

**Primary Care Sleep Medicine: A Practical Guide.** James F Pagel MSc MD and SR Pandi-Perumal MSc, editors. *Current Clinical Practice* series, Neil S Skolnik MD, series editor. Totowa, New Jersey: Humana Press. 2007. Hardcover, illustrated, 334 pages, \$99.50.

During the last 10 years there has been a proliferation of sleep laboratories. In communities that a few years ago had not a single sleep laboratory, now there are at least one, if not two or three. Obviously, patients are being referred to these facilities, presumably because physicians are diagnosing sleep disorders to a greater degree than in the past. Even though sleep problems are being identified, or at least suspected, at a rate that would have been unimaginable 20 years ago, many patients with sleep disorders remain undiagnosed. If the diagnosis of sleep pathologies is to continue to improve, physician education is necessary, especially among primary care physicians. Review articles intended for an audience of primary care physicians are useful, but the scope and breadth of these articles are limited. Textbooks of sleep medicine are available, of course, but most of these texts are geared toward specialist physicians. A textbook of sleep medicine that is tailored to the needs of generalist physicians is overdue. **Primary Care Sleep Medicine: A Practical Guide**, aims to provide "a high-quality, up-to-date background that will support the primary care physician in appropriately utilizing sleep diagnostic testing" as part of clinical practice.

At 334 pages, the book is comparable to that last bowl of porridge that Goldilocks ate; it is neither too thick nor too thin. Most of the contributors are affiliated with institutions in the United States, although one of the contributors lives in South Africa, which gives the book an international flavor. There is no apparent regional or institutional clique among the contributors, who reside in New York, Pennsylvania, North Carolina, Alabama, Kentucky, Tennessee, Illinois, Minnesota, Wisconsin, Colorado, California, and Arizona.

The topics covered are appropriate for generalist physicians, and include the type of material that one would expect in a book that surveys the field of sleep medicine. The first chapter provides an overview of the book. The 3 chapters on insomnia cover the assessment, cognitive-behavioral treatment, and pharmacologic treatments of this

condition. Given the prevalence of sleep-disordered breathing in ambulatory practice, it is appropriate that one third of the book is devoted to different aspects of sleep apnea. There are individual chapters on central sleep apnea, obstructive sleep apnea (OSA), OSA and cardiovascular disease, surgical and alternative treatments for OSA, continuous-positive-airway-pressure treatment for OSA, oral appliances for the treatment of OSA, and medical-legal aspects of sleep apnea. There are also chapters on the epidemiology of sleep disorders, restless leg syndrome, bruxism, sleep disorders in children, parasomnias, narcolepsy, circadian rhythm disorders, polysomnography, treatment of obesity, sleep in patients with pulmonary disorders, sleep and the esophagus, portable sleep monitoring, and CPT coding and documentation.

The editors have succeeded in creating a book that is practical. The topics are covered in adequate detail. The book does not delve into esoteric pathophysiology or the molecular genetics of sleep diseases. Several chapters are praiseworthy for the clinical information they contain. Though many primary care physicians may assume that they already know what is essential about the pharmacologic treatment of insomnia, the chapter on this topic, written by a pulmonologist, includes some useful pearls of clinical wisdom. On the other hand, most primary care physicians probably realize that they know little about the use of oral appliances for the treatment of OSA. The chapter on this topic will help bring those physicians up to speed. Likewise, the chapter on circadian rhythm disorders nicely summarizes the subject. The chapter on "Determinants and Measurements of Daytime Sleepiness" includes a neat and succinct summary of the approach to the sleepy patient.

The book has some minor flaws. As is common in multi-author textbooks, there is some redundancy in the information presented, and the quality of the writing is uneven. Most chapters describe the epidemiology of the sleep disorder being discussed, thereby repeating information presented in the chapter on epidemiology. In addition, while the content of the book is clearly directed toward generalists, the tone of some of the writing comes across as if sleep specialists are the intended audience.

