

Principles and Practice of Sleep Medicine, 4th edition. Meir H Kryger MD, Thomas Roth PhD, and William C Dement MD PhD. Philadelphia: Elsevier Saunders. 2005. Hard cover, illustrated, 1,517 pages, with continually updated online version, \$259.*

When I first received this volume of **Principles and Practice of Sleep Medicine** for review, I used it as a reference on 5 separate occasions within the first week. However, I found it interesting that my use of the book during that week was not for questions related to sleep disorders or somnopharmacology, but on topics that arose during our house staff rounds in the intensive care unit. This illustrates the comprehensiveness and scope of the topics in this edition.

The first edition of **Principles and Practice of Sleep Medicine** was published in 1989, when the disciplines of sleep physiology and sleep medicine were still in their infancy. It was the first systematic reference for the field of sleep medicine, and it was about half the length of the 4th edition. At that time we had a very limited understanding of circadian biology and the basic mechanisms and neurophysiology of sleep, and therapeutic interventions such as continuous positive airway pressure were relatively novel. Knowledge of the control of the sleep-wake cycle and related sleep pathophysiology has increased greatly, and sleep medicine has emerged as a distinct field of study. The 3rd edition of **Principles and Practice of Sleep Medicine** was published in 2000, and it emphasized the interdisciplinary nature of the field of sleep medicine. Since then the field has continued to advance rapidly, and National Institutes of Health funding for sleep-related research has increased annually. The 4th edition, published 5 years after the 3rd, includes a comprehensive summary of recent advances.

* The Journal published a previous review of the hard-copy version of this edition (DePaso WJ. *Respir Care* 2006;51[12]:1475). The heading of the previous review was in part incorrect: the online version was not yet available (and thus was not covered); the hard-copy version alone was \$179.

The 4th edition is divided into 2 parts: "Principles of Sleep Medicine," which consists of 6 sections that address the basic science of sleep, and "Practice of Sleep Medicine," which is dedicated to the clinical aspects of sleep medicine. The initial 47 chapters address normal sleep and its variations, including acute and chronic sleep deprivation. There are also some unique chapters on the phylogeny of sleep regulation in mammalian and nonmammalian sleep. The chapters on the neurophysiology of sleep and waking states are extensively illustrated with electroencephalograms and anatomic schematics. The section on the physiology of sleep covers the cardiovascular, respiratory, gastrointestinal, immunologic, endocrine, and thermoregulatory systems in sleep-wake cycles. These sections endeavor to correlate the physiologic features with clinical applications, and each chapter includes highlighted clinical pearls.

The section on chronobiology covers new information about circadian rhythms and the anatomy and physiology of the circadian clock. The functional neuroanatomy and neurochemistry of the clock, which is located in the suprachiasmatic nucleus of the hypothalamus, has been an active subject of research. The clinical importance of this minuscule structure was recently realized, and knowledge about the effect of light on the circadian pacemaker is now being used for therapeutic purposes. More recently, the molecular model of the circadian pacemaker and its periodicity due to oscillating protein synthesis was clarified. This process, initially described in *Drosophila* species, has now also been elucidated in the mammalian suprachiasmatic nucleus. The steps in that discovery are well-described and summarized in an overview of the 10-step process to build a circadian pacemaker.

Circadian biology is now being applied to human performance, alertness, and behavior. The circadian variation of temperature and endocrine function has several clinical applications, and these principles are now being applied to shift work, time-zone variations for airline workers, and artificial 24-hour cycles in space shuttle missions. These principles have shed light on the decline in performance caused by sleep deprivation and the importance of work-hour reg-

ulation, such as in medical residency training.

Somnopharmacology is covered in 5 chapters on mechanisms of action, wake and sleep-promoting medications, and drugs that disrupt both sleep and wakefulness. It is vitally important that sleep clinicians understand somnopharmacology and, soon, chronopharmacology, in which medication administration based on circadian principles will be the standard of care.

The final portion in the basic-science section of this text addresses the neurobiology, circadian aspects, and psychological aspects of dreaming. The last chapter in this section, "Why We Dream," reviews newer models that postulate the purpose of dream sleep and its function in the processing and consolidation of memory.

