

**The Asthma Sourcebook**, 3rd edition. Francis V Adams MD. New York: McGraw Hill. 2007. Soft cover, illustrated, 254 pages, \$16.95.

The subtitle to this book, "Everything You Need to Know About: Recognizing the Signs and Symptoms of Asthma; How to Reduce the Risk of an Asthma Attack; Asthma Medications and Delivery Systems; Treatment Strategies for Mild, Moderate, and Severe Asthma; Special Considerations and Related Illnesses," sets a very high standard, but for the most part the author meets the standard he set for himself.

**The Asthma Sourcebook** is aptly named, for it is a comprehensive guide to virtually all the aspects of asthma a knowledgeable reader would ever want to know. The book describes what asthma is, how it is diagnosed, what an asthma attack involves, and the medications available to treat asthma. The book goes on to discuss some of the more problematic aspects of medication treatment, including patient adherence to therapy, and it discusses various actions an asthmatic can undertake as a participant in managing his or her asthma.

The book then proceeds with a discussion of asthma in special contexts (eg, pregnancy, occupational causes, exercise, illnesses related to asthma) and some special considerations (eg, asthma and surgery, asthma and menopause). After a very brief visit to the world of alternative medicine, the book concludes with a look to the future, including new medications and devices, new ways to manage environmental factors, and new ways to create successful partnerships in managing asthma.

So, at least from the description of the contents the book seems to live up to its subtitle. But *touching on* all of the subjects in the subtitle is not the same as providing useful, understandable, and comprehensive information about each of the topics in the broad table of contents. With a few stylistic exceptions, and with the exception of the chapter on alternative medicine, the book is as good as its word; it is indeed everything you need to know. However, a very important qualifier in reviewing this book is to make sure the potential reader knows who the "you" is in the "Everything You Need

to Know." This is not a book for a casual reader looking for a superficial view of asthma. Though not as technical as a medical textbook or a specialized medical journal article, Adams does not shy away from using medical terminology in describing what asthma is and how it is treated. But, like any good textbook teaching a difficult subject, this book rewards the reader who takes care to understand the concepts introduced early on, for when they are referenced later in the book.

For example, the first chapter, "What is Asthma?" describes asthma in terms of the common symptoms most asthmatics are familiar with: inflamed and swollen bronchial tubes and mucus production. But it doesn't stop there. The reader gets a brief lesson in the anatomy of the alveoli and the interplay between the nervous system and the lungs, with descriptions of the sympathetic and parasympathetic branches of the autonomic nervous system. We're taken even deeper into the physiological aspects of asthma; on our way to learning about  $\alpha$  and  $\beta$  receptors we learn about the chemicals that mediate effects of the nervous system, the neurotransmitters, and agents and medications that mimic the effect of those chemicals.

Why all this detail? I said the careful reader is rewarded for diligence in the early chapters. The rewards show up in the ensuing chapters, which describe an asthma attack and diagnosing asthma with some of the terms explained early in the book. But the biggest reward comes in the medication chapter, where I, for the first time in my asthma-medicated life, understood the differences between the various asthma drugs and their intended effects. And this brings us to me. My perspective on this book is, of course, greatly influenced by my own experiences as an asthmatic, my preexisting understanding of the causes and treatment of asthma, and my own treatment plan.

I was diagnosed with asthma at age 6, in 1954. My asthma symptoms largely went away with the onset of puberty, but returned in a different form around age 18. My symptoms as a child were primarily wheezing episodes, with extreme difficulty breathing. My symptoms as an adult are primarily lung congestion associated with illnesses such as cold and flu. There were few effective med-

ications available in my youth and young adulthood, and it wasn't until a nearly fatal asthma episode at age 26, in 1974, that I was introduced to certain available medicines, primarily theophylline, oral steroids, and rescue inhalers. My only recourse before 1974 for asthma problems was over-the-counter epinephrine-based inhalers, which I greatly overused. The asthma medications I was given in 1974, and those added as the arsenal of drugs expanded, saved my life, and I am very adherent to all my prescribed medicines. I have quality doctors with up-to-date knowledge, to whom I have easy access.

