

Sleep in Children: Developmental Changes in Sleep Patterns, 2nd edition.

Carole L Marcus, John L Carroll, David F Donnelly, Gerald M Loughlin, editors. *Lung Biology in Health and Disease* series, volume 223. Claude Lenfant, executive editor. New York: Informa Healthcare. 2008. Hard cover, illustrated, 432 pages, \$199.95.

Sleep and Breathing in Children: Developmental Changes in Breathing During Sleep, 2nd edition.

Carole L Marcus, John L Carroll, David F Donnelly, Gerald M Loughlin, editors. *Lung Biology in Health and Disease* series, volume 224. Claude Lenfant, executive editor. New York: Informa Healthcare. 2008. Hard cover, illustrated, 612 pages, \$199.95.

Sleep medicine, in general, and pediatric sleep medicine, in particular, are relatively new fields. Sleep board accreditation through the American Board of Sleep Medicine (or its predecessor) has been in existence since 1978, with 3,445 sleep specialists being board certified as of 2006, the majority of whom are not pediatricians. Since then, the American Board of Medical Specialists has taken over administering this examination and has begun accrediting sleep fellowship programs. The training of the next generation of sleep specialists will now be more in line with more established subspecialties, such as pulmonology and cardiology. More sleep laboratories are opening, with accreditation becoming the norm. Polysomnogram technologists are also expected to be board certified. Clearly, the field of sleep medicine is on the rise.

There are many textbooks on the subject of sleep medicine, with the accepted standard being Kryger et al's *Principles and Practice of Sleep Medicine*. Few texts are dedicated solely to pediatric sleep disorders. These 2 books, **Sleep and Breathing in Children: Developmental Changes in Sleep Patterns**, 2nd edition, and **Sleep and Breathing in Children: Developmental Changes in Breathing Patterns**, 2nd edition, represent a comprehensive collection of pediatric-focused material covering sleep physiology and clinical sleep disorders. Originally published in 2000 (*Sleep and*

Breathing in Children: A Developmental Approach, volume 147), the editors have

elected to update their material because of the wealth of newly published information in the field of pediatric sleep medicine. For this edition the editors chose to split this extensive amount of material into 2 volumes, the first focusing on the neurologic aspects of sleep, and the second concentrating on the respiratory components of sleep. Given the large amount of information presented, this was a wise move and one that leads to improved organization of the material.

The first several chapters of volume 223 focus on the neurologic development of sleep, from infancy through adolescence. Details covered include electroencephalogram development and its analysis, as well as the development of normal sleep-wake cycles. Arousals and temperature control are also discussed. The second half of this volume focuses on several neurologic-based sleep disorders and discusses various non-respiratory-based parasomnias and dysomnias. A chapter each is devoted to several of the more common neurologic-based sleep problems as well as some medical conditions that can have an impact on children's sleep. These include: narcolepsy (yes, it is seen in children), restless leg syndrome and periodic limb movement disorder (no, they are not the same thing), gastroesophageal reflux, and various neurologic conditions. Psychiatric issues are also addressed. Finally, neurocognitive outcomes and tools to assess them are reviewed, along with a chapter reviewing magnetic resonance imaging technology and its potential use in pediatric sleep medicine.

The first several chapters of volume 224 focus on the development and control of respiration, from the fetus through adolescence, with emphasis on its impact on sleep as well as sleep's impact on control of breathing. Upper-airway structures and their muscular control, along with chemoreceptor physiology, are reviewed. There is a separate chapter on craniofacial development and its impact on sleep, as well as a chapter on breathing and sleep in the premature infant. The latter two thirds of the book then focuses on several specific respiratory-related

sleep disorders, including apparent life-threatening episodes and sudden infant death syndrome; the impact of hypoxia and hypoventilation on sleep; and, finally, several chapters on various aspects of obstructive sleep apnea and its sequelae (such as cardiac, inflammatory, endocrine, and neurocognitive complications). A chapter is dedicated to the study of acoustic reflectance. The book then concludes with an outstanding review of the field of pediatric sleep medicine to put the progress made over the last 50 years into perspective.

Many of the chapters in these 2 volumes represent a comprehensive review of their subjects. Several of these chapters (especially the physiology-focused ones) are outstanding and well written, giving the reader an up-to-date review on their topics. The clinical chapters are also well written and easy to follow. The only chapters that are somewhat weak are those whose subject matter is very broad-based. These authors try to review several specific disease processes and wind up with a more superficial review than I suspect they wanted to provide. Two chapters in particular would include the review of neurologic diseases and review of psychiatric illnesses. As an overview, these chapters are acceptable; however, a more detailed reading on these specific illnesses is clearly warranted (something that the authors themselves suggest to the reader). As for the 3 chapters that discuss research tools (neurocognitive testing, functional magnetic resonance imaging, and acoustic reflectance), they present a detailed amount of information; however, more clinical applications would have proven useful. All of the chapters in these 2 volumes are exceedingly well referenced and provide an excellent starting point for further reading.

If a third edition of these volumes is ever contemplated, I would recommend adding chapters focused solely on attention-deficit disorder/attention-deficit hyperactivity disorder, sleep hygiene, insomnia, home sleep studies and monitors, actigraphy, and medication use in pediatric sleep disorders, as these are underrepresented in the current edition. This recommendation would go along with the more detailed chapters on neurologic and psychiatric issues suggested ear-

lier. Also, the volume on breathing during sleep (volume 224) should be broken up into sections with a particular focus (ie, apparent life-threatening episodes and sudden infant death syndrome, obstructive sleep apnea, new technology), rather than just a straight listing of chapters in the table of contents.