The clinical part of this book consists of 11 sections and 78 chapters that review the most current diagnostic and therapeutic measures in sleep medicine. The initial approach to the patient with disordered sleep and the cardinal symptoms of sleep disorders are discussed, followed by a review of clinical tools and tests in sleep medicine. This chapter includes 2 useful tables: one lists the most current topical practice parameters and reviews; the other addresses the value of historical or questionnaire-derived, referenced diagnostic information for obstructive sleep apnea.

A section on circadian rhythm disorders includes sleep disruption from jet lag and shift work, and there is a chapter dedicated to managing work schedules with circadian principles. Insomnia is a condition that physicians and other health-care workers encounter daily, and this book's section on insomnia is comprehensive and reviews the behavioral and psychological treatments of primary and secondary insomnia. The chapter on pharmacologic treatment of primary insomnia includes the newer chemical classes of benzodiazepine receptor agonists.

The section on neurologic disorders includes 2 chapters on narcolepsy. Recent advances in the genetics, diagnosis, and treatment of this disorder are reviewed in detail, and there is a discussion on hypocretin-1 measurement in cerebrospinal fluid as a diagnostic adjunct in patients with cataplexy. There are chapters on idiopathic hypersom-

nia, and on sleep disorders in Parkinson disease, Alzheimer disease, stroke, epilepsy, movement disorders, and neuromuscular disorders. This section contains 2 particularly helpful tables: one contains pharmacologic recommendations and dosing schedules for sleep disorders in various neurologic conditions and dementias; the other lists the clinical features in epileptic phenomena and potential overlap with normal sleep phenomena and nonepileptic sleep disorders.

A section on parasomnias includes chapters on parasomnias unique to rapid-eye-movement sleep versus non-rapid-eye-movement sleep, bruxism, nightmares, and disturbed dreaming in some medical conditions, and a chapter on violent parasomnias, which have become important in forensic and medico-legal situations.

The section on sleep-related breathing disorders is extensive and includes a surprisingly detailed overview of the major classes of pulmonary disease. I have used this section repeatedly as a resource for topics not necessarily related to sleep medicine. The chapter on central sleep apnea has an outstanding review of the physiology of respiratory control, which I have found to be a useful reference for issues that arise in the intensive care unit. Another chapter that contains material essential for intensive care management is on the anatomy and physiology of upper-airway obstruction, which is extensively illustrated. The chapter on the management of chronic respiratory failure with noninvasive ventilation is also comprehensive and useful. The chapters on the clinical evaluation of and the medical and surgical treatments for obstructive sleep apnea are updated, and a chapter on oral appliances for management of sleep-disordered breathing (which is now associated with a designated Practice Parameters publication) is also included.

The section on cardiovascular disorders and sleep has also been a frequently-used resource, as it contains the most recent information on sleep-related cardiac risk and cardiac arrhythmogenesis during sleep, and comprehensive information on coronary artery disease and systemic and pulmonary hypertension in obstructive sleep apnea. The chapter on heart failure contains useful tables of data compiled from prior studies, and includes information on the prevalence of sleep-related breathing disorders in patients with systolic heart failure, as well as survival data in patients with heart failure.

There are 8 chapters on other medical disorders, such as sleep and fatigue in patients with cancer, chronic fatigue syndromes, chronic pain, gastrointestinal disorders, and women's issues such as sleep disturbances in pregnancy and menopause. The last clinical section of this text is an inclusive series of chapters on sleep and psychiatric disease. This section also includes a chapter on medication and substance abuse and their effects on sleep architecture, as well as their contribution to some underdiagnosed sleep conditions.

The last section in this book consists of a comprehensive series of reference chapters on methodology, including evaluation and monitoring techniques for different diagnostic requirements. There is also an excellent chapter on current information and recommendations on light therapy (also associated with a Practice Parameters publication). Although this chapter would have also been well placed in the section on chronobiology, it is an organized reference on the modes of light delivery and recommendations for light treatment of specific disorders. The last chapter in this series reviews the current knowledge in chronobiologic monitoring techniques, which are currently indirect and rudimentary. However, this field will probably continue to make rapid advances; the molecular basis of the circadian clock is now being clarified, and it is possible that direct measurement of gene transcription or translation products that are temporally related to the circadian pacemaker will be feasible in the near future. The sections on circadian biology that are now very current in this text, I predict, will have fascinating updates when the 5th edition is released.