So for me this book was an explanation of the treatment I was already receiving—or was about to receive. One of the new drugs discussed in the book is omalizumab (Xolair). Between the time I received **The Asthma Source Book** for review and the time I wrote this review, I was started on omalizumab. I did extensive research on this new drug. To the author's credit, I found little useful information in my own research that was not included in **The Asthma Sourcebook**.

As I look back on my own experiences, I conclude that in most ways users with different experiences will have a similar or even more positive reaction to this book. For example, my asthma is moderate to severe, and I take a combination of most of the recommended medications. For an asthma patient with less severe asthma, or a parent or spouse of such an asthma patient, what dosage of what medications to take is, in most cases, simply a matter of following your doctor's advice. This book's detailed descriptions of asthma, how the various asthma medications work, and what portions of the asthma spectrum they deal with, provides the patient (or parent or spouse) an extremely valuable source of information to weigh along with the doctor's recommendation. The book aids the patient/caregiver in asking informed questions and allows them to play a strong partnership role in the treatment plan. For example, in the chapter on medication treatment strategies Adams lays out medication types and dosages for patients with mild, moderate, and severe asthma, and what medications to consider adding if the symptoms do not improve or

the patient experiences a flare-up. He also sets out a plan for early detection of exacerbation symptoms and the progressive interactions that are needed. He discusses monitoring your asthma symptoms with a peak flow meter, determining your personal best, and setting up a treatment strategy for intervening when the peak flow falls by 25%, 50%, or 75% of your personal best. This early-detection/intervention strategy has been the hallmark of asthma treatment for more than 20 years, and this easy-to-understand strategy for early intervention is a helpful addition to that overall treatment plan. With this knowledge an asthma patient (or his or her support person) is in a much better position to evaluate the doctor's recommendations.

What are the shortcomings of the book? I found two that are easily addressed and another one less so. The first problem I encountered, which is more one of style than substance, was in this effort I described earlier of being a careful reader from the start. For a layman in the field of medicine, I am relatively knowledgeable about asthma, and I can read and understand complex material with a new vocabulary. But I found the early going difficult, particularly in internalizing some of the medical terminology. For example, on page 4, in one short paragraph the reader is introduced to "adrenergic" and "cholinergic" effects and "acetylcholine" and "epinephrine" neurotransmitters. The only one of those I was familiar with was epinephrine. Then, "boom," we were on to a discussion of  $\alpha$  and  $\beta$  receptors. My reading and comprehension style would have benefited from a slightly longer discussion of the neurotransmitters, perhaps explaining their function in more general terms before introducing the foreign terms. As it was, my eyes (and brain) glazed over when I hit these foreign words, and I was not as equipped as I should have been later in the book when anticholinergic drugs were discussed.

The second problem was one of substance. This book is 207 pages long, only 6 pages of which were devoted to alternative medicines, so the discussion of alternative medicines was brief and summary, and many of the alternative approaches were dismissed as not meeting the scientific requirement of proven value. Though my own life-threatening experience with asthma made me a firm believer in traditional medicine, my wife and son are strong believers in alternative approaches to medical problems.

They encourage me to consider such treatments. Other than responding with a simplistic argument that there is no medical evidence those treatments work, I have little answer for them, and, unfortunately, this book's skimpy treatment of this subject did not make me any more informed. Notwithstanding my biases in favor of traditional medicine for asthma, based on my own experiences, I am aware of the substantial impacts alternative medicine, including lifestyle changes, can have. I would like to have seen a less judgmental, more descriptive treatment of alternative approaches.

