are the figures and tables. I did not find any typographical errors in my reading of the volume. The illustrations are in black-and-white. The reproductions of electron photomicrographs in the chapter on man-made vitreous fibers are gorgeous and clear, as are most of the reproductions of radiographs and chest computed tomograms. Slides of histologic sections, and even some of the radiologic illustrations, would benefit from clarifying markers, such as arrows, to point out the salient features mentioned in the captions. Color plates of histologic sections would also add to the utility, although they may not be worth the added cost, especially if the labeling is expanded, as mentioned above. The text uses "American English," which makes it accessible for the North American user without making it difficult for others to navigate. For a multi-author book the text is remarkable for its uniform readability and clarity of language.

I found the references to the literature complete and representation of the data accurate and complete. Most of the controversial issues were treated fairly and thoroughly, with adequate referencing of the literature. For instance, the discussion of asbestos and the occurrence of lung cancer in those with and without pulmonary fibrosis (ie, asbestosis) is representative of discussions in this book. It is well developed and clear, with extensive referencing of the current epidemiologic evidence and analyses. The opinions of the authors (Michelle Ng Gong and David C Christiani) are clearly stated and identified as such.

The index is close to complete and adequate. Adding a list of the supplementary boxes and a list of the difficult cases (summarized by one line) to the table of contents would be helpful.

This is an excellent work, but it would be strengthened by fuller discussions of sinus and upper airway disease and indoor-environment-related disorders; and a chapter of the construction trades is needed to demystify that industry. In editions to follow the editors should apply their formidable skills to elucidate topics that present challenges on a regular basis in practice settings: sleep disorders and work, evaluations of lung health in the aftermath of natural and man-made disasters, discussion of the consequences of removal from work, and a discussion that would address patients who are immigrants from parts of the world where exposures at work sites and underlying pulmonary pathology pose unique challenges.

The editors state that this textbook serves to "draw attention to the changing nature of the contribution of the occupational environment. . . to lung disease. . . and to the particular difficulties this poses for those who find themselves responsible for patient care or the management of relevant industries." Furthermore, the chapter authors were charged with giving practical advice on the "recognition when a given respiratory disorder is occupational in origin, whether partly or wholly; managing its consequences in both the affected individual and his/her place of work and preventing its occurrence in the future." This text does very well to meet those goals. I recommend its addition to the libraries of pulmonologists, allergists, and occupational medicine practitioners with active occupational lung disease practices. It will also serve as an excellent reference for general respiratory practitioners, and for trainees who run into cases of occupational lung disease less frequently. I agree with the editors that this is a needed text that contributes to the understanding and recognition of the medical and nonmedical issues surrounding occupational lung disorders, at a time when diagnosing work-related disease is crucial, as it can lead to effective treatment and prevention.

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Pulmonary Biology in Health and Disease. F Edward Bittar MD, editor. New York: Springer-Verlag. 2002. Hard cover, illustrated, 428 pages, $249.

Though this book classifies itself as a textbook, it is more like a compendium of topics in pulmonary biology and medicine. It is as if the editor asked several experts in the field to write about favorite topics in their expertise and each replied with a chapter in a different style, with different emphasis and different organization. Thus, there is no global unifying principle to the book. There is overlap in some areas and topics are overlooked in others. However, each chapter by itself can be considered a state-of-the-art review on the topic by an authority in the field. Thus, it is more of a reference than a textbook. Any health care worker interested in a specific topic would be well served by reading the appropriate chapter or chapters, which, for the most part, stand alone.

There are 22 chapters. The first chapter deals with the anatomy of the respiratory system but, unlike many classical textbooks, there is an excellent discussion of the ultrastructures. Other topics that we would generally think as part of anatomy are interspersed with function and pathology chapters. For example, the second chapter deals with the airway epithelium; the third chapter discusses the chemistry and the pathology of surfactant; the fourth chapter covers the regulation of airway caliber; and asthma is detailed in Chapter 20, which provides an extensive discussion of the cells involved with inflammation.

What we typically think of as mechanics is discussed in Chapter 9, called "Mechanics of Respiration," but also in the sections on regulation of airway caliber (Chapter 4), the respiratory muscles (Chapter 8), and airway wall liquid (Chapter 13). There is also overlap between airway caliber and the development of the flow-volume loop and how it changes with obstruction such as asthma.

Control of respiration has its own chapter (Chapter 6), which is divided into concepts. Receptors are discussed in Chapter 5, arterial chemoreceptors in Chapter 7, regulation of airway caliber in Chapter 4, and regulation of acid-base balance in Chapter 15.

Chapter 10 is a classical discussion of gas exchange, from Fowler's dead space to West and Wagner's ventilation-perfusion model. It overlaps, by necessity, with the chapters on pulmonary circulation (Chapter 11) and the correlation between the pulmonary circulation and gas exchange (Chapter 14), although that topic also appears in the discussion of the mechanics of respiration (Chapter 9). Regulation of acid-base balance has its own chapter (Chapter 15), which is clear and effective. Though that too by necessity must overlap with the gas-exchange information, the treatment of the various acid-base disorders is clear and concise and should be helpful with anyone needing a straightforward explanation of that material.

Topics about fluid in the lungs are often overlooked; in this book they are discussed as lung water and the role of the bronchial circulation (Chapter 12) and as airway wall liquid (Chapter 13).

