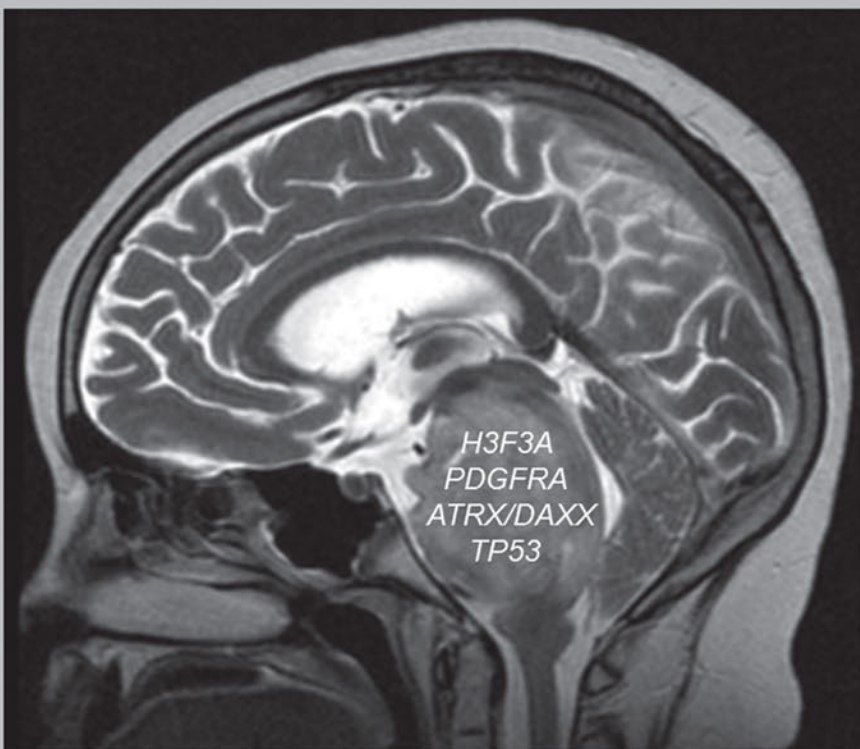
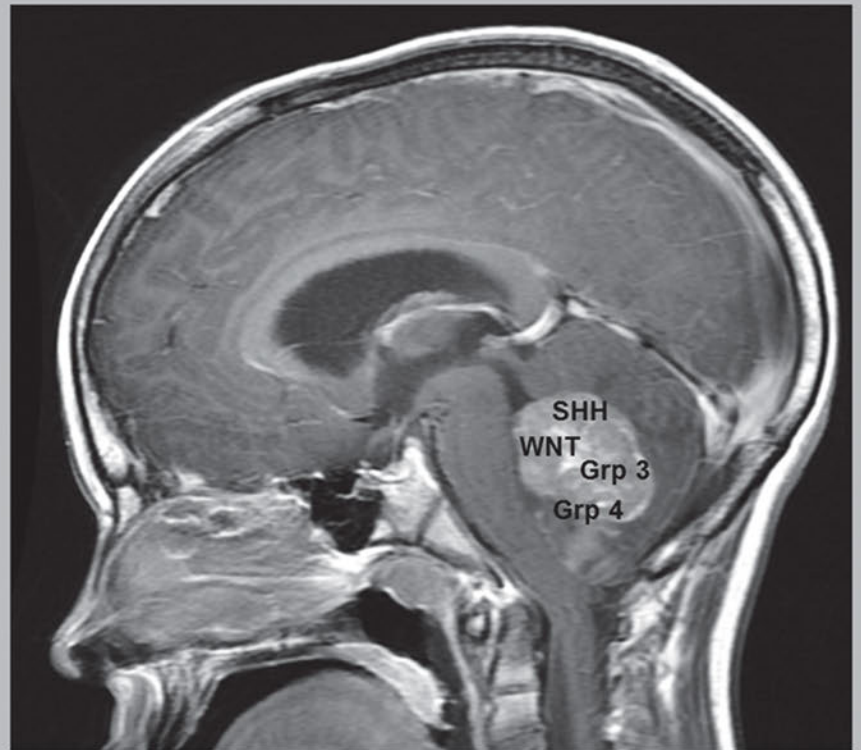


