

collection of respiratory care texts, and quite likely an often-used one.

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Physiology of Sport and Exercise, 3rd edition. Jack H Wilmore PhD and David L Costill PhD. Champaign, Illinois: Human Kinetics. 2004. Hard cover, illustrated, 726 pages, \$75.

The third edition of **Physiology of Sport and Exercise**, published in 2004, is improved and expanded over the original 1994 and 1999 editions. Jack Wilmore PhD and David Costill PhD have compiled a comprehensive, large, hard-bound textbook that includes 21 chapters in 7 sections. It has 726 pages, with more than 300 color graphs and illustrations that help explain important concepts. The book refers the student to a free, online, self-assessment study guide at <http://www.humankinetics.com/physiologyofsportandexercise/osg>, which includes interactive activities, feedback, flowcharts, lists of key concepts from each chapter, and self-assessment quizzes. That Web site gives the student a convenient method of self-paced review, skill practice, and interactive knowledge development. The authors also provide a wealth of information and resources for the instructor, in various media. The latest book revisions include the most recent and important findings in research since the previous edition was released.

The authors kept the features that made the original book popular with students, and other attributes were added. Each chapter begins with a chapter overview and an outline that includes page numbers, to assist in locating topics. Other features that promote easy-reading include the highlighted areas, which jump out to catch the reader's eye, impressing the importance of certain facts. Author-designated "Key Points" sections are highlighted in violet colored boxes to thumb through for quick review. "Key Terms" are printed in red, alphabetically listed at the end of each chapter, and included in the book's glossary. Spread throughout the text are green-highlighted review boxes that recap the most important points. Additional blue "fyi" boxes insert interesting facts related to the chapter material. Each chapter

provides study questions to allow the student to review for knowledge assessment. Finally, each chapter closes with references and suggested readings. There is also a full glossary and a complete index.

The material is well organized; the text flows well and is easy to read. The pictures and diagrams contribute to further clarity of the material presented. The online access to study materials is an extra bonus that enhances the benefits of this book for the student and teacher. I wish I had this book when I was a student! I found no inaccuracies of facts or typographical errors in the book.

The introduction portion of the book is a comprehensive, 21-page historical review of the science and development of physiology in sport and exercise as they have materialized from other basic sciences. Parts I through III review the physiologic systems and their responses to exercise, both in the acute setting and with long-term training.

Part I, which includes the first 3 chapters, is titled "Essentials of Movements." The focus is on how the muscle and neurologic systems coordinate during movement of the human body, especially with exercise. Part II discusses how the endocrine system regulates metabolism and how the basic energy systems of the body provide the energy that allows movement. Part III (Chapters 7–9) discusses the interaction of the cardiovascular system with the respiratory system to deliver oxygen to the body's systems and remove the metabolic waste by-products and carbon dioxide. The section also elaborates on how the cardiovascular and respiratory systems adapt to aerobic training.

Part IV examines the body's responses and adaptations to unusual environmental conditions. Environmental issues such as thermoregulation and hypobaric, hyperbaric, and microgravity conditions are discussed in detail.

Part V evaluates the ways athletes can best optimize physical performance. Chapters 12–15 discuss the effects of training methods, nutrition balance, and substances reported to improve athletic performance ("ergogenic aids"). Chapter 14 discusses the appropriateness of various body builds and compositions for different sports, and the delicate issue of weight standard in certain sports.

Part VI is titled "Age and Sex Considerations in Sport and Exercise." The 3 chapters in this section explore how the general

principles of exercise and sport physiology can be more specifically applied as the athlete grows and develops from child to adolescent to adulthood. The authors discuss how the different life stages affect physiologic capacity and performance, the effects of women's issues on training, and the biological differences between women's and men's response to training and exercise.