Some special topics, such as exercise, high altitude, and lung immunology, are covered in separate chapters, as is usually the case. The emphasis in the exercise chapter is on the effect of diseases, which is good for someone familiar with basic exercise physiology. The chapter on high-altitude

physiology is broad; it covers more than the pulmonary aspects and contrasts acute and chronic mountain sickness and adaptations. The immunology chapter revisits some of the topics covered in the first few chapters on the anatomy and ultrastructure.

Three chapters are devoted to disease processes. The one on acute lung injury (Chapter 19) briefly (in just 14 pages) discusses pathology, clinical presentation, and therapy, although the bibliography is extensive. Asthma and emphysema are the only diseases that have their own chapters. The one on asthma discusses from genetics to therapy, based on the accumulated knowledge of the inflammatory process. For emphysema the discussion ranges from epidemiology to animal models, and ends with a model of how the lung may respond to disease. Other disease processes are not discussed specifically, although they are mentioned in other chapters; for example, the chapter on exercise discusses the response in restrictive lung disease, and the last chapter discusses some restrictive diseases such as asbestosis and silicosis.

The last chapter, "Inhaled Noninfectious Toxicants and Their Effects on the Lung," covers the physics and physiology of particle deposition and briefly discusses various occupational lung diseases.

The strength of the book lies in its novel organization; however, that organization could be confusing to a novice. It would be a great resource for a student researching a topic, because of the extensive bibliographies in most (but not all) of the chapters.

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Mechanical Ventilation and Weaning. Jordi Mancebo MD, Alvar Net MD, and Laurent Brochard MD, editors (Update in Intensive Care Medicine, Jean-Louis Vincent MD PhD, series editor). Berlin: Springer-Verlag. 2003. Soft cover, illustrated, 378 pages, $49.95.

Many concepts in mechanical ventilation have evolved a great deal in the last 10 years. One of the most controversial subjects is weaning from and discontinuation of mechanical ventilation, about which our knowledge is nebulous at best, with several articles showing conflicting results. Weaning is considered more an art than a science, with most clinicians determining for themselves what works best.

Most of the book's contributors are very well known in the field of mechanical ventilation. Since many of the studies on mechanical ventilation and weaning have come from across the Atlantic, it is only appropriate that 24 of the book's 38 contributors are from Europe.

The book's contents are divided into: general aspects of mechanical ventilation; pathophysiology of weaning (including conditions leading to weaning failure); and recommendations on how to wean patients. The section addressing general aspects of mechanical ventilation includes a description of assisted modes of mechanical ventilation, and both established ventilation modes (controlled modes) and novel approaches such as proportional assist ventilation, tracheal gas insufflation, and closed-loop systems.

The section on pathophysiology of weaning failure discusses the imbalance between capacity and load, enumerating various conditions that affect capacity and load. The reasons for weaning failure encompass critical illness polyneuropathy and myopathy, and there is a section on cardiac failure unmasked by the weaning process. Also discussed are the role of tracheostomy in facilitating weaning and reducing the work of breathing imposed by the endotracheal tube.

The data on weaning, relevant to the clinical setting, are presented in a very cogent manner. Balancing the risks of premature extubation with the risks of prolonged intubation, and the respiratory indices of weaning, with their interpretative criteria and limitations, are put in context. A separate chapter deals with the causes and interpretation of rapid, shallow breathing.

The book's discussion of the importance of recognizing patient-ventilator asynchrony in various clinical states and strategies to alleviate patient-ventilator asynchrony form the basis for the discussion of initiating weaning. As much as 40% of the time on mechanical ventilation is spent on weaning. The chapter discussing the aggressive and conservative approach on when to start weaning and how to proceed with weaning is, therefore, pertinent. There is considerable controversy about the best technique for ventilator weaning, and this is put in perspective by comparing pertinent prospective, randomized, controlled trials. Appropriate clinical algorithms to facilitate discontinuation of mechanical ventilation and extubation are discussed in depth. The contribution of nonphysician health care professionals in implementing weaning algorithms is stressed. A description of noninvasive positive-pressure ventilation and its rather controversial role in facilitating weaning and extubation is elaborated. This is followed by discussion of the expanded role of noninvasive ventilation on breathing pattern, gas exchange, work of breathing, and nosocomial pneumonia.

The book is designed to be an exhaustive review of the science of weaning. Whenever possible, it uses physiologic principles to elucidate mechanisms and clarify concepts. The chapters are very pertinent and are designed to be useful in clinical practice. The presentation of data is meticulous and uses evidence-based principles. Most of the chapters are less than 20 pages, which makes it easy to assimilate the topic. Most of the graphs and tables are self-explanatory and easy to comprehend.

The discussion is relevant to and complements the American College of Chest Physicians' evidence-based guidelines for weaning and discontinuing ventilatory support.[1] Controversial topics are objectively discussed, with the contributors' opinions frequently expressed.

The book is designed for pulmonologists, intensivists, and respiratory therapists who have a good fund of knowledge in pulmonary physiology. Some of the chapters rely on principles of physiology to discuss the topic and thus make for difficult reading. There are a few grammatical and editing errors, and unconventional wordings such as "exacerbated chronic respiratory failure," and "as much as 40% of the time under mechanical ventilation was related to weaning," and "making weaning as 'delicate' as possible." However, in general the chapters are written well.

I enjoyed reading the book and found it useful in my clinical practice.

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