

# Neuro *epidemiology*

Founded 1982 by B.S. Schoenberg, continued by M. Alter (1989–1996),  
P.B. Gorelick (1997–2000) and G.C. Román (2001–2007)

---

## Editor-in-Chief

V.L. Feigin, Auckland

---

## Associate Editors

E. Beghi, Milano  
D.A. Bennett, Oxford  
G. Logroscino, Bari

---

## Assistant Editors

J.A. Ford, Auckland  
A. Theadom, Auckland

---

## Editorial Board

A. Anand, Chandigarh  
G.B.J. Anderson, Chicago, Ill.  
A. Barber, Auckland  
S. Barker-Collo, Auckland  
D.A. Bennett, Chicago, Ill.  
F. Bermejo, Madrid  
N.E. Bharucha, Mumbai  
G. Boysen, Copenhagen  
M. Brainin, Krems  
C. Brayne, Cambridge  
M.M.B. Breteler, Rotterdam  
A. Culebras, Syracuse, N.Y.  
R. D'Alessandro, Bologna  
J.F. Dartigues, Bordeaux  
J.L. Fisher, Columbus, Ohio  
G.M. Franklin, Seattle, Wash.  
A.J. Hannan, Melbourne, Vic.  
G. Hankey, Perth, W.A.  
W.A. Hauser, New York, N.Y.  
M.A. Ikram, Rotterdam  
J. Kesselring, Valens  
C. Ketzioian, Montevideo  
S.J. Kittner, Baltimore, Md.  
A. Korczyn, Tel-Aviv  
J.F. Kurtzke, Falls Church, Va.  
S.-M. Lai, Kansas City, Kans.  
L. Liu, Beijing  
M. Liu, Chengdu  
E.D. Louis, New York, N.Y.  
K. McPherson, Auckland  
M.M. Mehndiratta, New Delhi  
K. Nakashima, Yonago  
L. Nelson, Stanford, Calif.  
B. Norrving, Lund  
P.-M. Preux, Limoges  
A.H. Rajput, Saskatoon, Sask.  
K. Rockwood, Halifax, N.S.  
P.M. Rothwell, Oxford  
R.L. Sacco, Miami, Fla.  
O. Shafey, Abu Dhabi  
Y. Shinohara, Tokyo  
W.F. Stewart, Danville, Pa.  
A. Thrift, Melbourne, Vic.  
T. Truelsen, Copenhagen  
J. Tuomilehto, Helsinki  
C. Tzourio, Paris  
H. von Holst, Stockholm  
N. Venketasubramanian, Singapore  
H. von Holst, Stockholm  
W. Wang, Beijing

S. Karger  
Medical and Scientific Publishers  
Basel • Freiburg • Paris • London • New York •  
New Delhi • Bangkok • Beijing • Tokyo •  
Kuala Lumpur • Singapore • Sydney

#### Disclaimer

The statements, opinions and data contained in this publication are solely those of the individual authors and contributors and not of the publisher and the editor(s). The appearance of advertisements in the journal is not a warranty, endorsement, or approval of the products or services advertised or of their effectiveness, quality or safety. The publisher and the editor(s) disclaim responsibility for any injury to persons or property resulting from any ideas, methods, instructions or products referred to in the content or advertisements.

#### Drug Dosage

The authors and the publisher have exerted every effort to ensure that drug selection and dosage set forth in this text are in accord with current recommendations and practice at the time of publication. However, in view of ongoing research, changes in government regulations, and the constant flow of information relating to drug therapy and drug reactions, the reader is urged to check the package insert for each drug for any change in indications and dosage and for added warnings and precautions. This is particularly important when the recommended agent is a new and/or infrequently employed drug.

#### All rights reserved.

No part of this publication may be translated into other languages, reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording, microcopying, or by any information storage and retrieval system, without permission in writing from the publisher or, in the case of photocopying, direct payment of a specified fee to the Copyright Clearance Center (see 'General Information').

© Copyright 2011/2012 by S. Karger AG,  
P.O. Box, CH-4009 Basel (Switzerland)  
Printed in Switzerland  
on acid-free and non-aging paper (ISO 9706) by  
Reinhardt Druck, Basel

---

**KARGER**

Fax +41 61 306 12 34  
E-Mail [karger@karger.ch](mailto:karger@karger.ch)  
[www.karger.com](http://www.karger.com)

**No. 1**

Systematic Review

**1 Prevalence of Apolipoprotein E4 Genotype and Homozygotes (APOE e4/4) among Patients Diagnosed with Alzheimer's Disease: A Systematic Review and Meta-Analysis**

Ward, A.; Crean, S. (Lexington, Mass.); Mercaldi, C.J. (Bethesda, Md.); Collins, J.M.; Boyd, D. (Lexington, Mass.); Cook, M.N. (Collegeville, Pa.); Arrighi, H.M. (South San Francisco, Calif.)