The Sleep Heart Health study (<http://www.jhucc.com/shhs>) is not cited in the chapter concerning the cardiovascular com-

plications of sleep-disordered breathing. The Sleep Heart Health study was a landmark, and it remains one of the most important studies, if not the most important study, in its field. This oversight would be understandable if data from the Sleep Heart Health study had only recently been published, but data from this study were published in 2001, and other references in the same chapter were published as late as 2005.

The book does miss a few opportunities to educate. The explanation in Chapter 8 regarding the distinction between the apnea-hypopnea index and the respiratory disturbance index is less than clear. Moreover, in the chapter "Obstructive Sleep Apnea: Clinical Presentation," the terms "fatigue," "sleepiness," and "lethargy" are mentioned as symptoms of sleep apnea. It is my experience that patients rarely use these words. Rather, they say that they are "tired." When patients report this symptom, it is appropriate to consider sleep disorders in the differential diagnosis, in addition to anemia, hypothyroidism, and depression. To be fair, the chapter "Determinants and Measurements of Daytime Sleepiness," does mention that "tiredness" is a symptom of a sleep disorder.

Though there is a chapter titled "Central Sleep Apnea," which discusses the relationship between heart failure and central sleep apnea, it is surprising that no section of the book addresses the diagnosis and management of heart failure patients who have OSA. This topic is important for 2 reasons. First, diagnosing and treating these patients is clinically relevant, because continuous positive airway pressure improves left-ventricular systolic function in patients with heart failure and OSA. Secondly, even though half of all heart-failure patients have some type of sleep apnea, cardiologists often do not refer heart-failure patients for a sleep study, so in these patients sleep problems remain under-diagnosed unless their primary care physician takes the initiative.

The typographical errors in **Primary Care Sleep Medicine** are understandable, especially since it is the first edition. However, some of the editing/publishing errors are less comprehensible. As an example, the text of Chapter 9 cites 57 publications, but the reference section lists only 42 articles.

Finally, since the intention of the editors is to inform clinicians who are not sleep specialists, it would have been useful to include a single-page appendix to summarize the normal and abnormal ranges of the fol-

lowing terms: sleep architecture and the proportion of time spent in the different stages of sleep, sleep latency, Epworth Sleepiness Scale, Multiple Sleep Latency Test, Maintenance of Wakefulness Test, and periodic limb movements in sleep. A section organized in that manner would serve as a reference for primary care physicians interpreting polysomnogram reports. In addition, even though there is a lack of consensus among sleep specialists as to what apnea-hypopnea index parameters define mild, moderate, and severe OSA, it is nonetheless necessary that generalist physicians have some guidelines to clarify what it means when the respiratory disturbance index is, say, 4, 17, 32, or 55.

All in all, **Primary Care Sleep Medicine** is a useful introductory textbook that will serve as a handy reference for generalist physicians, and it will assist physicians in the recognition, evaluation, and management of patients who have sleep abnormalities.

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**Clinician's Guide to Pediatric Sleep Disorders.** Mark A Richardson and Norman R Friedman, editors. New York: Informa Healthcare. 2007. Hard cover, illustrated, 348 pages, \$169.95,

Sleep problems are extremely common during childhood, from infancy to adolescence. Unfortunately, despite the prevalence of sleep problems, childhood sleep disorders are often under-recognized and undiagnosed, despite being either preventable or treatable. According to information gathered from the National Sleep Foundation's *Sleep in America* polls, two thirds of young children experience at least one sleep problem at least a few nights per week, and greater than half of all adolescents report feeling sleepy during the day.

Children experience the same broad range of sleep disorders encountered in adults, including sleep apnea, insomnia, parasomnias, delayed sleep phase disorder, narcolepsy, and restless leg syndrome, but the clinical presentation, evaluation, and management may differ. Although snoring and sleep ap-

nea are common indications for referral to a sleep specialist, many children also have behavioral or nonrespiratory sleep disorders, either as a second comorbid diagnosis or as a primary sleep disorder.

