

tive questions in the chapter on pulmonary critical care:

Q: What are the major causes of arterial hypoxemia?

A: Hypoventilation, ventilation-perfusion inequality, shunt, low  $F_{IO_2}$ , and diffusion impairment.

Q: How does one assess oxygenation?

A: Skin color, pulse oximetry and blood gas analysis.

Q: How does one assess ventilation?

A: End-tidal  $CO_2$  monitoring and blood gas analysis.

Q: What is a tension pneumothorax?

A: An injury to the lung allowing intrapleural air to collect without escaping via the chest wall. . .

Furthermore, the intentional lack of explanation will often force the reader to go elsewhere to learn about the subject. In addition, these rapid-fire questions bear little resemblance to the actual questions on the board examination. There are a number of overly simple true/false question, such as:

T/F: The more risk factors a patient has, the greater the chances of developing a DVT?

T/F: Only patients with known risk factors develop DVTs [deep vein thrombosis].

Many questions are repeated, occasionally even verbatim.

There is a chapter that intentionally includes more board-type case presentations with multiple-choice questions. However, even this section has too many true/false questions to emulate a board examination. Overall, this strict adherence to a rapid-fire question-and-answer format is one of the principle weaknesses of the book. As a board review, some of the answers are "too easy." And, as a general pulmonary medicine review for the rotating student, the answers often lack adequate explanation to serve as a primary review.

For the most part, the answers seem to be reliable, but occasionally opinion is stated as fact, and a few of the answers are outdated. The authors did a good job of sticking to safe, time-honored topics.

One other deficit is the almost complete absence of radiographs. Though the book contains textual descriptions of the radiographic and histologic appearance of various diseases, there is only one chest radiograph image in the entire text, and there are no histology or gross pathology images.

In conclusion, this book does succeed in being an affordable, quick read that covers a breadth of pulmonary topics. However, it suffers from being insufficiently broad or thorough for board review. It would function a bit better as a general review for the non-board-taker, but the rapid-fire question-and-answer format is better for assessing knowledge than for a primary review of it. The text further suffers from the near-complete absence of exemplary images. I would not recommend this text as a pulmonary board review and would caution the general pulmonary reviewer that it could serve as an adjunct but not a primary review source.

**Andrew Stiehm MD**

Division of Pulmonary, Allergy,  
and Critical Care Medicine  
Department of Internal Medicine  
University of Minnesota  
Minneapolis, Minnesota

The author reports no conflict of interest related to the content of this book review.

**Crash Course: Respiratory System.** Adam Myers PhD. *Crash Course* series, Daniel Horton-Szar, series editor. Philadelphia: Elsevier Mosby. 2006. Soft cover, illustrated, 242 pages, with online student consult access, \$29.95.

This book approaches the understanding of the respiratory system in an integrated fashion, which clearly surpasses the rote teaching method (ie, memorization). The text describes the normal respiratory anatomy and physiology, and integrates the concepts discussed with lung disorders throughout. Additionally, the pathophysiology, diagnosis, and treatment are discussed. This integrative format is an ideal adjunct for problem-based, evidence-based, systems-based, or more traditional curricula.

The book has 2 parts. Part I, "Basic Medical Science of the Respiratory System," consists of 7 chapters, and Part II, "Clinical Assessment," has 3 chapters. At the end of each chapter are several questions designed to reinforce the concepts discussed. Unfortunately, there is no bibliography, although several of the figures are referenced. I found the index useful and referred to it many times during my review. The book's color format is based on various shades of blue, which at first seemed pleasant, but some of the figures would have been clearer with additional colors.

Chapters 1 through 3 provide a cursory overview of lung anatomy and physiology, with figures, tables, and diagrams that are appropriate, not overdone, and easy to follow. Chapter 1 gives an abbreviated overview of the respiratory system that prepares the reader for what lies ahead in the succeeding chapters. Chapters 2 and 3 describe the anatomy and physiology of the upper and lower respiratory tracts, respectively, and their embryonic development. Chapter 2 also discusses disorders of the nose, pharynx, and larynx, whereas Chapter 3 describes defense mechanisms (at the physical, humoral, and cellular levels), some of the lung's metabolic functions, and fetal pulmonary circulation. The figures and tables support the text and are appropriate.

Chapters 4 and 5 address ventilation, gas exchange, perfusion, and gas transport. Particularly helpful, again, are the illustrations and tables, which visually reinforce concepts that can be difficult to grasp from just the written word. Chapter 4 provides a good description of dead-space characteristics, the distinction between minute and alveolar ventilation, and the definitions of various lung volumes. One minor discrepancy I noted was that the text uses the term " $V_T$ " for tidal volume, but most of the figures and tables use "TV." The description of pulmonary mechanics, especially the section on the compliance and elastic properties of the lung, is well written. The explanation and illustrations of airway resistance and work of breathing are well done. Some of the figures in Chapter 4 require close scrutiny because of their use of blue shading. In Chapter 5 the principles of hydrostatic, colloid osmotic, and colloid oncotic pressure are presented in relation to fluid balance in the lung. The concepts of filtration and reabsorption (ie, fluid dynamics) are not easily explained, but the author's attempt is noteworthy in this challenging subject. A couple of the figures are somewhat complex and may require a little extra attention, although they are important to understanding the concepts presented. Ventilation-perfusion relationships are addressed, along with consequences of their mismatch. Oxygen and carbon dioxide transport are described, which provides a springboard to the discussion of the oxyhemoglobin dissociation curve and the various factors that shift the curve (eg, temperature, pH, and 2,3-diphosphoglycerate). The various forms of hemoglobin and their effects on the oxyhemoglobin dissociation curve are also addressed.