Methods in Neuroepidemiology

**18 The Spectrum Captured: A Methodological Approach to Studying Incidence and Outcomes of Traumatic Brain Injury on a Population Level**

Theadom, A.; Barker-Collo, S.; Feigin, V.L. (Auckland); Starkey, N.J. (Hamilton); Jones, K.; Jones, A.; Ameratunga, S.; Barber, P.A. (Auckland) on behalf of the BIONIC Research Group

**30 Methodology of the Global and Regional Burden of Stroke Study**

The Global Burden of Disease Stroke Expert Group

Original Papers

**41 Characteristics of MR Infarcts Associated with Dementia and Cognitive Function in the Elderly**

Aggarwal, N.T.; Schneider, J.A.; Wilson, R.S.; Beck, T.L.; Evans, D.A. (Chicago, Ill.); De Carli, C. (Sacramento, Calif.)

**48 Clinical Correlates of Apathy in Patients Recently Diagnosed with Parkinson's Disease: The ANIMO Study**

Cubo, E. (Burgos); Benito-León, J. (Madrid); Coronell, C. (Barcelona); Armesto, D. (Burgos) on behalf of the ANIMO Study Group

**56 Birth Cohort Effects in Neurological Diseases: Amyotrophic Lateral Sclerosis, Parkinson's Disease and Multiple Sclerosis**

Ajdacic-Gross, V.; Schmid, M.; Tschopp, A.; Gutzwiller, F. (Zurich)

**64 The Month of Birth and the Incidence of Multiple Sclerosis in the Israeli Population**

Givon, U.; Zeilig, G.; Dolev, M.; Achiron, A. (Tel Hashomer/Tel Aviv)

**No. 2**

Original Papers

**69 Sex Differences in Stroke Incidence and Survival in Hong Kong, 2000–2007**

Wu, S.H.; Ho, S.C.; Chau, P.H.; Goggins, W.; Sham, A.; Woo, J. (Hong Kong)

**76 Multiple Sclerosis and Risk of Venous Thromboembolism: A Population-Based Cohort Study**

Christensen, S.; Farkas, D.K.; Pedersen, L. (Aarhus); Miret, M. (Geneva); Christiansen, C.F.; Sørensen, H.T. (Aarhus)

**84 Short-Term Exposure to Air Pollution and Incidence of Stroke and Acute Myocardial Infarction in a Japanese Population**

Turin, T.C. (Shiga/Calgary, Alta.); Kita, Y.; Rumana, N. (Shiga); Nakamura, Y. (Kyoto); Ueda, K. (Tsukuba); Takashima, N. (Shiga); Sugihara, H.; Morita, Y.; Ichikawa, M. (Takashima); Hirose, K. (Shiga); Nitta, H. (Tsukuba); Okayama, A. (Tokyo); Miura, K.; Ueshima, H. (Shiga)

**93 Increased Relative Risk of Lung Cancer in 2,904 Patients with Saccular Intracranial Aneurysm Disease in Eastern Finland**

Huttunen, T.; Riihinen, A. (Kuopio); Pukkala, E. (Helsinki); von und zu Fraunberg, M.; Koivisto, T.; Ronkainen, A.; Rinne, J. (Kuopio); Hernesniemi, J.; Sankila, R. (Helsinki); Jääskeläinen, J.E. (Kuopio)

**100 Epidemiology and Geographical Variation of Myasthenia Gravis in the Province of Pavia, Italy**

Montomoli, C.; Citterio, A.; Piccolo, G.; Cioccale, R.; Ferretti, V.V.; Fratti, C.; Bergamaschi, R.; Cosi, V.E. (Pavia)

**106 Smoking Is Not a Risk Factor for Sporadic Amyotrophic Lateral Sclerosis in an Australian Population**

Pamphlett, R.; Cochran Ward, E. (Sydney, N.S.W.)

