



# The journal

Canadian Journal of Neurological Sciences

Volume 43 (Supplement 1) April 2016

## The Epidemiology of Dementia and its Commoner Neurodegenerative Causes

*Systematic Reviews and Meta-Analyses of the Incidence  
and Prevalence of Dementia, Alzheimer's Disease, Dementia  
with Lewy Bodies and Frontotemporal Dementia*

Editors: Nathalie Jetté, David B. Hogan and  
Colleen J. Maxwell

**A Peer-reviewed SUPPLEMENT to**  
***The Canadian Journal of Neurological Sciences***

AN INTERNATIONAL JOURNAL PUBLISHED BY THE CANADIAN NEUROLOGICAL SCIENCES FEDERATION

*The official Journal of:* The Canadian Neurological Society, The Canadian Neurosurgical Society,  
The Canadian Society of Clinical Neurophysiologists, The Canadian Association of Child Neurology

# Acknowledgements

This supplement was developed as part of the National Population Health Study of Neurological Conditions. We wish to acknowledge the membership of Neurological Health Charities Canada and the Public Health Agency of Canada for their contribution to the success of this initiative.

Funding for the study was provided by the Public Health Agency of Canada. The opinions expressed in the publication are those of the authors/researchers, and do not necessarily reflect the official views of the Public Health Agency of Canada.

We would like to express our thanks to Ms. Diane Lorenzetti, librarian at the University of Calgary, who guided the development of the search strategy for these systematic reviews. We would also like to thank the authors of the systematic reviews for their dedication, patience and efforts throughout the study.

Sincerely,

Nathalie Jetté, David B. Hogan and Colleen J. Maxwell (Editors of this Supplement)

Correspondence to:  
Nathalie Jetté MD, MSc, FRCPC  
Department of Clinical Neurosciences  
Hotchkiss Brain Institute  
O'Brien Institute for Public Health  
University of Calgary  
1403 29 Street NW  
Calgary, AB, T2N 2T9  
Phone 403.944.2760  
Fax 403.944.0988  
Email: nathalie.jette@albertahealthservices.ca

Volume 43 / Number s1 / April 2016

**REVIEW ARTICLE**

- S1** Systematic Reviews and Meta-Analyses of the Incidence and Prevalence of Dementia and Its Commoner Neurodegenerative Causes

*Nathalie Jetté, Colleen J. Maxwell, Kirsten M. Fiest, David B. Hogan*

**ORIGINAL ARTICLES**

- S3** The Prevalence and Incidence of Dementia: a Systematic Review and Meta-Analysis

*Kirsten M. Fiest, Nathalie Jetté, Jodie I. Roberts, Colleen J. Maxwell, Eric E. Smith, Sandra E. Black, Laura Blaikie, Adrienne Cohen, Lundy Day, Jayna Holroyd-Leduc, Andrew Kirk, Dawn Pearson, Tamara Pringsheim, Andres Venegas-Torres, David B. Hogan*

- S51** The Prevalence and Incidence of Dementia Due to Alzheimer's Disease: a Systematic Review and Meta-Analysis

*Kirsten M. Fiest, Jodie I. Roberts, Colleen J. Maxwell, David B. Hogan, Eric E. Smith, Alexandra Frolikis, Adrienne Cohen, Andrew Kirk, Dawn Pearson, Tamara Pringsheim, Andres Venegas-Torres, Nathalie Jetté*

- S83** The Prevalence and Incidence of Dementia with Lewy Bodies: a Systematic Review

*David B. Hogan, Kirsten M. Fiest, Jodie I. Roberts, Colleen J. Maxwell, Jonathan Dykeman, Tamara Pringsheim, Thomas Steeves, Eric E. Smith, Dawn Pearson, Nathalie Jetté*

- S96** The Prevalence and Incidence of Frontotemporal Dementia: a Systematic Review

*David B. Hogan, Nathalie Jetté, Kirsten M. Fiest, Jodie I. Roberts, Dawn Pearson, Eric E. Smith, Pamela Roach, Andrew Kirk, Tamara Pringsheim, Colleen J. Maxwell*



Volume 43 / Number S1 / April 2016

**Editor-in-Chief/Rédacteur en chef**

Robert Chen TORONTO, ON

**Associate Editors/Rédacteurs associés**

Etienne De Villers-Sidani MONTREAL, QC  
Robert Hammond LONDON, ON  
Hans Katzberg TORONTO, ON  
Mahendranath Moharir TORONTO, ON  
Tejas Sankar EDMONTON, AB  
Manas Sharma LONDON, ON  
Jeanne Teitelbaum MONTREAL, QC

**Past Editors/Anciens rédacteurs en chef**

G. Bryan Young LONDON, ON  
Douglas W. Zochodne CALGARY, AB  
James A. Sharpe TORONTO, ON  
Robert G. Lee CALGARY, AB  
Robert T. Ross WINNIPEG, MB  
(Emeritus Editor, Founding Editor)

**Editorial Board/Comité éditorial**

Jorge Burneo LONDON, ON  
Richard Desbiens QUEBEC CITY, QC  
David Fortin SHERBROOKE, QC  
Mark Hamilton CALGARY, AB  
Hans-Peter Hartung DUSSELDORF, GERMANY  
Michael Hill CALGARY, ON  
Alan C. Jackson WINNIPEG, MB  
Daniel Keene OTTAWA, ON  
James Perry TORONTO, ON  
Oksana Suchowersky EDMONTON, AB  
Brian Toyota VANCOUVER, BC  
Brian Weinshenker ROCHESTER, MN, USA  
Samuel Wiebe CALGARY, AB  
Elaine Wirrell ROCHESTER, MN, USA