# Principles and Practice of Pediatric Neurosurgery

A. Leland Albright  
Ian F. Pollack  
P. David Adelson

3rd Edition









# Principles and Practice of Pediatric Neurosurgery

3rd Edition

**A. Leland Albright, MD**

Clinical Professor  
Department of Neurosurgery  
School of Medicine and Public Health  
University of Wisconsin–Madison  
Madison, Wisconsin  
Consultant  
Pediatric Neurosurgeon  
Kijabe Hospital  
Kijabe, Kenya

**Ian F. Pollack, MD, FAANS, FACS, FAAP**

Chief, Pediatric Neurosurgery  
Children's Hospital of Pittsburgh  
Walter Dandy Professor of Neurological Surgery, 2001–2013  
Leland Albright Professor of Neurological Surgery, 2013–present  
Vice Chairman for Academic Affairs  
Department of Neurological Surgery  
Co-Director, UPCI Brain Tumor Program  
University of Pittsburgh School of Medicine  
Co-Chair, National Cancer Institute Brain Malignancies Steering Committee  
Pittsburgh, Pennsylvania

**P. David Adelson, MD, FACS, FAAP**

Director  
Barrow Neurological Institute at Phoenix Children's Hospital  
Diane and Bruce Halle Endowed Chair for Pediatric Neurosciences  
Chief, Pediatric Neurosurgery/Children's Neurosciences  
Clinical Professor  
University of Arizona College of Medicine–Phoenix  
Adjunct Professor  
School of Biological and Health Systems Engineering  
Arizona State University  
Phoenix, Arizona

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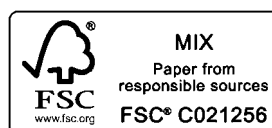
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This book is dedicated to

Susan Ferson, Julie and Todd Albright

Connie, Benjamin, and Andrew Pollack

Barbara, Samuel, and Richard Adelson; Casey, Brittany, and David Biederman





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# Preface

It was our hope that the first edition of this book would help improve the care of children with pediatric neurosurgical disorders and would contribute to the education of their caregivers. We have been gratified by the widespread acceptance and use of both the first edition in 1999 and the second edition in 2007, and particularly gratified by its increased use throughout the world.

In 2011, we began work on the third edition, with the same objectives as for the first edition. Organization of the book remains the same: general topics, congenital and developmental cerebral disorders, congenital and developmental spinal disorders, neoplasms, trauma, cerebrovascular disease, functional disorders, infectious disorders, and neuroanesthesia. The third edition, however, differs from the second edition in several ways. This edition includes seven chapters not included in the second edition: caring for the pediatric neurosurgical patient, cellular therapy for pediatric neurosurgical disease, conjoined twins, lipomeningoceles, skeletal syndromes, radiotherapy of brain tumors, and Moyamoya disease. The chapter on caring for the pediatric neurosurgical patient is likely to be of value daily.

We continued to invite acknowledged authorities to contribute chapters and attempted to identify individuals with balanced judgment and experience. Most of the chapters achieved that goal. Readers will note that 42 of the 82 chapters in this edition were written by different authors than the second edition—a fact that represents primarily the maturation of younger pediatric neurosurgeons into established authorities. Only 29 authors in this edition contributed to the first edition. Readers will also note that chapters in this

edition were written by authors in Europe (Richard Hayward and Dominic Thompson), the Middle East (Schlomi Constantini), and Africa (Anthony Figaji and Graham Fieggen)—a fact that acknowledges the international readership of the book, but more importantly, the international expertise about those topics.