As an extra bonus, this textbook has an associated Web site that can be accessed with a code provided with each book. There are several items of interest in this site, which is extensive and can be considered a stand-alone resource. The text chapters are available in a "printer-friendly" format, and have a "scrapbook" feature that allows the reader to take notes and enter these in the computer while reading the chapters. Additional features of the Web site include: a section of classic articles from the literature, dating back more than a century; an image library that can easily be downloaded for slide presentations (in ZIP or PowerPoint formats), with a "lightbox" feature; a comprehensive drug database; the complete list of Standards of Practice articles in sleep medicine from the American Society of Sleep Med-

icine and National Guideline Clearinghouse; and patient educational brochures for use in clinic. There are case studies with self-assessment questions and short-answer essays, which are invaluable for boards review. Links to the POCKETConsult Web site are available through the **Principles and Practice of Sleep Medicine** Web site, which allow updates in pharmacology and sleep medicine topics to be downloaded to a handheld computer. Clinical updates on various topics are posted, on the average, every week. Other features at the Web site include interviews with William Dement and Nathaniel Kleitman, and a link to Meir Kryger, one of the authors, who encourages readers to contact him with requests for topic updates and any other recommendations or comments.

In summary, this text is wide-ranging in its coverage of all sleep medicine issues, but it goes beyond this discipline, in that it provides a thorough overview and a detailed mechanistic description of the normal and abnormal physiology in many other conditions in internal medicine, pulmonary disease, critical care medicine, neurology, and psychiatry. The editors have done a commendable job with this series of complex topics and their organization in this comprehensive text.

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Sleep: A Comprehensive Handbook. Teofilo L Lee-Chiong MD, editor. Hoboken, New Jersey: John Wiley & Sons. 2006. Hard cover, illustrated, 1,096 pages, \$175.

This volume is, in general, well written and informative. The editor accurately defines the difficulty in producing a textbook that satisfies both the specialist who wishes to know "more and more of less and less" to general practitioners who find themselves limited by knowing "less and less of more and more." The editor concludes the preface with, "This textbook is not meant to be the culmination of our knowledge of the

science of sleep. Rather, consider it but a pause as we reflect on our place in the rapidly altering landscape of sleep medicine." I believe this work accomplishes this goal quite well, although I believe the generalist will derive more benefit from this handbook than will the sleep specialist.

The book is easy to read and the style from chapter to chapter is remarkably consistent, which is a very difficult feat, considering that 215 authors contributed to this book's 1,058 pages (not counting the index). Many might think that over 1,000 pages makes this more than a "handbook," which I guess is why the title calls it a "comprehensive handbook."

The generalist and the specialist will find this book invaluable because of the comprehensive scope of the subjects covered, although the book is clearly aimed more at the non-sleep health-care professional. Topics are covered quickly, accurately, evenly (for the most part), and the sections tell a good story. I believe the generalist will find that this book provides a very good summary of the important subjects in sleep medicine; I suspect that the sleep specialist will not find sufficient depth of coverage.

The book is divided into 17 parts, each of which covers several topics. The book is logically structured and easy to use. Part 1 covers the science of sleep medicine; I found this to be a very nice 83-page summary that is not detailed enough for the specialist but is extraordinarily well done for the generalist. Rather than presenting a detailed scientific treatise on the science of sleep, these chapters paint a picture of what is and isn't known about sleep. Each chapter has a suggested reading list for those who wish more detail. These chapters will not sufficiently prepare one for the board examinations, but they do provide an accurate "gestalt" of the science of sleep.

I found the section on insomnia weaker than the other sections of the book. For example, Table 17.1 lists currently available benzodiazepines used in insomnia therapy. The table lists adult dosages, duration of action, primary metabolism, drug interactions, not recommended, and comments. Table 17.2 lists nonbenzodiazepines used to treat insomnia. It omits the category of "duration of action," which is a very serious omission and, I suspect, an oversight. This chapter suggests that long-term benzodiazepine use is associated with important withdrawal symptoms and that in "cases of severe withdrawal, significant morbidity or

death can ensue." That statement needs to be referenced, especially in view of the double-blind placebo-controlled study of abrupt versus tapered benzodiazepine withdrawal, which suggested that withdrawal symptoms are very minimal.¹ I thought the section on nonpharmacologic therapy of insomnia was a bit superficial.