One of the figures in this chapter provides the derivation of the alveolar ventilation equation, which seems unnecessary and may confuse some readers. There is a nice overview of acid-base balance and disturbance, along with a schema for interpreting acid-base disorders.

Interestingly, Chapter 6 ties in the neural, metabolic, and chemical control of ventilation with the pharmacologic agents used to treat respiratory diseases via the aforementioned "affectors." This appears to be a novel approach to the subject, which again illustrates the integrative format of the book. The control of ventilation is a complex topic, but the author does an outstanding job in synthesizing the information and presenting it clearly and concisely. The figures and graphs successfully support the text and reinforce the concepts. The section on responses to "extreme environments" was very interesting and took the physiology one step further. Chapter 6 includes a brief description of the cellular mechanisms of bronchodilators, steroids, and other respiratory drugs.

Chapter 7 describes the clinical features, diagnosis, and treatment of pulmonary diseases often seen in clinical practice. The author grouped lung disorders into: congenital abnormalities (eg, cysts and agenesis); infectious diseases (eg, pneumonia and tuberculosis); airway disorders (eg, chronic obstructive pulmonary disease, bronchitis, and alpha-1 antitrypsin deficiency); vessel disorders (eg, pulmonary congestion, edema, and acute respiratory distress syndrome); and interstitium disorders (eg, fibrosis, pneumoconiosis, and bronchiolitis obliterans). Also discussed are neoplastic lung diseases and their staging, iatrogenic pulmonary diseases, and pleural diseases. The descriptions of the pathogenesis of various lung diseases and types of emphysema are succinct and easy to follow.

Woven throughout all of the chapters in Part I are references to lung disorders associated with the physiologic and/or anatomic abnormalities described. This format integrates the underlying concepts with the overlying disease states, which definitely separates this book from many others. The use of icons and accompanying statements, dispersed throughout the chapters, reinforces the text and adds to the overall integrated format.

Part II addresses the clinical assessment of respiratory disease. Chief complaints, signs, and symptoms are addressed in Chap-

ter 8, the history and physical examination in Chapter 9, and tests in Chapter 10.

In Chapter 8, signs and symptoms (eg, cough, dyspnea, wheezing, sputum production, and chest pain) are characterized in terms of underlying cause. The types of sputum and patterns of hemoptysis are described. The author makes use of several diagnosis and treatment algorithms.

Chapter 9 begins with a framework for eliciting a history from the patient and ends with an overview of structuring a physical examination. However, it goes one step further by presenting a short section on verbal communication skills, tailoring the interview to the patient, and how to ask questions. Although those might seem intuitive and out of place in a physiology textbook, I extend a sincere thank you to the author. I believe that verbal and written communication skills cannot be overemphasized.

The section on finger clubbing includes a figure that shows normal fingers, but only a textual description of clubbing. An illustration of clubbing would have been useful. The illustrations of ptosis, neck anatomy, testing of the jugular venous pulse, and sites of percussion adds a nice dimension to the reading.

The last chapter describes commonly performed pulmonary tests. Tables describe the tests, normal values, and the meaning of high and low values. There is a short description of the closing volume measurement. Although I think this test is rarely used, the accompanying figure gives some insight into the distribution of alveolar ventilation; it might have been better placed in Chapter 4.

The section on imaging includes ultrasound, radiograph, pulmonary angiography, computed tomography, high-resolution computed tomography, and magnetic resonance imaging. Anecdotally, I recall a colleague who once said, and I paraphrase, a test should be ordered to confirm the diagnosis, not make it. He went on to say, that if you listen to the patient, the patient will tell you what is wrong.

In conclusion, because of the author's integrated approach to respiratory physiology, this is an outstanding book not only for a review of the respiratory system but also as an adjunct text for students. In teaching at one of the largest medical schools in the United States, it has been my observation that most first-year medical students have been accustomed to rote teaching at the undergraduate level. In medical school, how-

ever, the curriculum requires a more integrative approach, and this book provides that bridge between the rote and integrative methods. I thoroughly enjoyed reviewing this book and I will add it to my library.

**Marshall B Dunning III PhD MSc**

Division of Pulmonary  
and Critical Care Medicine  
Department of Medicine  
Froedtert Hospital  
Medical College of Wisconsin  
Milwaukee, Wisconsin

The author reports no conflict of interest related to the content of this book review.

**High-Yield Lung**, Ronald W Dudek PhD. *High-Yield Systems* series. Philadelphia: Lippincott, Williams & Wilkins. 2006. Soft cover, illustrated, 143 pages, \$29.95.

When beginning medical school, most students don't have a tried-and-true method for learning huge amounts of information or determining which of the myriad topics are most important or useful. No medical student likes having to memorize things that will be of no practical use as a physician, yet sometimes we feel as if we are doing just that. Of course, when they enter the clinical years, students figure out what they need to know, and forget the knowledge they don't. I often wished for a review book that revealed which were the clinically relevant topics and facts, and which could be crammed in before a test and subsequently forgotten. That book would include clinically relevant pictures and diagrams useful while on the wards. If only such a book had existed during my first 2 years of medical school, life would have been much easier. For today's medical student, **High-Yield Lung** meets that need. In comparison to most review books, **High-Yield Lung** does an excellent job of covering material that is useful both in tests and in the clinic.

Many review books are dragged down by a lack of pictures or visually pleasing layout. Not so with **High-Yield Lung**. The layout is easy to follow, and the figures and images are excellent, which is particularly nice, as most review books seem to assume that the relevant pictures are easily available elsewhere. Sometimes they are, but useful images are often scattered among multiple sources. In this book most of the figures are included with their related text in the chapter, though a notable exception is in the chapters on microbiology and pathology,