**114 Progressive External Ophthalmoplegia in Southwestern Finland: A Clinical and Genetic Study**

Martikainen, M.H. (Turku); Hinttala, R. (Oulu); Røyttä, M.; Jääskeläinen, S.; Wendelin-Saarenhovi, M.; Parkkola, R. (Turku); Majamaa, K. (Oulu)

Comment

**120 Carotid Artery Disease in Sub-Saharan Africa: A Marker of Epidemiological and Stroke Transition**

Connor, M.D. (Edinburgh/Dunfermline/Johannesburg)

Letter to the Editor

**122 Multiple Sclerosis and the Iranian Revolution**

Pakpoor, J. (Oxford); Ramagopalan, S.V. (Oxford/London)

**No. 3**

Systematic Review

**123 Stroke in South Asia: A Systematic Review of Epidemiologic Literature from 1980 to 2010**

Kulshreshtha, A. (Atlanta, Ga.); Anderson, L.M. (Olympia, Wash.); Goyal, A.; Keenan, N.L. (Atlanta, Ga.)

Original Papers

**130 Prevalence of Dementia in Al Kharga District, New Valley Governorate, Egypt**

El Tallawy, H.N.; Farghly, W.M.A.; Shehata, G.A.; Rageh, T.A.; Hakeem, N.A.; Abo-Elfetoh, N.; Hegazy, A.M. (Assiut); Rayan, I. (Cairo); El-Moselhy, E.A. (Assiut)

- 138 High Prevalence of Major Neurological Disorders in Two Albanian Communities: Results of a Door-to-Door Survey**  
Kruja, J. (Tirana); Beghi, E. (Milano); Zerbi, D.; Dobi, D.; Kuqo, A.; Zekja, I.; Mijo, S.; Kapiszyz, M. (Tirana); Messina, P. (Milano)
- 148 Intracranial Stenosis in Young Patients: Unique Characteristics and Risk Factors**  
Siddiq, F.; Chaudhry, S.A.; Vazquez, G.; Suri, M.F.K.; Qureshi, A.I. (Minneapolis, Minn.)
- 154 Epidemiological Study and Clinical Profile of Parkinson's Disease in the Assiut Governorate, Egypt: A Community-Based Study**  
Khedr, E.M.; Al Attar, G.S.; Kandil, M.R.; Kamel, N.F.; Abo Elfetoh, N.; Ahmed, M.A. (Assiut)
- 164 A Population-Based Prospective 24-Month Study of Stroke: Incidence and 30-Day Case-Fatality Rates of First-Ever Strokes in Croatia**  
Pikija, S.; Cvetko, D. (Varaždin); Malojčić, B.; Trkanjec, Z. (Zagreb); Pavliček, I.; Lukić, A.; Kopjar, A. (Varaždin); Hajduk, M. (Klenovnik); Andrović, A. (Varaždin); Bilić-Genter, M. (Koprivnica); Trkulja, V. (Zagreb)
- 172 Knowledge of Stroke among an Urban Population in Cotonou (Benin)**  
Cossi, M.-J.; Preux, P.-M. (Limoges); Chabriat, H.; Gobron, C. (Paris); Houinato, D. (Limoges/Cotonou)
- 179 Hospitalised and Fatal Head Injuries in Viti Levu, Fiji: Findings from an Island-Wide Trauma Registry (TRIP 4)**  
Kool, B.; Raj, N. (Auckland); Wainiqolo, I.; Kafoa, B.; McCaig, E. (Suva); Ameratunga, S. (Auckland)

#### Methods in Neuroepidemiology

- 186 Accuracy and Sensitivity of Parkinsonian Disorder Diagnoses in Two Swedish National Health Registers**  
Feldman, A.L.; Johansson, A.L.V. (Stockholm); Gatz, M. (Stockholm/Los Angeles, Calif.); Flensburg, M. (Stockholm); Petzinger, G.M. (Los Angeles, Calif.); Widner, H. (Lund); Lew, M.F. (Los Angeles, Calif.); Pedersen, N.L. (Stockholm/Los Angeles, Calif.); Wirdefeldt, K. (Stockholm)

#### Letter to the Editor

- 194 Quality of Life in Adult Patients with Mitochondrial Myopathy**  
Orsucci, D.; Calsolaro, V.; Siciliano, G.; Mancuso, M. (Pisa)

#### Abstracts

- 196 Regional North American Annual Meeting of the World Federation of Neurology – Research Group on Neuroepidemiology**  
Louisiana State University, New Orleans, La., April 27, 2012  
Guest Editors: England, J. (New Orleans, La.); Franklin, G. (Seattle, Wash.); Leimpeter, A. (Oakland, Calif.); Van Den Eeden, S.K. (Oakland, Calif.) (available online only)