On the other hand the section on sleep disordered breathing syndromes was very well written; it is the strongest section in the book and should be required reading for all health-care providers. And I particularly liked Part 16, "Sleep in Special Patient Groups."

I found this text useful, well written, accurate, and likely to be very helpful to health-care practitioners. It will not replace *Principles and Practice of Sleep Medicine*, which remains the authoritative text on sleep medicine, but this volume belongs next to it. I highly recommend **Sleep: A Comprehensive Handbook** to everyone in health care.

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Clinician's Guide to Sleep Disorders.

Nathaniel F Watson MD and Bradley V Vaughn MD, editors. *Neurological Disease and Therapy* series, volume 77. New York: Informa/Taylor & Francis. 2006. Hard cover, illustrated, 393 pages, \$199.95.

As the awareness of sleep disorders by the lay and professional public continues to increase, demand for services will probably fall largely on the shoulders of primary care providers. Though numerous texts exist that address the growth of knowledge in sleep medicine, relatively few are available to rapidly and concisely assist practitioners in the

clinical setting. **Clinician's Guide to Sleep Disorders** ably fills that void as a comprehensive yet succinct text geared to non-sleep physicians but of potential use also to sleep specialists, and ultimately applicable to all ancillary health-care providers.

At less than 400 pages, this portable book is organized in a symptom-based fashion. Although it requires no prior knowledge of sleep medicine, it serves to reinforce the International Classification of Sleep Disorders (ICSD) nosologic system with a graphic depiction that correlates to symptoms and official diagnostic terms at the beginning of each chapter. The discussions of disease pathophysiology are purposefully limited.

The book is multi-authored, and all chapters are of good or excellent quality. The first 2 sections discuss a general approach to the evaluation and diagnostic testing of patients with sleep complaints, which provides a foundation for the remainder of the book, which addresses assessment and management in specific practical clinical scenarios.

The diagnosis chapter takes up a good portion of the book and is overly detailed in places. For example, it devotes considerable space to the evolution of sleep monitoring, which I think might have been more appropriate in a different text. The focus strays in other instances as well, as when a section that adeptly describes the scoring of periodic limb movements veers into a discussion of the controversies surrounding their clinical importance (addressed later in an excellent chapter on restless legs syndrome). These are relatively minor quibbles, however, as the task of providing such a background is a daunting one within the confines of this compact publication, and the chapter valiantly succeeds in accomplishing some useful things, such as providing a convenient table that classifies the levels of sleep studies based on the sophistication of physiologic monitoring.

This chapter's section on pediatric sleep-disordered breathing is an additional treasured resource, because the topic is important, often culled from disparate sources, and frequently neglected in general sleep medicine texts. Lacking, however, is a suggested classification system for clinical use, based on the available data regarding carbon dioxide monitoring, oxyhemoglobin saturation, arousal indices, and apnea-hypopnea indices (such classification schemes are available in some other texts). The placement of this topic under the heading of

diagnostic procedures is also questionable, as a reader searching for information on this subject in a later chapter dedicated solely to sleep-disordered breathing will find only cursory mention.

Moving on to the clinical chapters, the insomnia section is particularly helpful in its description of the Spielman model for the development of chronic symptoms, but there are noteworthy omissions. Pharmacotherapeutic options are given relatively short shrift and relegated to a table without detailed instructions. Though the excellent coverage of behavioral therapies is laudable, medication options are at least equally important, particularly in a busy primary care setting. Finally, rather curiously, the complaint of nonrestorative sleep is not included in the chapter's initial description of insomnia, which, although controversial, is nonetheless consistent with the ICSD definition.

The portions of the book devoted to disorders of excessive sleepiness and circadian rhythms are particularly readable and well-written. Allen predictably contributes an excellent chapter regarding restless legs syndrome and periodic limb movements of sleep, but the omission of antidepressants in association with both conditions (however controversial) is conspicuous, as this clinical scenario is familiar to primary-care providers.

The chapter on parasomnias is also outstanding; it creates particular clarity in the section that differentiates nocturnal seizures, which can be confusing to non-epileptologists. More rigorous referencing would have been appreciated, however, as alternative therapies for rapid-eye-movement sleep behavior disorder are not cited, which forfeits an opportunity to help readers find more in-depth material.

