

Questions^{and} Answers 4e

A Guide to Fitness and Wellness

GARY LIGUORI

SANDRA CARROLL-COBB

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A woman with dark hair tied back, wearing a light pink tank top and dark leggings, is leaning on a grey metal railing. She is wearing white earbuds and looking off to the side with a focused expression. The background is a bright, slightly blurred outdoor setting.

Questions
and
Answers

A Guide to Fitness and Wellness

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Questions
and
Answers

A Guide to Fitness and Wellness

Fourth Edition

Gary Liguori
Sandra Carroll-Cobb



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QUESTIONS AND ANSWERS: A GUIDE TO FITNESS AND WELLNESS, FOURTH EDITION

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Preface

Real Students' Questions; Practical, Research-Based Answers

Questions and Answers is built on questions—real questions about real health and wellness issues collected from real students at both two- and four-year schools across the United States. In responding to these student inquiries, authors Gary Liguori and Sandra Carroll-Cobb combine the latest science-based knowledge with practical guidance on concrete actions students can take now to improve their fitness and wellness.

Questions and Answers' active learning approach includes a focus on behavior change and the latest research and science.



FOCUS ON BEHAVIOR CHANGE

Questions and Answers' results-centered pedagogy ensures that the content of each chapter works toward the larger goal of making students active participants in their own life-learning. Critical-thinking questions and calls to action prompt students to evaluate the content and connect it to their own experiences.

Online video case studies follow real college students attempting to change their behavior and prompt readers to apply lessons from these experiences to their own behavior-change goals. A series of lab activities provide tracking tools and self-assessment forms that can be completed in print or online.

LATEST RESEARCH AND SCIENCE

The Fourth Edition features new research-based coverage of the use of digital technology, including new Tech Tips in every chapter that help students take advantage of apps and tech-based devices that will help them reach their fitness and wellness goals. Additionally, every chapter has been updated to reflect current scientific thinking, data, and statistics from such authoritative sources as the Centers for Disease Control and Prevention, the American Cancer Society, the American Heart Association, the U.S. Food and Drug Administration, and the U.S. Department of Agriculture.

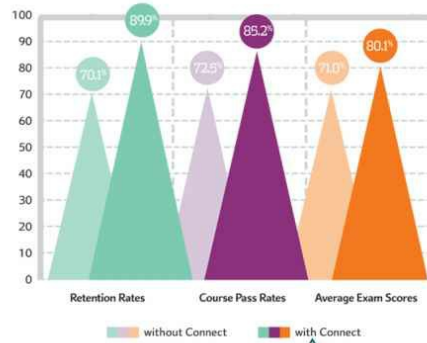


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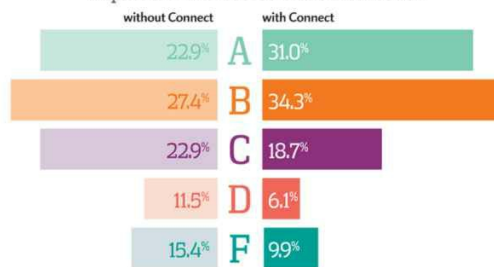
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Better Data, Smarter Revision, Improved Results

Students helped inform the revision strategy of *Questions and Answers*:

Step 1. Over three years, data points showing concepts that caused students the most difficulty were collected anonymously from the Connect Fitness and Wellness SmartBook product.

Step 2. The data from SmartBook were provided to the authors in the form of a *heat map*, which graphically illustrated “hot spots” in the text that affected student learning (see below).

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An early model of how chronic stress affects health is the **general adaptation syndrome (GAS)**, proposed by researcher Hans Selye. This model has three stages:

- **Alarm reaction:** The acute reaction to a stressor (fight or flight)
- **Resistance:** The body's attempt to adapt to the demands of a persistent stressor (such as negative work environment, chronic physical pain, care-giving, unhappy relationship)
- **Exhaustion:** The state of impaired functioning that occurs if a persistent stressor exhausts the body's resources for coping

MYTH or FACT?
Ulcers are caused by stress.
WATCH ONLINE

general adaptation syndrome (GAS) A model of the body's response to chronic stress; the three phases are alarm (fight-or-flight response), resistance, and exhaustion.

distress A negative stressor that causes emotional pain, anxiety, or injury; it may be chronic or long-term and cause anxiety and other unpleasant feelings.

allostatic load Cumulative physical damage of chronic exposure to the stress response, either

Selye's model also distinguishes between positive and negative stress. A positive stressor, or **eustress**, enhances physical or mental functioning (for example, strength training or a challenging school project). Negative stressors, or **distress** (for example, death of a family member or job loss), can cause emotional pain, anxiety, or injury, especially if the stress isn't resolved in an effective manner. Chronic exhaustion and distress are associated with increased risk for health problems.

