

PEDIATRIC NEUROLOGY

February 2019, Volume 91

Editor-in-Chief

E. Steve Roach, Austin, TX

Senior Associate Editor

Sidney M. Gospe, Jr, Seattle, WA

Associate Editor - Statistics

Taylor B. Arnold, Richmond, VA

Associate Editor

Mustafa Sahin, Boston, MA

Associate Editor

Pedro Weisleder, Columbus, OH

Founding Editor

Kenneth F. Swaiman, Minneapolis, MN

Editorial Board Members

Gyula Acsadi
Farmington, CT

Banu Anlar
Ankara, Turkey

Stephen Ashwal
Loma Linda, CA

Nigel Bamford
New Haven, CT

David Bearden
Rochester, NY

Martina Bebin
Birmingham, AL

J. Nicholas Brenton
Charlottesville, VA

Leslie Benson
Boston, MA

Galen N. Breningstall
St. Paul, MN

Lawrence W. Brown
Philadelphia, PA

Jeffrey R. Buchhalter
Phoenix, AZ

Carol S. Camfield
Halifax, NS, Canada

Peter R. Camfield
Halifax, NS, Canada

Gary Clark
Houston, TX

Bruce H. Cohen
Akron, OH

Anne Comi
Baltimore, MD

John Crawford
San Diego, CA

Paolo Curatolo
Rome, Italy

Stephen Deputy
New Orleans, LA

Jay Desai
Los Angeles, CA

Francis DiMario
Hartford, CT

Leon Epstein
Long Grove, IL

Kevin Ess
Nashville, TN

Donna M. Ferriero
San Francisco, CA

Jonathan Finlay
Columbus, OH

Laura Flores-Sarnat
Calgary, AB, Canada

Thomas Geller
Baltimore, MD

Timothy M. George
Austin, TX

Debabrata Ghosh
Columbus, OH

Donald Gilbert
Cincinnati, OH

Hannah C. Glass
San Francisco, CA

Howard Goodkin
Charlottesville, VA

Ajay Gupta
Cleveland, OH

Lori Jordan
Nashville, TN

Sergiusz Józwiak
Warsaw, Poland

Csaba Juhasz
Detroit, MI

Peter B. Kang
Gainesville, FL

Mitsuhiro Kato
Tokyo, Japan

Yasmin Khakoo
New York, NY

Eric Kossoff
Baltimore, MD

Sanjeev V. Kothare
Lake Success, NY

Darcy Krueger
Cincinnati, OH

Jeffrey L. Leonard
Columbus, OH

Grant Liu
Philadelphia, PA

Nathalie Maitre
Columbus, OH

David E. Mandelbaum
Providence, RI

Jonathan W. Mink
Rochester, NY

Masashi Mizuguchi
Tokyo, Japan

Solomon L. Moshé
New York, NY

Ann Neumeyer
Boston, MA

Yu-tze Ng
San Antonio, TX

Roger J. Packer
Washington, DC

Steven G. Pavlakis
Brooklyn, NY

John Phillips
Albuquerque, NM

Jean-Baptiste Le Pichon
Kansas City, MO

James Reese
Albuquerque, NM

Deborah Renaud
Rochester, MN

Nancy Rollins
Dallas, TX

Shinji Saitoh
Nagoya, Japan

Russell P. Saneto
Seattle, WA

Harvey B. Sarnat
Calgary, Alberta, Canada

Mark S. Scher
Cleveland, OH

Nina F. Schor
Bethesda, MD

Syndi Seinfeld
Richmond, VA

Reneé A. Shellhaas
Ann Arbor, MI

Michael I. Shevell
Montreal, PQ, Canada

Shlomo Shinnar
New York, NY

Matti L. Sillanpää
Turku, Finland

Harvey S. Singer
Baltimore, MD

Steven P. Sparagana
Dallas, TX

Jonathan Strober
San Francisco, CA

Yoshiyuki Suzuki
Tokyo, Japan

Daniel C. Tarquinio
Atlanta, GA

Alcy Torres
Boston, MA

Joseph J. Volpe
Boston, MA

David J. Walsh
Charleston, SC

Jithangi Wanigasinghe
Colombo, Sri Lanka

Maria Weimer
New Orleans, LA

Jo Wilmshurst
Cape Town, South Africa

Yvonne Wu
San Francisco, CA

Mary Zupanc
Orange, CA

PEDIATRIC NEUROLOGY

February 2019, Volume 91

Mission: Pediatric Neurology will enhance the exchange of ideas and provide essential information to individuals who care for children with neurological disorders.

Editor-in-Chief

E. Steve Roach, MD, *Austin, TX*

Senior Associate Editor

Sidney M. Gospe, Jr, *Seattle, WA*

Associate Editors

Taylor B. Arnold, *Richmond, VA*

Mustafa Sahin, *Boston, MA*

Pedro Weisleder, *Columbus, OH*

Founding Editor

Kenneth F. Swaiman, *Minneapolis, MN*

Journal Manager

Annapoorni Balasubramanian

a.balasubramanian@elsevier.com

Editorial Office Contact Information

Department of Neurology, HDB 5.708

The University of Texas Dell Medical School

1701 Trinity St, MC: Z0700

Austin, Texas, USA 78712

Telephone: 1 + 512 495-5196

roache@austin.utexas.edu

Website: <http://www.pedneur.com/>

Information for Authors: Submissions to Pediatric Neurology are now online only via EVISE. For the most up-to-date version of the Guide for Authors, please visit the journal's homepage at <http://www.pedneur.com/authorinfo>. This page also contains links to other author services and information such as artwork instructions, copy right information, track your paper, webshop, and ScienceDirect. To access the online submission system directly visit http://www.evise.com/evise/faces/pages/navigati on/NavController.jspx?JRNL_ACR=PNU. Visit <http://service.elsevier.com/for> accessing EVISE Training Resources and tutorials. For technical problems or questions contact the Elsevier Author Support Team at authorsupport@elsevier.com. Please contact the Pediatric Neurology journal manager for further assistance at c.abram@elsevier.com.

