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Books, Software, & Other Media

Therapeutic Strategies: Asthma. Modern Therapeutic Targets. Riccardo Polosa MD PhD and Stephen T Holgate DSc FRCP MRC, editors. Oxford: Atlas Medical Publishing/Clinical Publishing. 2007. Hard cover, illustrated, 201 pages, $89.95.

This book provides a chapter-by-chapter survey of promising therapeutic targets currently under investigation. The information will be of interest to both basic and clinical researchers in respiratory and inflammatory disease, particularly young investigators who seek an introduction to promising drugs and novel pathways.

The need for innovative medications in asthma is clear. Asthma remains the most common of chronic respiratory illnesses and appears to be increasing in both prevalence and severity. For the typical affected individual, asthma is suboptimally controlled, despite the availability of safe and effective therapies. For a few individuals with asthma, even faithful compliance with maximal therapy fails to provide adequate control.

A broad range of topics is addressed in this small volume. Each author provides a thorough characterization of potential new compounds and the rationale for their use in asthma management. The writing style is clear and each author outlines the basic physiology targeted by each novel therapy, but the material can be challenging if the reader has no prior knowledge of the subject. The chapters are concise; most of the material is based on ongoing research, referenced to abstracts at medical meetings. The book's authors are well-known, established respiratory investigators. They make their arguments clearly, and the chapters are uniformly of excellent quality.

The authors followed a similar approach in each chapter. A pathway or mediator and its presumed role in asthma is described, then the rationale for targeting this pathway with a novel compound is discussed. This is usually followed by the description of what has already been developed and explored, noting in which phase of development each of these new compounds are.

The book has 4 sections, based on mechanisms of action, and 17 chapters. Every chapter provides good review about its subject and finishes with a concise summary. Each chapter typically contains 1 or 2 schematic figures in black-and-white, and 48 to 191 references. On the negative side, the chapters are not always well-coordinated. Related chapters sometimes seem disconnected from each other, whereas in other sections the introductions are overlapping and repetitive.

Section I deals with autacoids and their receptors in airway diseases. Four chapters then target adenosine receptors, transforming growth factor β, transcription factors, and the transcription factor nuclear factor kβ.

Section II focuses on enzyme inhibitors and deals with protease-activated receptors, nitric oxide synthase, and metalloproteinases. The chapter on nitric oxide is particularly interesting; the excellent review covers how nitric oxide has been used to monitor asthma and the delicate role of endogenous nitric oxide in the airways.

Section III describes the role of the sensory neuropeptides.

Section IV provides a very complete overview on anticytokines and cytokines. This section is perhaps the most clinically relevant, as it focuses on compounds that are already used on asthma, such as omalizumab, and also on substances successfully used for other chronic inflammatory disorders.

The book is clearly laid out and well organized, and the useful index helps find specific topics and compounds quickly.

For the reader who seeks an introduction on a broad range of innovative asthma therapies, this slim volume offers a concise but comprehensive survey.

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Respiratory Care Anatomy and Physiology: Foundations for Clinical Practice, 2nd edition. Will D Beachey PhD RRT. St Louis: Mosby Elsevier. 2007. Soft cover, 313 illustrations, color, 448 pages, $58.95.

Most students in the health professions do not fully appreciate the importance of having a firm understanding of physiologic principles until they are confronted with complex clinical situations. Indeed, problem-based curricula are designed to narrow this gap between the basic and clinical sciences.

The premise of **Respiratory Care Anatomy and Physiology** is, "to provide respiratory therapy students, practicing therapists, critical care nurses, and medical students with a physiological foundation to support clinical practice." The book has 23 chapters in 4 sections. The first section includes 14 chapters devoted to the respiratory system. It contains a basic description of the anatomy of the lungs and thorax, and discusses the standard topics covered in most pulmonary physiology textbooks, including the mechanics of ventilation, pulmonary blood flow, diffusion, oxygen and carbon dioxide transport, acid-base regulation, control of ventilation, the ventilation-perfusion relationship, arterial blood gases, pulmonary function measurements, clinical assessment of acid-base and oxygenation status, the physiologic basis for oxygenation and lung-protection strategies, and fetal and newborn cardiopulmonary physiology.

The second section is dedicated to the cardiovascular system. The topics include functional anatomy of the cardiovascular system, cardiac electrophysiology, electrocardiography, cardiac arrhythmias, control of cardiac output, and hemodynamic measurements.

The third section includes chapters on the cardiopulmonary response to exercise in health and disease, and the effects of aging on cardiopulmonary anatomy and physiology.

The final section discusses renal anatomy and physiology, and electrolyte and acid-base regulation in health and disease.

Various pedagogical aids are used throughout the text to help develop the critical-thinking skills required in clinical practice. Each chapter begins with a general content outline, learning objectives, and key terms, and ends with a bulleted list of important points to remember. Tables and multicolor illustrations are effectively used throughout the book to enhance the text. The "Concept Questions" and "Clinical Focus" boxes interspersed throughout the text

encourage the reader to apply the physiologic principles in clinical practice. A detailed content outline and extensive subject index are also provided. The 4 appendixes show symbols and abbreviations used in cardiopulmonary physiology, units of measurement, derivations of important equations, and the Dubois body-surface-area chart. An interactive Internet-based learning platform, which includes an instructor's manual, a test-question bank, and PowerPoint slides, is also available for instructors and students, but I did not review those materials.