Recent research has focused on **allostatic load**, which is the cumulative physical damage of chronic exposure to stress hormones. A

stressors, poor coping with stressors, inability to shut down the stress response, or an uneven stress response in different body systems. When people's allostatic load exceeds their ability to adapt and cope, they are at increased risk for a variety of health problems.¹¹

Underlying Factors in Stress-Related Health Problems

Q How does stress tear you down physically?

The links between stress and illness can be difficult to pinpoint because there is no standard measure of stress and there are significant individual differences in how people react to stressors and cope with stress. Two pathways of causality can be examined: behavioral and biological.

While under stress, people may engage in behaviors that either enhance or hurt their health. Negative health behaviors associated with stress include poor sleep, little or no physical activity, poor eating habits, smoking or drinking more, and avoiding regular or symptom-specific medical care. People who are stressed and engage in unhealthy behaviors are at elevated risk for developing health problems, having worse outcomes from disease, and even experiencing higher rates of premature mortality.

As described earlier, the physiological response to a stressor involves the release of cortisol, adrenaline, and other hormones that control the fight-or-flight response. The actions of these hormones are beneficial for acute stress but can cause problems if a person is exposed to frequent or chronic stressors. Concentrations of the hormones may build up if the body doesn't have the time or resources to recover. These hormones raise blood pressure and cholesterol levels, alter glucose metabolism, and suppress the immune system. They also cause an inflammatory response in the body, and chronic inflammation has been linked to many health problems, including cardiovascular disease, allergies, and certain forms of cancer.

Step 3. The authors used the heat map data to refine the content and reinforce student comprehension in the new edition. Additional quiz questions and assignable activities were created for use in Connect Fitness and Wellness to further support student success.

Result. Because the heat map gave the authors empirically based feedback at the paragraph and even sentence level, they developed the new edition using precise student data that pinpointed concepts that caused students the most difficulty.

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Instructor Resources

Instructor's Manual The instructor's manual includes materials to support course and class planning. Each chapter of the Manual provides learning objectives, key terms, a lecture outline, discussion questions, classroom activities, and Internet resources. Each Manual chapter also lists materials that can be assigned via Connect.

Test Bank The testbank includes multiple choice, true/false, fill-in-the-blank, matching, and essay questions. Questions are aligned to learning objectives, chapter content, and Bloom's taxonomy. They are designed to assess factual, conceptual and applied understanding. The testbank is available as a Word file, and through EZTest and TestGen™ software.

PowerPoint Presentation The PowerPoint presentations include key points and supporting images. The presentations are now WCAG compliant.

Image Gallery The Image Gallery features the complete set of downloadable figures and tables from the text. These can be embedded into PowerPoint slides.

Content Changes by Chapter

As mentioned earlier, the student performance heat map data from SmartBook was used to revise the text for greater clarity. And consistent with previous editions, the content includes updated statistics, figures, and data throughout. Chapter-by-chapter changes are as follows:

CHAPTER 1

- New “Fast Fact: Driving Distracted” box, with the latest data on digital device usage
- Expanded explanation of life expectancy with the new “Tech Tip: Calculating Life Expectancy” box
- Updated information on the effects of social media use in the “Research Brief: Social Networking and Social Wellness” box
- Updated information on student credit card use and the impact of the Credit Card Act on student debt
- Updated data throughout, including the latest figures on mortality, quality of life, and student health problems

CHAPTER 2

- New “Tech Tip” box describing apps designed to support behavior changes
- Revised, clearer figure showing the stages of behavior change

CHAPTER 3

- A new “Fast Facts” box suggests childhood games that are good exercise for adults
- A new “Tech Tip” box recommends active video games as an alternative to sedentary ones
- New information about the detriments of too much sitting
- Updated statistics on Americans living with disability and chronic limitations and American leisure-time physical activity

CHAPTER 4

- Wheelchair test added to Lab 4.1 for students with physical disabilities
- Addition of research findings that support HIIT as a means of cardiorespiratory fitness training
- New figure explaining fat vs. carb “burn” during exercise
- New “Tech Tip: Using a Heart Rate Monitor to Boost Interval Training” box
- New “Tech Tip: Moving on a Treadmill vs. Moving Outdoors” box

CHAPTER 5

- New “Tech Tip” box on pocket-size devices for isometric exercises
- New discussions of the occurrence of weight gain early in a resistance training program
- Additional emphasis on the role of resistance training in sport

CHAPTER 6

- New information on the characteristics of dynamic stretching
- New recommendations on backpack weights
- New “Tech Tip: How Smart Are Your Shoes?”