The cover illustration—a magnetic resonance scans of a pediatric medulloblastoma and a diffuse intrinsic brainstem glioma (DIPG)—is similar to illustrations on the covers of the first two editions of the text, but includes genetic markers of those tumors that were unknown in 2007 and that have the potential to further improve the prognosis of children with medulloblastomas, and to perhaps finally improve—to at least a measurable extent—the terrible prognosis of children with DIPG.

When comparing the content of this third edition with that of the first, it is clear that pediatric neurosurgeons are able to give better care to children with many neurosurgical disorders, and far better care to those with a few disorders. It is also clear that for several classical pediatric neurosurgical disorders, such as myelomeningoceles and encephaloceles, little has improved since the first edition (other than the benefits of *in utero* closures) and to note that their incidence has steadily declined in developed countries, so that evaluation of prevention and treatment is less feasible.

Pediatric neurosurgeons, in general, are grateful for the blessing of caring for children with the disorders described on the following pages. We three editors remain hopeful that this third edition will help to further improve their care.\*

---

\* Note about the cover images: Sagittal magnetic resonance images of pediatric medulloblastoma (lower left) and diffuse intrinsic pontine glioma (DIPG, upper right). For the former tumors, recent studies have demonstrated the existence of at least four molecularly defined tumor subgroups, currently referred to as Shh, Wnt, Group C, and Group D, which have provided new insights regarding risk stratification and treatment planning. For DIPGs, which have proven resistant to conventional chemotherapy and radiotherapy approaches, recent molecular data has demonstrated frequent alterations in histone modification genes and *PDGFRA*. Time will tell whether these insights will translate into improvements in response and survival for children with these challenging tumors.

# Contributors

**Amal Abou-Hamden, MD**

Department of Neurosurgery  
Royal Adelaide Hospital  
Adelaide, Australia

**David Cory Adamson, MD, PhD**

Associate Professor of Neurosurgery and Neurobiology  
Department of Surgery (Neurosurgery)  
Duke University  
Durham, North Carolina

**P. David Adelson, MD, FACS, FAAP**

Director  
Barrow Neurological Institute at Phoenix Children's Hospital  
Diane and Bruce Halle Endowed Chair for  
Pediatric Neurosciences  
Chief, Pediatric Neurosurgery/Children's Neurosciences  
Clinical Professor  
University of Arizona College of Medicine–Phoenix  
Adjunct Professor  
School of Biological and Health Systems Engineering  
Arizona State University  
Phoenix, Arizona

**Raheel Ahmed, MD, PhD**

Department of Neurosurgery  
University of Iowa Hospitals and Clinics  
Iowa City, Iowa

**Edward Ahn, MD**

Assistant Professor of Neurosurgery  
Division of Pediatric Neurosurgery  
Johns Hopkins University School of Medicine  
Baltimore, Maryland

**A. Leland Albright, MD**

Clinical Professor  
Department of Neurosurgery  
School of Medicine and Public Health  
University of Wisconsin–Madison  
Madison, Wisconsin  
Consultant  
Pediatric Neurosurgeon  
Kijabe Hospital  
Kijabe, Kenya

**Richard C. E. Anderson, MD, FACS, FAAP**

Assistant Professor of Neurological Surgery  
Division of Pediatric Neurosurgery  
Columbia University  
Morgan Stanley Children's Hospital of New York Presbyterian  
New York, New York

**Kurtis Ian Auguste, MD**

Associate Physician  
Department of Neurological Surgery  
University of California–San Francisco Benioff  
Children's Hospital  
San Francisco, California  
Children's Hospital and Research Center Oakland  
Oakland, California

**Lissa C. Baird, MD**

Assistant Professor  
Department of Neurological Surgery  
Oregon Health & Science University  
Portland, Oregon

**Daniel L. Barrow, MD**

MBNA Bowman Professor and Chairman  
Department of Neurosurgery  
Director, Emory Stroke Center  
Emory University School of Medicine  
Atlanta, Georgia