Part VII, "Physical Activity for Health and Fitness," puts all the pieces together to apply the information from the previous chapters to suggest ways to prevent and treat various diseases. Chapter 19 discusses the latest in diagnostic techniques for medical clearance prior to starting an exercise program. The final chapters devote a section to exercise for rehabilitation, for various reasons, and prescriptions for maintenance of fitness levels once achieved. The book finishes with an in-depth look at prevention and treatment of cardiovascular diseases, obesity, and diabetes as they relate to physical activity.

The target audience is undergraduate college students, which could include various disciplines, primarily exercise physiology and physical education, but also possibly an advanced 4-year respiratory therapy program. A typical associate's degree respiratory program would not have the time to cover this material to the depth presented in this textbook.

As I read through this comprehensive book, I was very impressed with the depth and scope of knowledge, the excellent presentation style, and the high quality illustrations.

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Fundamentals of Lung and Heart Sounds, 3rd edition. Robert L Wilkins PhD RRT FAARC, John E Hodgkin MD, Brad Lopez EdD RRT. St Louis: Mosby/Elsevier. 2004. Soft cover (with CD-ROM), illustrated, 175 pages. \$52.95.

As a nurse educator, one of my most difficult tasks is to help students learn the proper technique of chest auscultation and to correlate the findings with the patient's condition. This text, **Fundamentals of Heart and Lung Sounds**, and its accom-

panying CD-ROM seemed to be an answer to my dilemma.

The purpose of the book is to “teach the skill of chest auscultation”—still a very necessary activity, despite advanced diagnostic techniques. The book offers many opportunities for the reader to develop assessment and critical thinking skills through completion of the chapter and case-study questions. Although the intended audience is students, the book is also useful for more experienced practitioners in medicine, nursing, and allied health professions. Even though the book and CD-ROM contain a plethora of information in addition to auscultation and have content above the student level, I found the information useful for different reasons.

As I reviewed the book and companion CD-ROM, I thought that, though there is a lot of useful information in the text, the book’s overall organization makes it difficult to follow. Some content is detailed, some superficial, and some appeared to be unrelated to the text’s stated purpose. For example, the CD-ROM includes examples of breath sounds from infants, even though infant assessment is not included in the text. At times it almost appeared as if chapters had been plucked out of other sources and placed in the text in random order.

The authors and contributors included informed physicians and respiratory therapists. My review of the literature revealed that the authors have collaborated on a number of publications on respiratory disorders. Even though the intended audience is students and practitioners in the allied health professions, only one respiratory care student and one critical care nurse were included on the panel of reviewers.

The chapters are consistently organized, with clearly identified objectives at the beginning of each chapter. Each chapter has a list of key terms, highlighted key points, illustrations, a summary of chapter highlights, a bibliography, and 8–15 multiple-choice questions with answers provided at the end of the book. The 10 case studies include pertinent history and physical findings, heart and lung sounds on the CD-ROM, and laboratory and diagnostic findings such as chest radiographs and pulmonary function tests. Each case study includes open-ended questions, with answers provided at the end of the book.

The first 2 chapters include a general re-

view of pulmonary and cardiac anatomy and physiology, with emphasis on the production of lung and heart sounds. A helpful section includes a description of the effect of low-density lung sounds (eg, chronic obstructive pulmonary disease) and high-density lung sounds (eg, pneumonia). Although the chapters give a good overview, it would be useful to review the events of the cardiac cycle, the relationship of heart sounds to the opening and closing of the heart valves, and the surface projection of the heart for the localization of assessment findings.

The third chapter, “Fundamentals of Sound,” emphasizes the physics of sound, including frequency, pitch, amplitude, and their effects on the transmission of lung sounds. Although the text describes the physics and relates the characteristics of the sound to conditions such as consolidation, this discussion could have been incorporated into the auscultation content. Most physical assessment books include charts of abnormal heart and lung sounds, with description of frequency, pitch, and amplitude of those sounds. In this chapter the reader is introduced to abnormal lung sounds before the related content in later chapters.