The section on special topics in sleep addresses many major concerns in the clinical realm, including sleep disturbances in the elderly and demented. These 2 major topics are addressed in some detail, whereas other topics, such as nocturnal panic attacks, are addressed briefly, though these brief discussions serve as useful springboards to peruse other references.

The appendix is an excellent repository of various commonly used sleep assessment scales.

Editing errors occasionally detract from the overall high quality of this book. Immediately evident was the reversal of a mathematical symbol that describes the relationship between restless legs syndrome and iron

status, which might confuse or mislead some readers. Similarly, the airflow tracings are obscured in a figure that depicts apneas and hypopneas, which is likely to confuse those not accustomed to viewing such events on polysomnograms.

Despite these drawbacks, this text is a valuable addition to the library of physicians, sleep technologists, nurses, and other allied health personnel in clinical sleep medicine. Consistent with the editors' stated aims, the book is generally economical with words, replete with tables and figures, and more accessible than many of the sleep texts currently available.

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Handbook of Sleep Medicine. Alon Y Avidan MD MPH and Phyllis C Zee MD PhD. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins. 2006. Soft cover, illustrated, 244 pages, \$44.95.

The growing demand for qualified and competent clinicians in the sleep laboratory has increased the necessity for educational resources that meet professional development requirements. The **Handbook of Sleep Medicine** answers this growing demand by providing a concise handbook that covers the diagnosis, evaluation, and management of the most common sleep disorders. With the contributions of 11 distinguished sleep medicine specialists, this pocket-sized handbook, consisting of 244 pages, discusses a wide range of neurologic, pulmonary, psychiatric, and pediatric sleep disorders.

The book has 7 chapters and 12 appendices. Chapter 1, "Populations at Risk for Sleep Disturbances," provides an overview of those in the general population who are at risk for sleep disorders, as well as comorbid medical, neurologic, and psychiatric disorders associated with sleep. This chapter is particularly relevant because of the increasing importance placed on comorbid conditions associated with sleep disorders. Though this chapter does not explore the epidemiologic impact of these comorbidities in great detail, it does highlight the relevant and current clinical evidence regard-

ing sleep disorders that both sleep specialists and non-sleep-specialists should be aware of when providing care.

Chapter 2, "Sleep-Disordered Breathing," is particularly relevant to respiratory therapists and pulmonologists. Disorders covered here include primary snoring, upper airway resistance syndrome, obstructive sleep apnea-hypopnea syndrome, central sleep apnea, asthma, and chronic obstructive pulmonary disease. Subsections include clinical presentation, classification, epidemiology, diagnosis, history, physical examination, and differential diagnosis. This is the general layout for this and subsequent chapters, each of which takes a symptoms-based approach to managing sleep disorders. Appreciatively, the authors make frequent references to the Wisconsin Sleep Cohort Study, which is a contemporary data set considered by many in the sleep community to be a landmark study in sleep medicine. Notably absent from this chapter, however, is discussion about sleep-related hypoventilation disorders, such as obesity hypoventilation syndrome. The chapter also falls short in its explanation of the pros and cons of various modes of positive airway pressure therapy for the conditions mentioned in the chapter.

Chapter 3, "Insomnia," provides a concise primer on the diagnosis and management of insomnia. Conveniently outlined in table format (similar to the Oakes publications, such as *Oakes' Clinical Practitioners Pocket Guide to Respiratory Care*, familiar to many respiratory therapists) are the various insomnia drugs, their dose ranges, dose in the elderly, half-life, effects on sleep, and adverse effects. An enhancement to this table would have been to include the common trade names of each of the drugs (only the generic names are provided). Though the clinical approach described in this chapter is consistent with established national clinical practice parameters, it could have benefited from a more detailed description of cognitive behavioral therapy and its role in the management of insomnia.

Chapter 4, "Hypersomnia and Narcolepsy," is current, clinically relevant, and follows the same readable format as the previous chapters. It provides a clear description of the clinical approach to the sleepy patient. In this chapter the table that lists the medications for sleepiness and cataplexy does provide both the generic and trade names.