**Constance M. Barone, MD, FACS**

Professor of Neurosurgery  
Department of Neurosurgery  
UT Health Science Center at San Antonio  
San Antonio, Texas

**Sue R. Beers, PhD**

Professor  
Department of Psychiatry  
University of Pittsburgh School of Medicine  
Children's Hospital of Pittsburgh of UPMC  
Pittsburgh, Pennsylvania

**Alexandra D. Beier, DO**

Assistant Professor  
Department of Neurosurgery  
University of Florida College of Medicine–Jacksonville  
Jacksonville, Florida

**Michael J. Bell, MD**

Professor, Critical Care Medicine  
Department of Neurological Surgery and Pediatrics  
University of Pittsburgh  
Pittsburgh, Pennsylvania

**Liat Ben-Sira, MD**

Head Pediatric Radiology Unit  
Department of Radiology  
Tel Aviv Sourasky Medical Center  
Tel Aviv, Israel

**Alejandro Berenstein, MD**

Director of Hyman Newman Institute  
Mount Sinai Health Systems  
New York, New York

**Jeffrey P. Blount, MD**

Professor, Pediatric Neurosurgery  
Department of Neurosurgery  
University of Alabama at Birmingham  
Children's of Alabama  
Birmingham, Alabama

**Frederick A. Boop, MD**

Chairman  
Department of Neurosurgery  
University of Tennessee Health Science Center  
Lebonheur Children's Hospital  
St Jude Children's Research Hospital  
Semmes-Murphey Clinic  
Memphis, Tennessee

**Daniel R. Boué, MD, PhD, FASCP, FCAP**

Director of Neuropathology  
Department of Laboratory Medicine  
Nationwide Children's Hospital  
Associate Professor—Clinical  
The Ohio State University  
Columbus, Ohio

**Ira E. Bowen, BA**

Research Associate  
Division of Neurosurgery  
Children's Hospital Los Angeles  
Los Angeles, California

**Douglas Brockmeyer, MD**

Professor and Division Chief of Pediatric Neurosurgery  
Department of Pediatric Neurosurgery  
University of Utah  
Salt Lake City, Utah

**Samuel R. Browd, MD, PhD, FACS, FAANS, FAAP**

Associate Professor of Neurological Surgery  
University of Washington  
Director, Hydrocephalus Program  
Seattle Children's Hospital  
Surgical Director, Spasticity Management Program  
Seattle Children's Hospital  
Seattle, Washington

**Jonathan D. Bui, MD, PhD**

Associate Professor of Neurosciences  
University of California—San Diego School of Medicine  
La Jolla, California  
Rady Children's Hospital  
San Diego, California

**Benjamin S. Carson Sr., MD**

Professor Emeritus of Neurosurgery, Oncology,  
Plastic Surgery, and Pediatrics  
Johns Hopkins Medicine  
Chairman and CEO  
American Business Collaborative, LLC  
Baltimore, Maryland

**Daniel Bradley Case, MD**

Neurointerventional Surgery  
Emory University Hospital  
Atlanta, Georgia

**C. Michael Cawley, MD, FACS**

Associate Professor  
Departments of Neurosurgery & Radiology  
Emory University School of Medicine  
Atlanta, Georgia

**Aaron J. Clark, MD, PhD**

Department of Neurological Surgery  
University of California—San Francisco  
San Francisco, California

**D. D. Cochrane, MD, FRCSC**

Head of the Division of Neurosurgery  
Department of Pediatric Surgery  
British Columbia Childrens Hospital  
University of British Columbia  
Vancouver, Canada

**Alan Cohen, MD, FACS, FAAP**

Neurosurgeon-in-Chief  
Boston Children's Hospital  
Franc D. Ingraham Professor of Neurosurgery  
Harvard Medical School  
Boston, Massachusetts