The third shortcoming is this. Though I am an extremely "religious" follower of the medication treatment plan my doctor set out for me, it is clear that I am in a distinct minority among asthmatics. Adams provides anecdotes about patients who simply did not follow their treatment plans and did not take their medicines. For example, one patient drank black tea instead of taking his medications, even though he was experiencing periodic bouts of asthma severe enough to send him to the emergency room. For all the discussion of the physiology of asthma and current and future asthma drugs, a patient in 2008 who does not adhere to his or her prescribed asthma regimen is in no better position than I was in 1958, when few drugs were available. I'm sure this non-adherence to therapy is a major frustration for allergists and asthma doctors. I'm equally sure that, in these days of 4-to-6-patients-an-hour medical practice, little can be done to improve that adherence. This seems to be a classic situation where spending a dollar now on adherence would provide many dollars of return in fewer asthma flare-ups and emergency-department visits. I would like to have seen some discussion of therapy adherence and research on improving it, or at least objectively monitoring it. I'm not a research scientist, but I can think of several protocols that should be tested to see if they improve adherence.

So perhaps **The Asthma Sourcebook** is not really *everything* you need to know about asthma and asthma treatment, but it's pretty darn close, and for me it was an extremely informative read.

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The author of this review reports no conflict of interest.

**Therapeutic Strategies in Asthma: Current Treatments.** Riccardo Polosa and Stephen Holgate, editors. Oxford: Clinical Publishing. 2007. Hard cover, 192 pages, \$89.95.

**Therapeutic Strategies in Asthma: Current Treatments** explores the pharmacology and pharmacobiology of asthma. It does not address the control of asthma triggers or how to facilitate adherence to therapy. The book appears to be most concerned about evaluating current knowledge to point the direction to future asthma drugs. It is consciously less concerned about the present than the future. The preface states that the goal is to "provide readers with an overview of possible novel approaches in a field in need of innovation." This book is likely to be most interesting to scientists interested or involved in asthma drug development. For those interested in a clinically applicable, practical review of current asthma therapy, the reader would be better served by the current asthma care guidelines from the National Asthma Education and Prevention Program<sup>1</sup> or the Global Initiative for Asthma.<sup>2</sup>

Chapter 1 focuses on the role and mechanisms of glucocorticoids in asthma, with an emphasis on mechanisms and mediators. This chapter touches on a large amount of complex material, and, unfortunately, within the space constraints it does not do the material justice. To someone who is not a molecular biologist, it reads like a poorly organized list of pathways and mediators. Each mechanism and mediator has its own acronym, each defined at first appearance; I counted 46 acronyms in the chapter. This made for a very difficult read.

Chapter 2 examines risk/benefit assessment of long-acting  $\beta$  agonists and touches on the controversies about down-regulation of the  $\beta_2$  receptor and the role of enantiomers. Research on ultra-long-acting  $\beta$  agonists in development is described.

Chapter 3 reviews  $\beta_2$  agonist activities other than bronchodilation. In vitro research has documented inhibition of mediator release from mast cells, degranulation of eosinophils, and inhibition of lymphocyte function, although tolerance to these effects occurs rapidly. However, in vivo, clinically important anti-inflammatory effects of  $\beta_2$  agonists have not been demonstrated. The authors believe that the disparity between those in vitro and in vivo responses is best explained by the rapid desensitization of  $\beta_2$

adrenergic receptors on airways inflammatory cells.

Chapter 4 reviews combination therapy for asthma. This chapter focuses on the combinations of inhaled corticosteroid plus long-acting  $\beta$  agonist. Other combinations, such as inhaled corticosteroid plus leukotriene modifier or inhaled corticosteroid plus theophylline, are not discussed. There is speculation on mechanisms of synergism of the combination of long-acting  $\beta$  agonist plus inhaled corticosteroid. Preliminary data suggest that inhaled corticosteroids may block the down-regulation of  $\beta_2$  receptors, and  $\beta_2$  agonists may activate glucocorticoid receptors.

Chapter 5 discusses the leukotriene modifiers, both in comparison to inhaled corticosteroids and in combination with inhaled corticosteroids. The chapter does not differentiate between the leukotriene-receptor blockers zafirlukast and montelukast and the 5-lipoxygenase inhibitor zileuton.