CHAPTER 7

- Clarifications regarding essential fat and the role of genetics in body composition
- New information on social media use and body image
- New “Tech Tip” box on the limitations of at-home body fat scales

CHAPTER 8

- Updates to reflect the 2015 USDA Dietary Guidelines, including the new food label
- New “Tech Tip” box on the use of technology in farming
- New evidence supporting plant-based diets
- Updates on the role of dairy in the diet
- Improved discussion of the role of AMDRs in planning a healthy diet
- More information about supplement safety, efficacy, and regulations

CHAPTER 9

- New “Fast Fact: Tips for Avoiding Weight Gain in College” box
- New “Fast Fact” box on how restaurant lighting may influence food choices
- New “Tech Tip” box on the potential for cold therapy to boost weight loss
- New “Tech Tip” box on the potential for digital avatars to support healthy behaviors
- New information on the cognitive aspect of behavior change as it relates to dietary changes
- More on popular diets and popular diet books
- Addition of the Physicians Committee for Responsible Medicine (PCRM) Power Plate as an alternative healthy diet choice
- Greater emphasis on the value of consuming “good” fats and reducing processed sugars

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- Expanded comparison of home cooked versus eating out options
 - Updated data throughout, including the latest on population trends in overweight and obesity

CHAPTER 10

- New “Research Brief” box on patterns in healthy and troubled marriages
- New “Fast Fact: Stress in America” box
- New “Fast Fact: Low Stress Living: Where Can You Find It?” box
- New “Tech Tip” box on the potential for apps to decrease stress
- Greater emphasis on the role of stress in helping us grow and learn, and the difference between positive and negative stress
- Coverage of addressing PTSD through posttraumatic growth therapy
- Additional information on sources of stress, including uncertainties about sexual orientation
- Expanded information on cognitive strategies for dealing with stress and on how assertive behavior can be used effectively
- Updated information throughout, including new research on the brain’s reaction to stress

CHAPTER 11

- New “Research Brief: What Is Sitting Disease?” box
- New “Tech Tip” box on setting up personal devices to make emergency information accessible to others
- Updated cancer screening and self-exam recommendations
- Expanded discussion of how cholesterol functions in the body and why cholesterol levels should be checked

- New information on the relationship of e-cigarettes and hookahs to cancer
- Additional research findings on improving happiness in the “Research Brief: Don’t Worry, Be Happy” box
- Updated data throughout, including the latest figures on prevalence and mortality rates for common chronic diseases, and the prevalence of high blood pressure and of frequently diagnosed cancers

CHAPTER 12

- New “Tech Tip” box on at-home gut bacteria tests
- New “Fast Fact: A Dozen Reasons to Practice Safer Sex” box
- Updates on antibiotic resistance
- New information on the role of gut bacteria in immune function

CHAPTER 13

- New “Fast Fact: How to Dispose of Prescription Drugs” box
- New “Tech Tip” box on technology under development to prevent drunk driving
- Additional tips on getting help for addictions
- New information on concussions and how they relate to substance abuse
- Increased attention to “street drugs” and opioids

About the Authors



Gary Liguori, PhD, is the dean of the College of Health Sciences at the University of Rhode Island, where he is also co-director of the Academic Health Collaborative and a Professor of Kinesiology. Gary received his PhD from North Dakota State University, MS from East Stroudsburg University, and BS from the University of Central Missouri. Gary has held faculty and administrative positions at the University of Tennessee Chattanooga, North Dakota State University, Youngstown State University, and the University of Wyoming. Gary is a fellow of the American College of Sports Medicine, and he serves on the Executive Council of the ACSM Committee of Certification and Registry Board (CCRB) and on the Executive Council of the ACSM Publications Committee. Gary was the senior editor of the first edition of *ACSM's Resources for the Health Fitness Specialist*, an associate editor for *ACSM's Guidelines for Exercise Testing and Prescription* (10th edition), and the senior editor of *ACSM's Health-Related Physical Fitness Assessment Manual* (5th edition). Gary has been a keynote presenter at venues around the world, published more than 30 peer-reviewed articles, and sits on the advisory board of numerous health, wellness, and medical organizations.



Sandra Carroll-Cobb, EdD, has been teaching health and physical education classes in schools, businesses, and medical facilities for over 25 years. Sandra has presented at a number of state, regional, and national conventions and has served the national committees of several professional organizations. Most recently at the University of Alaska Anchorage for fifteen years, Dr. Carroll-Cobb served as faculty, associate dean, and dean. During this time she remained active with health and physical activity programs throughout the community and state serving on the Conoco-Phillips Healthy Futures Advisory Board, as a statewide trainer for the Alaska Department of Education &

Early Development Team Nutrition grant, as a PEP grant evaluator for the Anchorage School District, and a contributor to the Alaska School Health and Safety Plan. Sandra was active on the Steering Committee for the State of Alaska Cardiovascular Health Coalition (Take Heart Alaska); the Executive Board of the Alaska Association for Health, Physical Education, Recreation, and Dance; and the Anchorage Community YMCA Advisory Board. Sandra now owns her own business where she does freelance writing, consulting and periodically works as adjunct faculty.