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Fanaroff & Martin's Neonatal-Perinatal Medicine

Diseases of the Fetus and Infant

10th Edition / Volume Two

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FANAROFF AND MARTIN'S NEONATAL- PERINATAL MEDICINE

Diseases of the Fetus and Infant

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To our spouses

Patricia Martin and Roslyn Fanaroff

to the Martin children and grandchildren

Scott, Molly, William, and Adelaide Martin;

Sonya Martin; and Peter, Mateo, and Soren Graif

to the Fanaroff children and grandchildren

Jonathan, Kristy, and Mason Fanaroff;

Jodi, Peter, Austin, and Morgan Tucker;

and Amanda, Jason, Jackson, and Raya Hirsh

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with love, admiration, and deep appreciation

for their continued support and inspiration



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Preface

The foundation for successful outcomes in neonatal-perinatal medicine has been the ability to apply knowledge of the fundamental pathophysiology of the various neonatal disorders to safe interventions. Molecular, biologic, and technologic advances have facilitated the diagnosis, monitoring, and therapy of these complex disorders. Advances at the bench have been translated to the bedside, and survival statistics reveal slow but steady improvements. Nonetheless, although the survival rates may give reason to rejoice, the high early morbidity and persistent neurodevelopmental problems remain cause for concern. Such problems include bronchopulmonary dysplasia, nosocomial infections, necrotizing enterocolitis, hypoxic-ischemic encephalopathy, cerebral palsy, and the inability to sustain the intrauterine rate of growth when infants are born prematurely. These problems need to be solved in addition to the complex, ever-expanding genetic disorders and birth defects that now loom as the major problems in the neonatal intensive care unit and as the leading causes of neonatal mortality.

The field of neonatal-perinatal medicine has transitioned from anecdotal medicine to evidence-based medicine. The problem is that evidence-based medicine predicts outcomes for groups but not individuals. The next frontier, individualized or personalized medicine, requires application of the human genome project to the individual patient. That frontier is rapidly approaching with the acquisition and application of new knowledge and technology. The translation of bench research to bedside innovation is proceeding smoothly, as is the understanding of the underlying mechanisms of many disorders. Advances in genetics have provided insight into the etiology of many disorders, and many previously mysterious diseases can now be attributed to single gene defects or mitochondrial disorders accompanied by cellular energy failure. We have addressed and incorporated these advances into the body of the text.

Presenting the current status of the field of neonatal-perinatal medicine, even in a two-volume textbook, has become extremely challenging. It is a tribute to the contributors to *Neonatal-Perinatal Medicine* that this text has

reached its tenth edition. With the combination of print and electronic journals, the effort to stay current in a single subspecialty remains a daunting task. To facilitate this, Elsevier, our publisher, has migrated the existing Web-based Student Consult and Expert Consult platforms to a new platform hosted by Inkling.com. Inkling is a pioneer in interactive cloud publishing and reimaging of books, including medical texts. The combination of an extensive library of expert content with their ability to truly bring that content alive paves an exciting path forward for the distribution of medical knowledge. Owners of the book will enjoy easy searches, a consistent structure, rich media, social and community features, and seamless electronic access from any device.

For this tenth edition, we have added several new sections and authors, notably expanding our international contributors and hence providing a truly global perspective. Many sections have been completely reorganized, and a large number of chapters have been rewritten or updated. Our accomplished authors and careful editing continue to focus on the biologic basis of developmental disorders and the evidence basis for their management.

This book would not exist without the remarkable clinical and intellectual environment that constitutes Rainbow Babies and Children's Hospital in Cleveland. On a daily basis, we gain knowledge from our faculty colleagues and fellows and wisdom from our nursing staff, who are so committed to their young patients. Once again, we have been blessed with an in-house editor, Bonnie Siner, to whom we cannot adequately express our thanks. She is the glue behind the binding in the book and has worked tirelessly with Elsevier staff members to bring this project to fruition. Elsevier has once again provided the resources to accomplish this mammoth task.

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Avroy A. Fanaroff

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