Chapter 6 examines the phosphodiesterase inhibitors. Work on the development of new selective phosphodiesterase-4 inhibitors is described. Chapter 7 reviews the anticholinergic agents. Chapter 8 reviews research on anti-immunoglobulin E monoclonal antibodies in asthma. Chapter 9 discusses immunotherapy for asthma, which preliminary research suggests may attenuate the progression from allergic rhinitis to asthma.

Chapter 10 investigates strategies to shift the T helper cell type 1 (Th1) phenotype to Th2. The research focus is on purified bacterial products, specifically the immunostimulatory bacterial CpG deoxyribonucleic acid, either alone or as an adjuvant with traditional immunotherapy. Preliminary proof-of-concept studies demonstrated suppression of Th2-associated cytokines and increased production of Th1-associated cytokines from administration of immunostimulatory deoxyribonucleic acid conjugates. The authors caution that definitive clinical data are lacking.

Chapter 11 examines research on antimicrobials in asthma. The chapter notes that the studies that found no benefit from antimicrobials in asthma failed to examine medications effective against chlamydia and mycoplasma. The chapter describes seroprevalence data that suggest an association between chlamydia, mycoplasma, and asthma, and describes molecular mechanisms by which chronic, subclinical infection with these organisms could lead to the

phenotype of chronic asthma. Clinical studies of macrolide therapy in asthma have suggested some benefit but have not yielded consistent dramatic sustained improvements. The authors speculate that failure to eradicate the organisms may be a factor in the lack of sustained response, and that some of the benefits observed may be from immunomodulatory (rather than antibacterial) properties of the macrolides. They note that studies are limited by small numbers and differences in the methods used to define infection.

Chapter 12 covers treatment of acute asthma. The authors note studies that found harm from administration of 100% oxygen in acute asthma and suggest that the fraction of inspired oxygen should be titrated to target  $P_{aO_2}$  or arterial oxygen saturation. They also review the studies on levalbuterol versus racemic albuterol and conclude that, although there are theoretical advantages to levalbuterol, the randomized studies found no clinically important difference between the two. The authors were also not convinced that the research showed any advantage of formoterol over albuterol in acute asthma.

Chapter 13 looks at the use of inflammatory markers to guide therapy. The authors note that sputum eosinophilia suggests corticosteroid responsiveness, although lack of sputum eosinophilia does not rule out a corticosteroid response. Exhaled nitric oxide increases with deterioration of asthma control. The authors note that one study suggested that exhaled nitric oxide monitoring may allow a lower inhaled corticosteroid dose than would be used if following the Global Initiative for Asthma guidelines.<sup>2</sup> On the other hand, it is not clear if a high exhaled nitric oxide in an otherwise asymptomatic patient requires action. The authors conclude that exhaled nitric oxide monitoring in asthma requires further evaluation to determine if it will be useful in routine clinical practice.

The final chapter examines the effect of cigarette smoking on asthma. The authors point out the decreased response to oral and inhaled corticosteroid among both active smokers and individuals with involuntary tobacco smoke exposure. Of course, the best treatment is smoking cessation, but the authors point out that this is often difficult to achieve in tobacco-dependent individuals. They also note that, because of the exclusion of smokers from medication trials in asthma, optimal pharmacotherapy for asth-

atics who smoke has yet to be determined. Smoking increases urine cysteinyl leukotrienes, and the authors speculate that leukotriene-modifier medications might benefit asthmatics who smoke.

In summary, this book meets its stated goal to "provide readers with an overview of possible novel approaches in a field in need of innovation," particularly in relation to asthma pharmacotherapy. The book is likely to be useful to scientists and others who wish to investigate novel approaches to asthma. However, individuals looking for a clinically useful summary of current asthma treatment would be better off referring to the asthma management guidelines.<sup>1,2</sup>

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The author of this review reports no conflict of interest.