The editors of these 2 volumes are leaders in sleep medicine and pediatric pulmonology. They have drawn on some of the world's leading experts on pediatric sleep medicine. These 71 contributors come from a wide range of fields, including sleep medicine, pulmonology, neurology, psychiatry and psychology, physiology, surgery, and dental medicine. Many of the authors represent a "Who's Who" of pediatric sleep medicine, with their research being on the cutting edge of this field.

These 2 texts provide a well thought out and well written update on the emerging field of pediatric sleep medicine, and I hope future editions in this series are planned for this important subject. These volumes are geared more toward the medically oriented specialist in pediatric sleep medicine. A working knowledge of the field would make for a better understanding of the material presented. Because of the focus of the material covered in these texts, I suspect that the majority of the readers of *RESPIRATORY CARE* would have little use for these 2 books. More basic texts would be better a choice for this journal's audience. Beginners in the field of sleep medicine might also be overwhelmed with the material presented. That being said, these volumes would represent an excellent addition to the library of any pediatric sleep specialist or sleep fellowship program.

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Overcoming Steroid Insensitivity in Respiratory Disease. Ian M Adcock and Kian Fan Chung, editors. Chichester, United Kingdom: John Wiley & Sons. 2008. Hard cover, illustrated, 304 pages, \$150.

Corticosteroids are the most effective available therapy for asthma at present.

Clearly, patients would be poorly served without them. Yet between 5% and 10% of all asthma patients demonstrate an inadequate response to corticosteroids. Even oral corticosteroids may prove inadequate for some. Problems of steroid resistance may also arise in other inflammatory pulmonary diseases. Such problems are further complicated by the substantial adverse effects corticosteroids demonstrate, especially at the higher doses that may be required in the face of resistance. Corticosteroid resistance presents enormous difficulties for clinicians as well as patients. This book, written by world-renowned scientists, provides the background to help clinicians and researchers understand this critically important subject. It is highly welcome, since this is an area that until now has not been well addressed.

Topics range from the glucocorticoid receptor and its molecular mechanisms of action to inhalation as a drug delivery mechanism. The principal target audience for this book is researchers in varied settings studying either biomedical or clinical aspects of corticosteroid activity and use. Clinicians who wish a more in-depth, molecular-level understanding of the therapies they use and the adverse effects they may see will also find the book as a whole of interest. In addition, the chapter on adverse effects, the two on corticosteroid-sparing strategies, and the one on inhalation therapy may be directly useful to physicians in clinical practice, while the ones on adverse effects and inhalation therapy may be similarly helpful for nurses and respiratory therapists. Such readers should be aware, however, that while the writing style is clear and appropriate for its intended audience, it makes few concessions to those who may be less expert in molecular mechanisms. Likewise, the chapters on the role of macrophage migration inhibitory factor in regulating corticosteroid response and on kinases as potential therapeutic targets in asthma offer little information of direct clinical usefulness, yet will be highly appreciated by basic science researchers.

The most innovative and provocative theme of this book is developed in Chapters 3 and 4. This is the concept that, since the glucocorticoid receptor has numerous isoforms, these isoforms may have somewhat different functions, perhaps affecting different tissues. These isoforms may also have somewhat different selectivities for structural variations in the steroid molecule they

bind. Consequently, it may be possible to develop drugs specific for a given tissue or ones that lack the activities associated with adverse effects. Indeed, one corticosteroid based on this concept has now entered clinical trials.

Chapters 5 through 7 then examine the molecular basis for the lack of corticosteroid response seen in some patients. Chapter 5 describes an uncommon genetic condition in which mutations of the glucocorticoid receptor decrease the body's general sensitivity to corticosteroids. Chapter 6, and especially Chapter 7, develop the idea that similar but more subtle changes may underlie variations in patient response, although Chapter 6 also addresses the possibility that poor response may reflect features of the disease as well as of the patient. Although these chapters focus on asthma, they also address other diseases where corticosteroid resistance may occur. A later chapter explores the pharmacokinetics and pharmacodynamics of corticosteroids and how they may affect an individual patient's response. These chapters provide information that will be very helpful to researchers in the field but, with the possible exception of Chapter 6, are unlikely to prove directly useful to clinicians.

All chapters in this book are well organized and easy to follow, and the authors have done an excellent job of researching, synthesizing, and presenting the vast amount of literature available. The references cited are both comprehensive and up to date; notation of important seminal papers is distinctly helpful. Relevant clinical examples are welcome on the occasions when they appear. Although a certain amount of repetition is inevitable in a multi-author text, the editors have done a very good job of minimizing duplication of material and restricting it to instances where it may usefully emphasize important points.

Despite the general excellence of the book, there are a few minor caveats. The color inserts add an unnecessary expense without, in my opinion, adding much to the usefulness. A few of the chapters lacked sufficient concluding summaries, or concluding summaries altogether, that would have helped solidify the main points in the reader's mind. Chapter 10 would also have benefited from additional tables summarizing the studies cited.

Overall, this book represents a superb presentation of the background and current un-