**Michael J. Conklin, MD**

Associate Professor Orthopedic Surgery  
Department of Surgery  
University of Alabama at Birmingham  
Birmingham, Alabama

**Shlomi Constantini, MD, MSc**

Director  
Department of Pediatric Neurosurgery  
Director  
The Gilbert Neurofibromatosis Center  
Dana Children's Hospital  
Tel Aviv Medical Center  
Tel Aviv University  
Tel Aviv, Israel

**Mark J. Dannenbaum, MD**

Assistant Professor  
 Department of Neurosurgery  
 University of Texas Medical School at Houston  
 Mischer Neuroscience Institute  
 Memorial Hermann Hospital  
 Houston, Texas

**Jason M. Davies, MD, PhD**

Department of Neurological Surgery  
 University of California–San Francisco  
 San Francisco, California

**Mark S. Dias, MD**

Professor of Neurosurgery and Pediatrics  
 Vice Chair for Clinical Neurosurgery and Director of  
 Pediatric Neurosurgery  
 Department of Neurosurgery  
 Penn State University  
 Penn State Children's Hospital  
 Hershey, Pennsylvania

**Benjamin J. Ditty, MD**

Department of Neurosurgery  
 University of Alabama at Birmingham  
 Birmingham, Alabama

**Bernadine Donahue, MD**

Clinical Associate Professor  
 Department of Radiation Oncology  
 New York University  
 New York, New York  
 Department of Radiation Oncology  
 Maimonides Cancer Center  
 Brooklyn, New York

**James M. Drake, BSE, MBBCh, MSc, FRCS, FACS**

Professor of Surgery, Neurosurgery Division Head  
 Hospital for Sick Children  
 Harold Hoffman Shoppers Drug Mart Chair  
 Pediatric Neurosurgery  
 Director, Centre for Image Guided Innovation and  
 Therapeutic Intervention  
 Co-Lead, Centre of Image Guided Care  
 Toronto, Canada

**Michael Duchowny, MD**

Director, Comprehensive Epilepsy Program  
 Miami Children's Hospital  
 Clinical Professor of Neurology  
 Florida International University College of Medicine  
 Miami, Florida

**Ann-Christine Duhaime, MD**

Director, Pediatric Neurosurgery  
 Massachusetts General Hospital  
 Nicholas T. Zervas Professor of Neurosurgery  
 Harvard Medical School  
 Boston, Massachusetts

**Claudia C. Faria, MD**

Neurosurgeon  
 Department of Neurosurgery  
 University of Toronto  
 The Arthur and Sonia Labatt Brain Tumour Research Centre  
 The Hospital for Sick Children  
 Toronto, Canada

**Graham Fieggen, MD, MSc, FCS (SA)**

Helen and Morris Mauerberger Professor and Head  
 Division of Neurosurgery  
 University of Cape Town  
 Cape Town, South Africa

**Anthony Figaji, MD, PhD**

Professor  
 Department of Neurosurgery  
 University of Cape Town  
 Cape Town, South Africa

**Michael L. Forbes, MD, FAAP, FCCM**

Associate Professor of Pediatrics  
 Northeast Ohio Medical University  
 Director, PICU Clinical Research and Outcomes Analysis  
 Division of Critical Care Medicine  
 Department of Pediatrics  
 Akron Children's Hospital  
 Akron, Ohio

**Andrew B. Foy, MD**

Assistant Professor of Neurosurgery  
 Department of Neurosurgery  
 Medical College of Wisconsin  
 Milwaukee, Wisconsin

**David M. Frim, MD, PhD**

Ralph Cannon Professor and Chief  
 Section of Neurosurgery  
 University of Chicago  
 Chicago, Illinois

**Paul Gardner, MD**

Co-Director, Cranial Base Center  
 Department of Neurosurgery  
 University Of Pittsburgh Medical Center  
 Pittsburgh, Pennsylvania