *prediction*, involve theory development and testing. In Section 2, various theoretical models that have been advanced to explain and predict involvement in exercise and sedentary behavior are discussed. Chapter 3 deals with one of the most extensively used theoretical models used to understand human behavior—social cognitive theory. In Chapter 4, motivational theories are examined, including the health belief model, self-determination theory, and protection motivation theory. The theory of planned behavior is described in Chapter 5. A popular approach to the study of involvement in exercise, the transtheoretical model, is discussed in Chapter 6.

Section 3 of the book provides an overview of research that has centered on the relationships between exercise and sedentary behavior and various health outcomes. Considerable research has identified a number of psychological benefits of being physically active, including reduced anxiety and depression, improved stress reactivity, enhanced self-esteem, increased body satisfaction, and improved cognitive functioning. In Chapter 7, we examine the mind–body connection between physical activity and sedentary behavior and cognition. In Chapter 8, we explore how physical activity and sedentary behavior affect both depression and anxiety. In Chapter 9, we examine how our personality, in particular the Big Five personality traits of extraversion, openness to experience, neuroticism, agreeableness, and conscientiousness, affect our exercise and sedentary behaviors. In Chapter 10, we discuss the effect of exercise and sedentary behavior on self-esteem and the related construct of body image. The effects of exercise and sedentary behavior on our stress levels and our ability to handle pain are discussed in Chapter 11. Chapter 12 explores how exercise and sedentary behavior affect our sleep habits. In Chapter 13, we examine how exercise affects overall health-related quality of life and positive mood states such as vigor and happiness in the general population as well as special populations, such as cancer patients, pregnant women,



and obese individuals. Finally, a number of potential exercise-related disorders and negative behaviors have been associated with exercise, such as exercise dependence, steroid use, muscle dysmorphia, and eating disorders. The final chapter in this section (Chapter 14) focuses on the potential dark side of exercise behavior.

An important characteristic that helps to define the psychology of exercise and sedentary behavior as a discipline is its focus on the environmental factors that influence individual behavior. Section 4 provides an overview of research that has centered on an individual's social and physical environments. Chapter 15

focuses on the social environment (i.e., family, friends, and teammates), whereas Chapter 16 outlines aspects of the physical environment (e.g., neighborhoods, parks, green spaces) that have been found to be important influences on physical activity and sedentary behavior.

The fourth stage of science is *intervention*. Essentially, the description stage provides a basis for the explanation stage (theory), the prediction stage involves a test of theory, and the intervention stage involves the application of what has been learned from the other three stages. Because the benefits of exercise are so important for the individual and society in general, numerous attempts have been made to develop effective intervention strategies to not only increase exercise behavior but also reduce sedentary behavior. Strategies on how to promote exercise involvement and reduce sedentary behavior, including those that have focused on the individual level, social level, policy level, and environment, are integrated within each of the chapters.



Vignette: Sarah

I wake up around 6:30 a.m. each morning to give myself enough time to shower and get dressed and dab some makeup on before starting my hour commute via car to work. Most mornings I'm lucky if I grab a muffin to eat while I drive. It's rare that I have time to sit down for a full breakfast. I arrive at the office around 8:45, sometimes a bit after 9:00 if traffic is bad. As an executive assistant to the CEO of a small insurance company, the majority of my day is spent fielding phone calls and emails from clients, scheduling the boss's meetings and travel plans, coordinating with our account director to manage billing inquiries, and organizing reports from the focus groups my company conducts on a monthly basis.

Needless to say, most of this requires me to stay seated. I'd say the most exercise I get during normal business hours depends on how many times I walk to the copy machine down the hallway and how often I make trips to the restroom throughout the day.

I know that I'm supposed to get more exercise. And the need's especially strong considering my cholesterol levels were higher than normal on my most recent blood test. I try

LEARNING OBJECTIVES

- After completing this chapter, you will be able to:
- Describe what sedentary behavior is and how it is distinct from physical inactivity.
 - Estimate the numbers of people who are sedentary.
 - Describe the guidelines for sedentary behavior.
 - Differentiate among key terms such as inactive, screen time, and sedentary.
 - Identify individual correlates of sedentary behavior.
 - Understand the health effects of sedentary behavior.