1. Expert panel report 3: guidelines for the diagnosis and management of asthma. Bethesda, Maryland: National Institutes of Health, National Asthma Education and Prevention Program; 2007. NIH Publication No. 08-4051. <http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf>. Accessed April 1, 2008.
2. Global Initiative for Asthma. Global strategy for asthma management and prevention. Updated December 2007. <http://www.ginasthma.com/guidelinesresources.asp>. Accessed April 1, 2007.

**Models of Exacerbations in Asthma and COPD.** Ulf Sjöbrink and John D Taylor, editors. *Contributions to Microbiology* series, volume 14, Axel Schmidt and Heiko Herwald, series editors. Basel, Switzerland: S Karger. 2007. Hard cover, illustrated, 145 pages, \$132.

Exacerbations of asthma and chronic obstructive pulmonary disease (COPD) are important components of these airway diseases. As we try to enhance our understanding of these phenomena, we need experimental models that mimic the pathobiological processes in exacerbations. These model systems could include both animal models and human experimental models. This book is a timely addition to the literature in this growing field of research. The book has 5 sections: Introduction, Human Asthma Models, Animal Asthma Models, Human COPD

Models, and Animal COPD Models. The contributors are experts in the field and are actively involved in developing the model systems they describe.

My expectation about such a book would be that each chapter would address the biological relevance of the model being discussed, outline the experimental approach in the model, discuss the model's limitations, and discuss the future of the modeling approach. The introduction section reviews the definitions, clinical manifestations, and epidemiology of exacerbations. Though adequate, this section would have benefited from a description of the relative importance of the various etiologies of asthma and COPD exacerbations, which would have provided context for the subsequent chapters. Another interesting discussion that would add value would be on the overall role of modeling in exacerbation research.

The chapters that deal with the models themselves for the most part met the criteria described above, and provide adequate and up-to-date information. The human asthma models address human rhinovirus models as well as allergen inhalation challenge. The biology of both these models was well addressed, but the chapter on rhinovirus lacked details of the models. The chapters on animal asthma modeling addressed rhinovirus infections, house dust mite exposure, and respiratory syncytial virus. There are a few animal models for rhinovirus, but several cellular models are well described and are adequately discussed. The house dust mite exposure chapter is the longest chapter, and it does an excellent job of describing the models, their historical development, and the underlying philosophy of modeling airway diseases. The chapter on respiratory syncytial virus did not add much to the book, because there were no animal models discussed, and it is basically a review of respiratory-syncytial-virus-induced pulmonary disease and asthma.

The human COPD exacerbation models discussed include lipopolysaccharide challenge and rhinovirus infection. Both of these sections had well written descriptions of the models' biology, experimental details, and results. This is a field that is likely to have exciting developments in the near future.

Another burgeoning field of research is animal COPD models. Cigarette-smoke-induced COPD models and animal models of exacerbations are discussed in 2 separate chapters. The discussion on the smoke-induced COPD model was authoritative and

well written, but it lacked a description of the methods. Animal modeling of COPD exacerbations is just emerging, but the authors did an excellent job of laying the groundwork of how such models should be developed.

In summary, modeling exacerbations of asthma and COPD is a growing research subject, and this book provides an excellent overview of the field and the contemporary knowledge of the biology underlying exacerbations. The book should be useful for investigators interested in asthma and COPD exacerbations and who want to model them as part of their research.

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The author of this review reports no conflict of interest.

**Pleural Diseases**, 5th edition. Richard W Light MD. Philadelphia: Wolters Kluwer/Lippincott, Williams & Wilkins. 2007. Hard cover, illustrated, 427 pages, \$139.

Pleural disease is a common clinical entity that may present to general physicians and respiratory physicians alike. This is an expanding field, and a subspecialty within respiratory medicine, so it unsurprising that there have been important recent clinical and basic-science advances.

**Pleural Diseases** is a well written and thorough textbook by one of the world's leading authorities on pleural disease. It is aimed at respiratory physicians and pleural disease researchers, and it is authoritative and comprehensively referenced. It offers a detailed review of pleural anatomy and physiology in health, the effects of pleural disease on normal lung physiology, and all aspects of clinical pleural disease, and encompasses investigation (radiological, biochemical, microbiological), clinical manifestations, and treatment.