The editors state in the preface that the primary aim of a **Clinician's Guide to Pediatric Sleep Disorders** is to "educate primary care practitioners so that they may accurately diagnose and treat pediatric sleep disorders." This is a laudable goal. And in an attempt to do that they have recruited a wide variety of pediatric sleep specialists—pulmonologists, otolaryngologists, neurologists, psychiatrists, anesthesiologists—to share their knowledge. Unfortunately, the overall result is an inconsistent book with overemphasis on obstructive sleep apnea (OSA), illogical arrangement of chapters, and numerous typographical and other editing errors. Having said that, however, there are a few chapters that deserve to be highlighted.

Eleven of the 20 chapters deal with the evaluation, management, and consequences of OSA, because the editors believe that the most common pediatric sleep disorder is OSA. Though that is not necessarily correct (ie, only 1–2% of children have OSA, versus up to one third of children having behavioral insomnia of childhood, and 35% of people reporting onset of restless leg syndrome before age 20 years), several of the chapters are interesting and on subjects that are often not given as much prominence in general pediatric texts. Specifically, Chapter 6 provides information on diagnostic testing for children with OSA, including a comprehensive summary of 2 newer diagnostic techniques, peripheral arterial tonometry and pulse transit time, which are being investigated to determine their usefulness in detecting sleep disruption as it pertains to obstructive breathing. The chapter also addresses the conflicts or points of discrepancy with polysomnography criteria of OSA and the relation to clinical outcomes. Chapters 8 and 9 provide a surgeon's perspective on the available surgical interventions to treat children with OSA. The authors provide a detailed description of the various types of adenotonsillectomy, including electrocautery, coblation, harmonic scalpel, intracapsular tonsillectomy/tonsillotomy, and radiofrequency volume reduction.

Rarely heard from are the anesthesiologists, and Chapter 14 provides insight into the anesthetic considerations that pertain to

children with OSA, both in the perioperative and postoperative periods.

Chapters 12 and 15 are well written and provide up-to-date references on the neurobehavioral and cardiovascular complications of OSA. Chapter 13 takes an evidence-based approach to therapy. The authors identify 3 subjects of interest, including efficacy of adenotonsillectomy for the treatment of OSA, impact of adenotonsillectomy on neurobehavioral outcomes, and impact of adenotonsillectomy on quality of life, and they summarize the results of over 40 studies into 3 large tables, which list the study design, number of subjects, instruments used, outcomes measured, and level of evidence, per the criteria of the Centre for Evidence-Based Medicine in Oxford ([http://www.cebm.net/levels\\_of\\_evidence.asp](http://www.cebm.net/levels_of_evidence.asp)).

Chapter 3 is supposed to cover nonobstructive sleep patterns in children. The chapter covers periodic breathing and central apnea, but does not mention hypoventilation as it relates to obesity, neuromuscular weakness, or scoliosis or other restrictive lung diseases. The use of bi-level ventilation for management of hypoventilation is not discussed. Considerable space is devoted to the presenting symptoms and surgical management of children with Chiari malformations, but does not include how sleep physicians can be involved with the use of noninvasive ventilation and does not include 3 key references from Robert Brouillette and the Montreal group, who looked at this issue within their own clinic population and conducted a multi-site review.

Also included in the book are chapters on infants with apparent life-threatening events or sudden infant death syndrome, as well as children with congenital central hypoventilation syndrome. Though these children are usually managed by pediatric pulmonologists rather than sleep physicians, the authors are well-respected experts, and it is a pleasure to read their comprehensive reviews, with up-to-date references. Chapter 16, on congenital central hypoventilation syndrome, describes in detail the latest information regarding genetic testing, with the polymerase-chain-reaction-based PHOX2B gene testing.

Finally, there are 5 chapters devoted to the nonrespiratory or behavioral sleep disorders, including behavioral insomnia of childhood, adolescent sleepiness, restless leg syndrome and periodic limb movement disorders, and narcolepsy. Chapter 4, on be-