#### 193 Erratum

#### No. 4

#### Methods in Neuroepidemiology

- 203 A Conceptual Framework in the Study of Neuropsychological Development in Epidemiological Studies**  
Forns, J. (Barcelona); Aranbarri, A. (Donostia); Grellier, J.; Julvez, J. (Barcelona/Donostia/London); Vrijheid, M. (Barcelona); Sunyer, J. (Barcelona/Donostia/London/Boston, Mass.)
- 209 Capture-Recapture as a Potentially Useful Procedure for Assessing Prevalence of Multiple Sclerosis: Methodologic Exercise Using Portuguese Data**  
de Sá, J. (Lisbon); Alcalde-Cabero, E.; Almazán-Isla, J. (Madrid); Sempere, A. (Alicante); de Pedro-Cuesta, J. (Madrid)

- 259 Incidence of Hospital-Admitted Severe Traumatic Brain Injury and In-Hospital Fatality in Norway: A National Cohort Study**  
Andelic, N. (Oslo); Anke, A. (Tromsø); Skandsen, T. (Trondheim); Sigurdardottir, S. (Nesoddtangen); Sandhaug, M. (Kristiansand); Ader, T. (Bergen); Roe, C. (Oslo)
- 268 No Evidence for an Epidemic of Stroke with the Ageing of the Population**  
Thrift, A.G. (Melbourne, Vic./Heidelberg Heights, Vic.); Tong, B.; Senes, S.; Waters, A.-M. (Canberra, A.C.T.); Lalor, E. (Melbourne, Vic.)

#### Original Papers

- 219 Incidence and Prevalence of Spinal Cord Injury in Canada: A National Perspective**  
Noonan, V.K.; Fingas, M.; Farry, A.; Baxter, D. (Vancouver, B.C.); Singh, A. (Toronto, Ont.); Fehlings, M.G. (Vancouver, B.C./Toronto, Ont.); Dvorak, M.F. (Vancouver, B.C.)
- 227 Guillain-Barré Syndrome after H1N1 Vaccination in the United States: A Report Using the CDC/FDA Vaccine Adverse Event Reporting System (2009)**  
Souayah, N.; Yacoub, H.A. (Newark, N.J.); Khan, H.M.R. (Miami, Fla.); Michas-Martin, P.A. (Valhalla, N.Y.); Menkes, D.L. (Farmington, Conn.); Maybodi, L. (Newark, N.J.); Qureshi, A.I. (Minneapolis, Minn.)
- 233 Trends in Outcome and Hospitalization Charges of Adult Patients Admitted with Botulism in the United States**  
Souayah, N.; Shafiq Mehyar, L. (Newark, N.J.); Khan, H.M.R. (Miami, Fla.); Yacoub, H.A.; Abed Al-Kariem A Al-Qudah, Z. (Newark, N.J.); Nasar, A. (New York City, N.Y.); Begum Sheikh, Z.; Maybodi, L. (Newark, N.J.); Qureshi, A.I. (Minneapolis, Minn.)
- 237 Risk of Alzheimer's Disease in Relation to Diabetes: A Population-Based Cohort Study**  
Wang, K.-C.; Woung, L.-C.; Tsai, M.-T.; Liu, C.-C. (Taipei); Su, Y.-H. (Tainan); Li, C.-Y. (Tainan/Taichung)
- 245 Mortality Statistics for Multiple Sclerosis and Amyotrophic Lateral Sclerosis in Sweden**  
Boström, I. (Linköping); Riise, T. (Bergen); Landtblom, A.-M. (Linköping/Motala)
- 252 Epidemiologic and Clinical Features of Bell's Palsy among Children in Northern California**  
Rowhani-Rahbar, A.; Baxter, R.; Rasgon, B.; Ray, P. (Oakland, Calif.); Black, S. (Cincinnati, Ohio); Klein, J.O. (Boston, Mass.); Klein, N.P. (Oakland, Calif.)

#### Comments

- 250 Multiple Sclerosis and Amyotrophic Lateral Sclerosis: Finding and then Losing an Association**  
Albert, S.M. (Pittsburgh, Pa.)
- 274 Epidemiological Prediction: A Futile Pastime?**  
Boysen, G. (Copenhagen)

#### Letter to the Editor

- 217 Therapeutic Armamentarium and Health System Coverage of Multiple Sclerosis in Latin America**  
Gracia, F.; Armien, B. (Panama City)