KEY FEATURES

- **Learning Objectives.** Each chapter begins with a list of goals to focus the reader in their learning and engagement with the content.
- **Vignettes.** A fictional vignette is presented to depict how a person might encounter that chapter's topic in real life and its impact on that person's health.
- **Applying the Concepts.** At the end of each chapter, readers are asked questions that tie the knowledge gained in the chapter to real-world scenarios.

- **Critical Thinking Activities.** Short questions and activities are included throughout each chapter to present opportunities for the reader to challenge and delve deeper in the theories, concepts, and research presented.

CRITICAL THINKING ACTIVITY 7-2

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Do you think that moderate and/or mild physical activity can improve the attention and concentration of children with ADHD? Explain why or why not.

- **Review Questions.** At the end of each chapter, Review Questions allow readers to evaluate the achievement of the objectives outlined at the start of the chapter.

INSTRUCTOR RESOURCES

The following resources are available to instructors to aid in teaching the content:

- **Test Bank** of more than 750 questions for assessment and practice.
- **Slides in lecture format** to support course lectures for each chapter.
- **Sample answers and Tips & Tricks** are provided to instructors for the Review Questions and Applying the Concepts questions at the end of each chapter.
- **Projects** that feature in-class activities are included for each chapter.
- **Instructor's Manuals** for selected chapters provide tips and grading rubrics for the additional projects provided.
- **Sample Syllabus** depicts an example of how to teach the topics in this book in a typical course.
- **Image Bank** slide deck includes the key images from the text.

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Heather Hausenblas, PhD is a physical activity and healthy aging expert, researcher, and author. She obtained her doctorate from the University of Western Ontario, Canada. She was a faculty member and the director of the Exercise Psychology Laboratory at the University of Florida from 1998 to 2012. She is currently a professor in the Brooks Rehabilitation College of Healthcare Sciences at Jacksonville University. Her research focuses on the psychological effects of health behaviors, in particular physical activity and diet, across the lifespan. She examines the effects of physical activity and diet on body image, mood, adherence, quality of life, and excessive exercise. Dr. Hausenblas is the co-author of five scientific books, and she has published over 90 scientific journal articles on these topics. In 1996, she was awarded the Canadian Association for Psychomotor Learning and Sport Psychology Young Scientist Award for Scholarly Research. In 2003, Heather was the recipient of the Dorothy V. Harris Memorial Award for outstanding early career development in health and exercise psychology from the Association of Applied Sport Psychology. In 2005, she was the recipient of the early career distinguished scholars award by the North American Society for the Psychology of Sport and Physical Activity. In 1998, she received the Sport Science Award of the International Olympic Committee. She is a mom to three young boys, and she enjoys exercising outdoors, spending time with her family and friends, and coaching and watching her sons play sports. She resides in Jacksonville, Florida, with her husband and boys.

Ryan E. Rhodes, PhD is the director of the Behavioural Medicine Laboratory and a professor at the School of Exercise Science, University of Victoria, Victoria, British Columbia. His primary research and teaching areas are focused on the psychology of physical activity and sedentary behavior, with applied interests in early family development of physical activity and special populations. Dr. Rhodes has written over 250 peer-reviewed publications on these topics and has taught annual courses in the psychology of physical activity and sedentary behavior since 2002. He has held research chairs from the Michael Smith Foundation for Health Research (Population Health Scholar, 2003–2008), the Canadian Institutes of Health Research (Gender and Health Investigator, 2006–2011), and the Canadian Cancer Society (Prevention Scientist, 2011–2016). He received the Early Career Scholar award from the North American Society for the Psychology of Sport and Physical Activity in 2008 and was awarded fellowship in the Society of Behavioral Medicine in 2014. When not working, he spends time with his two daughters, Lauren and Rachel, and his golden retriever named Cooper, who always manages to keep him active.

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