Chapter 5, "Motor Disorders of Sleep and Parasomnias," addresses the parasomnias (eg, sleepwalking and rapid-eye-movement sleep behavior disorder), sleep-related movement disorders (eg, restless legs syndrome and periodic limb movement disorder), and other sleep disorders associated with movement. The chapter clearly and accurately explains the differential diagnosis between confusional arousals, sleepwalking, nightmares, and rapid-eye-movement sleep behavior disorder, which is a subject often confusing to both clinician and technologist. This achievement is repeated again later in the chapter, in a table that depicts the differential diagnosis of restless legs syndrome, periodic limb movement disorder, and related movement disorders. Following this is a quick reference pharmacotherapy guide for restless legs syndrome.

Chapter 6 covers circadian rhythm sleep disorders, an often misunderstood class of sleep disorders, particularly by those who interact primarily with patients who have sleep-disordered breathing. The topics covered include circadian biology, delayed sleep phase type, advanced sleep phase type, free-running type, irregular sleep/wake type, shift-work sleep disorder, and jet lag. These topics serve as a primer to understand and interpret the pathophysiology involving the sleep-wake cycle. The chapter also includes a table that summarizes the main complaints, preferred sleep/wake time, and treatment regimen.

The last chapter, "Sleep Disorders in Children," begins with an overview of the developmental differences in sleep patterns between infants, toddlers, preschoolers, school-aged children, and adolescents. Sleep disorders commonly encountered among children are then discussed, including limit-setting sleep type, sleep-onset association type, obstructive sleep apnea, partial arousal parasomnias, rhythmic movement disorders, sleep enuresis, and sudden infant death syndrome. Though the chapter covers the essentials of each of the common sleep disorders in infants and children, and uses relevant resources, it falls short in its coverage of the technical aspects of managing these patients. For example, it provides a superficial explanation at best of staging and scoring guidelines for pediatric sleep studies.

Though this text appears to be primarily geared toward the sleep physician or primary care provider, many sections offer essential information for the therapist, tech-

nologist, and student. For instance, much of the text and (particularly) the appendices are useful references when evaluating the patient's paperwork or when verifying information reported from the sleep history and physical. Appendix C provides a quick reference to the Multiple Sleep Latency Testing guidelines. Appendix D provides the therapist and technologist with a quick reference to common issues with patient adherence to continuous positive airway pressure, and suggested corrective measures. Appendix E provides a primer on sleep hygiene, which is a useful tool for patient education. Appendix K provides the scoring technologist with a summary of the Rechtschaffen and Kales (1968) scoring criteria, which is a practical resource when staging sleep studies. However, its relevance may be short-lived, as the American Academy of Sleep Medicine is about to publish *The AASM Manual for the Scoring of Sleep and Associated Events: Rules, Terminology, and Technical Specification*. Appendix B is a body mass index table that also appears on the back cover and is thus redundant.

This book answers the need for a succinctly written sleep disorders text that conveniently fits in a lab coat pocket. It provides a broad introduction to sleep disturbances and associated comorbidities, and discusses the major sleep disorders' epidemiology, diagnostic criteria, differential diagnosis, assessment tools, management, and follow-up.

Overall, there appears to have been considerable thought to making the text user-friendly. There are complete and current reference lists at the end of each chapter, organized in order of citation. The index is both comprehensive and accurate. This text is timely in that it integrates the most recent version of the ICSD with a symptoms-based approach to diagnosing and managing sleep disorders. The material is organized and clinically relevant, focused, and designed for easy accessibility. The tables and figures, though organized, lose some readability due to scaling to fit the relatively small page size. Though some may argue that the material is too broad or lacking in detail in its explanations, it appears to achieve its goal to provide the reader with a valuable and indispensable reference guide. A major strength is the degree to which the clinical approach format is described in the context of current research and evidence-based medicine. This text may very well become a

common fixture in the sleep laboratory or in the pockets of sleep clinicians.

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Sleep Apnea: Current Diagnosis and Treatment. Winfried J Randerath, Bernd M Sanner, and Virend K Somers, editors. *Progress in Respiratory Research* series, volume 35. Chris T Bolliger, series editor. Basel: S Karger. 2006. Hard cover, illustrated, 243 pages, \$171.

Sleep medicine is a young and rapidly developing specialty. As an emerging specialty with an expanding knowledge base, there is a need for more educational materials. The potential audience for such material is diverse; it includes students, primary care providers, sleep specialists, sleep researchers, respiratory therapists, and sleep technologists. There have been a number of new texts published in the last several years to meet this demand.