PUBLICATION INFORMATION: Pediatric Neurology (ISSN 0887-8994) is published monthly (6 issues per volume, 2 volumes per year) by Elsevier, 230 Park Avenue, Suite 800, New York, NY 10169. Periodicals postage paid at New York, NY and additional mailing offices.

POSTMASTER: Send address changes to Elsevier, Journal Returns, 1799 Highway 50 East, Linn, MO 65051.

ORDERS, CLAIMS, AND JOURNAL INQUIRIES: Please contact the Elsevier Customer Service Department nearest you: St. Louis: Elsevier Customer Service Department, 3251 Riverport Lane, Maryland Heights, MO 63043, USA; phone: (800) 654-2452 [toll free within the USA]; (+1) (314) 447-8871 [outside the USA]; fax: (+1) (314) 447-8029; e-mail: JournalCustomerService-usa@elsevier.com. Oxford: Elsevier Customer Service Department, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK; phone: (+44) (1865) 843434; fax: (+44) (1865) 843970; e-mail: JournalsCustomerServiceEMEA@elsevier.com. Tokyo: Elsevier Customer Service Department, 4F Higashi-Azabu, 1-Chome Bldg, 1-9-15 Higashi-Azabu, Minato-ku, Tokyo 106-0044, Japan; phone: (+81) (3) 5561 5037; fax: (+81) (3) 5561 5047; e-mail: JournalsCustomerServiceJapan@elsevier.com.

Singapore: Elsevier Customer Service Department, 3 Killiney Road, #08-01 Winsland House I, Singapore 239519; phone: (+65) 63490222; fax: (+65) 67331510; e-mail: JournalsCustomerServiceAPAC@elsevier.com.

YEARLY SUBSCRIPTION RATES: United States and possessions: Individual: USD 639; Student/Resident: USD 384. Europe: Individual: USD 737; Student/Resident: USD 441. Prices include airspeed delivery. To receive student/resident rate, orders must be accompanied by name of affiliated institution, date of term, and the signature of program/residency coordinator on institution letterhead. Orders will be billed at the individual rate until proof of status is received. Current prices are in effect for back volumes and back issues.

ADVERTISING INFORMATION: Advertising orders and inquiries can be sent to: USA, Canada, and South America: Bill Hipple, Elsevier Inc., 230 Park Avenue, Suite 800, New York, NY 10169, USA; telephone: (214) 592-4467; e-mail: b.hipple@elsevier.com. Classified advertising orders and inquiries can be sent to Traci Peppers, Elsevier Inc., 230 Park Avenue, Suite 800, New York, NY 10169, USA; telephone: (212) 633-3766.

REPRINTS: To order 100 or more reprints for educational, commercial, or promotional use, contact the Commercial Reprints Department, Elsevier Inc., 230 Park Avenue, Suite 800, New York, NY 10169; e-mail: reprints@elsevier.com.

© The paper used in this publication meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper).

FUNDING BODY AGREEMENTS AND POLICIES: Elsevier has established agreements and developed policies to allow authors whose articles appear in journals published by Elsevier to comply with potential manuscript archiving requirements as specified as conditions of their grant awards. To learn more about existing agreements and policies please visit <http://www.elsevier.com/fundingbodies>.

©2018 Elsevier Inc. All rights reserved.

This journal and the individual contributions contained in it are protected under copyright by Elsevier Inc., and the following terms and conditions apply to their use:

PHOTOCOPYING: Single photocopies of single articles may be made for personal use as allowed by national copyright laws. Permission of the publisher and payment of a fee is required for all other photocopying, including multiple or systematic copying, copying for advertising or promotional purposes, resale, and all forms of document delivery. Special rates are available for educational institutions that wish to make photocopies for nonprofit educational classroom use.

PERMISSIONS: Permissions may be sought directly from Elsevier's Rights Department in Oxford, UK: telephone (+1) 215 239-3804 or +44 (0)1865 843830, fax +44 (0) 1865 85333, e-mail healthpermissions@elsevier.com. Requests may also be completed online via the Elsevier homepage <http://www.elsevier.com/permissions>.

DERIVATIVE WORKS: Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the publisher is required for resale or distribution outside the institution.

Permission of the publisher is required for all other derivative works, including compilations and translations.

ELECTRONIC STORAGE OR USAGE: Permission of the publisher is required to store or use electronically any material contained in this journal, including any article or part of an article. Except as outlined above, no part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission of the publisher.

Address permissions requests to: Elsevier Rights Department at the fax and e-mail addresses noted above.

NOTICE: No responsibility is assumed by the publisher for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of any methods, products, instructions or ideas contained in the material herein. Because of rapid advances in the medical sciences, in particular, independent verification of diagnoses and drug dosages should be made.

Although all advertising material is expected to conform to ethical medical standards, inclusion in this publication does not constitute a guarantee or endorsement of the quality or value of such product or of the claims made of it by its manufacturer.

Pediatric Neurology is listed in Index Medicus, Current Contents/Clinical Medicine, Current Contents/Life Sciences, SCISEARCH, Biomedical databases, Automatic Subject Citation Alert, ElsevierBIOBASE/Current Awareness in Biological Sciences, and EMBASE/Excerpta Medica.

Pediatric Neurology is available online at www.sciencedirect.com. ScienceDirect