Chapter 4, “Bedside Patient Assessment,” reviews interviewing techniques, the most common chief complaints, and physical assessment techniques. Even though the chapter includes useful information, the content is disorganized and does not flow well. Inspection, palpation, and percussion of the lungs and heart are included, but the organization made it difficult to follow. There are a few sentences devoted to auscultation, but the reader is forced to read the later chapters on that topic. I was puzzled as to why information about liver palpation, lymphadenopathy, and sputum smears were included in this chapter. Included are useful charts that compare and contrast specific chief complaints.

Chapter 5, “The Stethoscope,” is of little benefit to the reader. There is a discussion about the features of stethoscopes, such as length of tubing. It would have been useful to compare the advantages and disadvantages of some of the available stethoscopes and to provide more information about safety issues, such as care of stethoscopes after exposure to infectious organisms. Most assessment books present this information in a condensed form at the beginning of the auscultation content.

Chapters 6 and 7, which deal with lung and heart auscultation, respectively, include applicable information for clinicians, but the organization and the isolation from the other information in the text made these chapters difficult to follow. I agree that the terminology used to describe lung sounds is confusing, but most assessment texts include all the terms used to describe lung sounds, especially since there is lack of consistency in clinical practice. The content was difficult to follow because of organization of the chapter, the confusing terminology, and the missing content. Charts describing pitch, intensity, and timing of the breath, and adventitious lung sounds would facilitate learning for students and be a helpful review for practitioners. Even though information about use of the bell and diaphragm appeared in Chapter 4, it would be beneficial to the student to include information on stethoscope use during auscultation. The content about heart sounds is disjointed and does not flow well. For example, the content about S1 and S2 heart sounds is interspersed with information about S3 and S4, forcing the reader to skip around the chapter. It would have been helpful to include charts of the differences between loudness, pitch, quality, location, radiation, and effect of position on heart sounds.

I recommend, to students and practitioners alike, the companion CD-ROM, which includes 43 infant and adult breath and heart sounds. The quality of the sounds is excellent, and ample listening time is given. If the text had included an index or list of the sounds, the reader could listen to them while reading and thus reinforce learning.

The case studies are clearly written and assist the student to reach the objectives, but I question the depth and amount of material included. The text’s focus is auscultation, and yet the case studies include chest radiographs, laboratory results, arterial blood gas values, and pulmonary function test results. Much of that content is absent from the text, but open-ended questions are asked about those subjects, which may increase the student’s frustration.

This book has several excellent features. The content, even with the organization problems, is useful for students and clinicians. The illustrations and charts are easy to understand and do illuminate the material. The CD-ROM contains some of the most clearly recorded lung and heart sounds I have ever heard. The information is written at a level understandable to most read-

ers, especially if they have a background in pathophysiology. The key terms, key points, chapter highlights, and questions emphasize the most critical aspects of auscultation.

Unfortunately, the problems with organization and missing or inaccurate content overshadow some of the text's good points. At times, the text lacks focus and wanders off into subjects other than auscultation. The chapter on bedside patient assessment is the best example of that problem. I found it odd that content about localization of auscultatory findings and assessment of infants, children, pregnant women, and older adults was missing. The dyspnea scale discussed in the book goes from 1 to 10, but my review of the literature indicates that a standard dyspnea scale is 0 to 10.

While I prepared this review I referred to several physical assessment texts, and I have some overall concerns about **Fundamentals of Lung and Heart Sounds**. Concepts and practices that are not strongly addressed include sequencing of the physical examination, the steps in listening at each cardiac auscultation area, and the use of techniques such as position change. As well, there should be a more complete description of lung-percussion sounds and a description of skeletal abnormalities and breathing patterns. Also, the book does not provide references to Web sites such as that of the American Thoracic Society, and many of the bibliographic references are outdated. For example, Chapter 4 referenced the 1991 edition of a physical assessment book edited by Seidel, and 3 editions of that book have been published since 1991!