The book has 30 chapters, the first 3 of which address the basic structure and function of the pleural space. Two chapters then cover animal models and cytokines. The rest of the book addresses clinical manifestations and management. There are chapters on radiology, clinical manifestations, and

useful tests, and a well written approach to the patient with pleural disease, which will be particularly relevant to and useful for practicing clinicians. Eighteen chapters cover specific pleural disease syndromes, and the final 3 chapters are devoted to specific procedures associated with pleural disease, such as thoracentesis, pleural biopsy, chest drains, and medical thoracoscopy.

This is the fifth edition of **Pleural Diseases**, which was first published in 2001. Since then there have been substantial advances in the understanding of basic mechanisms, and some landmark clinical studies. The recent advances are covered in excellent detail, and presented in a readable manner. Three new chapters have been added since the previous addition: one on physiological effects of pleural effusion and pneumothorax, one on cytokines in pleural disease, and one on animal models of pleural disease.

The book is well laid out and has clear and appropriate illustrations and tables. Algorithms are often used to good effect, are based on current European and American guidelines, and are likely to be very useful to clinicians.

There is good depth in the subject matter. Common scenarios (eg, transudative pleural effusion, malignant effusion, pleural infection, and pneumothorax) are dealt with thoroughly, current evidence is evaluated, and there are descriptions of pathways for investigation and treatment on the basis of this evidence. Less common and more "esoteric" pleural diseases, such as chylothorax and pleural effusion in pregnancy, are well covered.

The chapter order is lucid. The book starts with basic structure and function, then describes research tools and models, then generic investigations, then the common pleural diseases, then the less-well-known pleural diseases.

Though pleural disease is common, there is relatively little evidence from randomized controlled trials to inform clinicians on optimal treatment or investigation strategy. Where good-quality evidence exists, the book deals with it in detail and presents clear and logical arguments about study findings and conclusions. Where there is a lack of good-quality evidence, the author intelligently summarizes the current evidence, such as it is, and offers a personal opinion on the correct management or investigation strategy. The book occasionally suggests management strategies that are "current

practice” but may not be founded in good-quality evidence (eg, poor prognostic indicators in pleural infection are suggested but have not been consistently borne out by existing studies), and it is the author’s own opinion and conclusions that are quoted. This is both valid—given the lack of evidence—and valuable to clinicians, for whom the opinion of an experienced pleural disease researcher and practitioner is highly valued. It also reflects the poor evidence base in this field.

The book is understandably focused on an American audience. For example, most authorities in pleural disease in Europe would use sterile talc as the agent of first choice for pleurodesis, whereas this book recommends avoiding sterile talc because of concerns about acute respiratory distress syndrome. Recent evidence suggests that acute respiratory distress syndrome is not a common problem with European talc, which

may be related to a difference in particle size between that found Europe and the United States.

The definitive textbook on pleural disease, *Textbook of Pleural Disease*, edited by Light and Lee, brings together a long list of prominent authors from around the world, and deals with every aspect of pleural disease in some detail. **Pleural Diseases** is not as comprehensive or detailed, but it does not attempt to achieve the same aims. This is, rather, a text that thoroughly updates the clinician on the current state of evidence in the practical investigation, management, and research of pleural disease.

In summary, **Pleural Diseases** is an excellent and well referenced book that will bring the reader up to date on important research. It will be valuable for researchers, with good sections on experimental models, recent advances, and important future research directions. The chapters on basic

mechanisms and physiology are well written and essential reading for those entering this field. The book is also an excellent practical companion for practicing clinicians with an interest or substantial practice in pleural disease, and I highly recommend it. The book aims to better the management of patients with pleural disease and to provide an up-to-date reference, and it achieves both of these aims in a readable and well-laid-out format.

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The author of this review reports no conflict of interest.