Sleep-related breathing disorders, particularly obstructive sleep apnea (OSA), are the most common disorders seen by sleep specialists, and because of their high prevalence in the general population, they are also important to other health care providers. This book, which is volume 35 in the *Progress in Respiratory Research* series, covers the diagnosis and treatment of sleep apnea. The volume editors aim to "summarize the state-of-the-art knowledge on sleep-disordered breathing" for a target audience of clinicians and researchers involved in this field. This text largely achieves that goal.

This book is most appropriate for sleep specialists and physicians training to become sleep specialists. The depth of information may not be sufficient for sleep researchers. Certain chapters would be of value to respiratory therapists, sleep technologists, and primary care providers, to deepen their knowledge of sleep apnea.

This book is good as a quick reference on specific sleep apnea topics and as a relatively comprehensive and up-to-date overview of the field. It provides a current re-

view in an unbulky, easy-to-read format, with relatively short chapters. Each chapter begins with a chapter abstract. The figures and tables are useful. The references cited are pertinent, though the most recent are from 2005. The index is helpful for finding specific information quickly. As with any book that seeks to be up to date, its value will diminish as its information becomes dated.

The editors assembled 47 expert contributors from throughout the world. The inclusion of experts from outside the United States, who as a group are often under-represented in texts, is welcome. They bring a fresh perspective for those who have read other commonly used texts on these topics. The book has 28 chapters, which cover the diagnosis, pathophysiology, and treatment of sleep apnea. Though the majority of the focus is on OSA in adults, there are chapters devoted to central sleep apnea and hypoventilation syndromes, and to sleep-related breathing disorders in children.

The first chapter provides an overview of the clinical approach to sleep disorders in general. This is followed by 3 chapters that provide summaries of the physiology of sleep, breathing during sleep, and cardiovascular, endocrine, and renal systems during sleep. These chapters are brief and provide useful review for the clinician or student, though they may not be sufficiently detailed for some specialists and researchers.

Chapters 5 and 6 cover the use of questionnaires to assess sleepiness and quality of life, and they do a good job of discussing

the importance and limitations of these tests. Chapters 7 through 9 provide clearly written coverage of the monitoring of physiologic functions during sleep. Chapters 10 through 12 are very readable reviews of the basic science of the upper airway syndrome and obstructive sleep apnea.

Chapters 13 through 15 deal with the pathophysiology of OSA, including oxidative stress, genetics, and upper airway muscles. The chapters are concise, comprehensive, readable, and at a level that will be helpful to students and specialists. Chapter 16 provides a well-organized and easy-to-read overview of the presentation, diagnosis, and treatment of OSA, and includes a useful discussion of factors that make continuous positive airway pressure difficult to use. It is followed by clinically helpful chapters on automatic positive airway titration and humidification. Chapters 19 through 23 cover alternative OSA therapies, both accepted (oral appliances, surgery, and conservative measures) and proposed (electrical stimulation of the upper airways muscles and cardiac pacemaker therapy).

Chapter 24 provides a good overview of central sleep apnea, though it does not adequately explain the loop gain model, which is an important but somewhat difficult concept. This chapter also covers sleep-related hypoventilation, which deserved a chapter of its own. The coverage of hypoventilation is not comprehensive or detailed enough to address the needs of sleep specialists. Chapter 25 covers the cardiovascular consequences of sleep apnea well and also relates well to previous chapters. The final chap-

ters (26 through 28) deal with special populations, including children, the elderly, and pregnant women.

The chapter materials are well selected and they cover the main issues of interest to sleep specialists and students. Generally, the most important references for each topic are cited, including recent literature. The style is clear, concise, and readable. For some topics the reader may need to access a more comprehensive textbook for details.

In conclusion, **Sleep Apnea: Current Diagnosis and Treatment** is a useful resource for sleep specialists and those seeking to become specialists. Despite the large number of new sleep medicine texts available, this text serves an important niche. It is a nice bookshelf companion to a more comprehensive (and bulky) definitive text such as *Principles and Practice of Sleep Medicine*. It provides well written, comprehensive, up-to-date, evidence-based reviews of important topics by experts on sleep apnea.

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