In summary, I would not recommend this book for beginning students, primarily because of its organizational difficulties. Unfortunately, the CD-ROM—one of the strongest parts of this publication—must be purchased with the text. My review of physical assessment texts indicated that this material can be presented in a more clearly organized, succinct manner. It is unfortunate that the content was not put in a more readable publication; there is a lot of good information included, but the frustration of trying to follow it makes this book a challenge to read.

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Cardiopulmonary Imaging. Ella A Kazerooni MD MS and Barry H Gross MD. (*Core Curriculum* series). Philadelphia: Lippincott Williams & Wilkins. 2004. Hard cover, illustrated, 651 pages, \$99.

The chest radiograph is the most commonly performed imaging study in the United States. Its utility extends from screening and diagnosis in the clinic patient to following the course of disease and therapy in the critically ill. Radiologists, other physicians, nurses, respiratory therapists, physician assistants, and other health professionals routinely use chest radiographs to guide patient care. Despite its popularity and ubiquity, the chest radiograph remains one of the most difficult diagnostic tests to interpret. Compound this with the ever-expanding number of complex modalities used to image the thorax, and you begin to comprehend the accomplishment of the authors, Kazerooni and Gross, in writing this concise and well organized text, **Cardiopulmonary Imaging**, which is part of the *Core Curriculum* series.

The first 3 chapters address basic chest anatomy and physiology, imaging modalities, and the approach to the chest radiograph. These topics serve as a primer to understand and interpret the pathophysiology of thoracic disease as manifest on radiograms, computed tomograms, magnetic resonance images, ultrasound images, and nuclear medicine imaging studies. The anatomy and physiology are broken down by organ and anatomic structure. Labeled radiographs, cross-sectional images, and 3-dimensional reconstructions accompany the discussion. A basic overview of the various modalities, their applications, and a brief explanation of their physics follows. Basic diagrams drive home key points. A simple approach to reading the entire radiograph is then given.

The fourth chapter addresses the radiology report—a topic about which, after years of practice, most radiologists consider themselves expert, but upon which they seldom agree. The authors stick with consensus recommendations and add a bit of humor when extolling their own biases on report format.

The chapters that follow, with 2 exceptions, are dedicated to discussion of specific categories of disease and are organized by the clinical scenario that best aids the reader in narrowing the differential diagnosis. For example, the section on pulmonary infection is divided into chapters that address

infection in immunocompetent and immunocompromised hosts, while the chapters on lung carcinoma and mediastinal tumors separate the description of masses by anatomic location. This format helps the reader develop a useful framework for formulating diagnosis and clinical decision making based on imaging data.

These category-specific chapters also cover imaging of the critically-ill, trauma, pulmonary manifestations of systemic disease, congenital and acquired cardiac pathology, and diseases of the airways, pleura, pulmonary vasculature, and aorta.

The exceptions to the disease-focused chapters are Chapter 11, which addresses line, tube, and device placement and complications, and Chapter 22, which describes thoracic interventional procedures.

There was abundant thought put into making the text user-friendly. The book makes good use of tables, which list disease-specific findings and differential diagnoses, without making them so large as to become overwhelming or irrelevant. There are complete and current reference lists at the end of each chapter, organized in order of citation. The index is comprehensive and accurate. There is a wide outside page margin with brief summaries of important points and room for notes. The images are numerous and the reproductions are very good. When relevant, there is excellent correlation between plain radiographic findings and cross-sectional imaging. Examples of the more recent developments of 3-dimensional reconstruction and planar reformation are also demonstrated in appropriate cases.

This text is directed toward radiologists and radiology residents. Thus, other practitioners may discover this book to be too broad and detailed. However, the introductory chapters and the chapter on tubes and lines address topics immediately applicable to nursing, respiratory therapy, and other specialties. In addition, physicians whose practices involve chest imaging would find this book an excellent in-depth resource. I highly recommend **Cardiopulmonary Imaging** as a valuable addition to departmental and personal libraries.

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