The author does a good job of demonstrating how various physiologic concepts are related to clinical practice. The Clinical Focus boxes describe scenarios typically encountered in daily respiratory care practice. Good examples are found in the chapters on the mechanics of breathing and pulmonary function testing. I did find, however, that several topics could have been presented in a different sequence in the text that would better show the clinical correlations to basic physiologic principles. For example, the discussion of fetal and newborn cardiopulmonary physiology would be more meaningful (particularly for students in their first year of respiratory care education) if it were presented after the chapters on cardiovascular anatomy and physiology. It is difficult to fully grasp the consequences of any of the congenital cardiac defects presented without an understanding of normal cardiovascular anatomy and physiology. Similarly, I think the discussion of pulmonary-artery catheterization and the effects of left-ventricular dysfunction on pulmonary-artery-catheter measurements in the chapter on pulmonary blood flow would be more appropriately introduced in a later chapter. In fact, the author presented the same material on pulmonary-artery catheterization later in the text, where he discusses cardiac output and hemodynamic measurements.

Overall, I found the author's writing style succinct and easy to read. I think this textbook should be a useful adjunct for students in respiratory therapy programs that use problem-based learning, and for clinicians interested in learning more about the physiologic basis of respiratory care.

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A-Z of Chest Radiology. Andrew Planner, Mangerira C Uthappa, Rakesh R Misra. Cambridge, United Kingdom: Cambridge University Press. 2007. Soft cover, 211 pages, illustrated, $58.

A-Z of Chest Radiology is a concise guide to the imaging of acute and chronic respiratory conditions. Using the A-Z format, the authors included over 60 radiographic chest disorders (eg, asthma and sarcoidosis), radiographic findings (eg, Westermark's sign and lobar collapse), and general radiographic appearances (eg, lung consolidation).

The book begins with a brief primer on interpretation of plain chest radiographs, including fundamentals of radiograph quality-assessment, evaluating for patient rotation, and identifying key chest anatomy. The section describes what structures should be visualized in posterior-anterior and lateral normal chest radiographs. The book then delves into the abnormal findings, organized alphabetically. The discussion of each item begins with a brief review of its defining characteristics. Next is a short list of the most common clinical and radiologic features, accompanied by classic image examples of plain chest radiographs, and, frequently, chest computed tomography (CT) images. For each radiographic condition the authors include the differential diagnosis and a few management recommendations.

Physicians are the intended audience of this pocket guide reference. The authors suggest it also may be used for radiology boards review, but the lack of content depth makes that use unlikely. The overview of chest-radiograph interpretation and discussion of the imaging findings may be useful to respiratory therapists and nurses who want to learn the basics of radiographic interpretation and more fully appreciate their patients' conditions. Although the back cover purports that the text is "comprehensive," more specialized physicians, such as radiologists and pulmonologists, may find the reviews too straightforward and lacking needed advanced details.

The book is most useful for the relatively inexperienced reader of chest radiographs. Its initial overall review of interpretation of plain radiographs, and subsequent description of common abnormal findings, is excellent. Line diagrams beside posterior-anterior and lateral radiographs provide a "key" for correlating the anatomic structures to the radiographic findings. The labeling of ribs and mediastinal and hilar contents will be helpful to the novice. The sections on bronchiectasis, metastases, chronic obstructive pulmonary disease, and asthma show the classic findings of these diseases on plain radiographs. The sections on pleural effusion, lung consolidation, collapse, pneumothorax, and heart failure illustrate both the common and the trickier aspects of visualizing these frequent abnormal findings. This would serve as a handy tool for residents, general internists, or family practitioners who have basic radiographic skills and see common pulmonary conditions.

The text has a nice summary of common anatomical variants, congenital abnormalities, and mediastinal structures seen on chest imaging that may be missed or misinterpreted as other pathology. It also provides a nice reference for visualizing the thymus (normal and as a thymoma) and thyroid goiter. There are sections on pectus excavatum, mastectomy, abnormalities of the aorta, cardiac silhouette, and diaphragm, with images of various diaphragmatic hernias. The text will help practitioners to better localize the abnormalities and more accurately diagnose conditions. For common radiographic findings the book does serve as a concise, quick reference, and would be useful to a practitioner interpreting radiographs during a busy clinic.

The authors' choice of subjects for the A-Z topics, however, is a bit haphazard. It is difficult to discern the rationale for their choice of subjects. Though they do provide discussion of expected topics such as sarcoidosis, abscess, and hemothorax, they also included sections on freak anatomic variants (Macleod syndrome, Poland syndrome, foregut duplication cyst), while excluding more common pathologies seen by pulmonary physicians and chest radiologists. The text is missing discussion of less rare pulmonary diseases such as asbestosis, eosinophilic lung diseases, vasculitis, and pulmonary hemorrhage. The only interstitial lung diseases covered are idiopathic pulmonary fibrosis, hypersensitivity pneumonitis, sarcoidosis, silicosis, and pneumoconiosis. The discussion of CT findings is minimal and lacks any descriptors to help distinguish between the causes of interstitial pneumonitis and progressive fibrosis.

The authors chose to include a thorough discussion of the findings of neuroenteric