**Book Review/Critiques de livres**

**Reflections/Reflets**

Andrew Kirk SASKATOON, SK

**Editorial Review Board/Comité de lecture**

Donald Brunet KINGSTON, ON

Jodie Burton CALGARY, AB  
Lionel Carmant MONTREAL, QC  
Colin Chalk MONTREAL, QC  
K. Ming Chan EDMONTON, AB  
Joseph Dooley HALIFAX, NS  
Paolo Federico CALGARY, AB  
Daryl Fournier SASKATOON, SK  
Hannah Glass SAN FRANCISCO, CA, USA  
Alan Goodridge ST. JOHNS, NL  
Ian Grant HALIFAX, NS  
Alan Gruberman OTTAWA, ON  
John Hurlbert CALGARY, AB  
Manouchehr Javidan VANCOUVER, BC  
Patrick McDonald WINNIPEG, MB  
Martin McKeown VANCOUVER, BC  
Joseph Megyesi LONDON, ON  
Vivek Mehta EDMONTON, AB  
Steven Miller TORONTO, ON  
Neelan Pillay CALGARY, AB  
Christopher Power EDMONTON, AB  
Alex Rajput SASKATOON, SK  
Jean Raymond MONTREAL, QC  
Gary Redekop VANCOUVER, BC  
Harvey Sarnet CALGARY, AB  
John Stewart VANCOUVER, BC  
Jeanne Teitelbaum MONTREAL, QC  
Eve Tsai OTTAWA, ON  
Shannon Venance LONDON, ON  
Matt Whetley EDMONTON, AB  
Jerome Yager EDMONTON, AB

**Journal Staff/Effectif du Journal**

Dan Morin CALGARY, AB  
*Chief Executive Officer*

**The official journal of: / La Revue officielle de:**

The Canadian Neurological Society  
La Société Canadienne de Neurologie  
The Canadian Neurosurgical Society  
La Société Canadienne de Neurochirurgie

The Canadian Society of Clinical Neurophysiologists  
La Société Canadienne de Neurophysiologie Clinique

**The Canadian Association of Child Neurology  
L'Association Canadienne de Neurologie Pédiatrique**

The permanent secretariat for the four societies and the Canadian Neurological Sciences Federation is at:  
Le secrétariat des quatre associations et de la Fédération des sciences neurologiques du Canada est situé en permanence à :

7015 Macleod Trail SW, Suite 709  
Calgary, Alberta, Canada T2H 2K6  
CNSF (403) 229-9544 / CJNS (403) 229-9575  
Fax (403) 229-1661

The Canadian Journal of Neurological Sciences is published bi-monthly. The annual subscription rate for Individuals (electronic) is £117/\$193. The annual subscription rate for Institutions (electronic) is £156/\$259. See <www.journals.cambridge.org/cjn> for full details including taxes; e-mail: subscriptions\_newyork@cambridge.org. The Canadian Journal of Neurological Sciences is included in the Cambridge Journals Online service, which can be accessed at www.journals.cambridge.org. For information on other Cambridge titles, visit www.cambridge.org. For advertising rates contact M. J. Mrvica Associates, 2 West Taunton Avenue, Berlin, NJ 08009; Phone: 856-768-9360; Fax: 856-753-0064; Email: mjmrvica@mrvica.com.

Le Journal Canadien des Sciences Neurolgiques est publié tous les deux mois. Le prix d'abonnement annuel pour les individus (électronique) est 111£/184\$. Le prix d'abonnement annuel pour les établissements (électronique) est 125£/207\$. Veuillez consulter <www.journals.cambridge.org/cjn> pour tous les détails, y compris les taxes; email: subscriptions\_newyork@cambridge.org. Le Journal canadien des sciences neurologiques est inclus dans le service Cambridge Journals Online, accessible à www.journals.cambridge.org. Pour plus d'informations sur les titres disponibles chez Cambridge, veuillez consulter www.cambridge.org. Pour les tarifs de publicité, contacter M. J. Mrvica Associates, 2 West Taunton Avenue, Berlin, NJ 08009; Téléphone: (1)856-768-9360; Email: mjmrvica@mrvica.com.

This journal is indexed by / Cette revue est indexée par:  
Adis International, ArticleFirst, BIOBASE, BioLab, BiolSci, BIOSIS Prev, Centre National de la Recherche Scientifique, CSA, CurAb, CurCont, De Gruyter Saur, E-psyche, EBSCO, Elsevier, EMBASE, FRANCIS, IBZ, Internationale Bibliographie der Rezensionen Geistes- und Sozialwissenschaftlicher Literatur, MEDLINE, MetaPress, National Library of Medicine, OCLC, PE&ON, Personal Alert, PsycFIRST, PsycINFO, PubMed, Reac, RefZh, SCI, SCOPUS, Thomson Reuters, TOCPrem, VINITI RAN, Web of Science.

ISSN: 0317-1671  
EISSN: 2057-0155

COPYRIGHT © 2016 by THE CANADIAN JOURNAL OF NEUROLOGICAL SCIENCES INC. All rights reserved. No part of this publication may be reproduced, in any form or by any means, electronic, photocopying, or otherwise, without permission in writing from Cambridge University Press. Policies, request forms and contacts are available at: http://www.cambridge.org/about-us/rights-permissions. Permission to copy (for users in the U.S.A.) is available from Copyright Clearance Center: http://www.copyright.com, email: info@copyright.com.

COPYRIGHT © 2016 du THE CANADIAN JOURNAL OF NEUROLOGICAL SCIENCES INC. Tous droits réservés.  
Aucune partie de cette publication ne peut être reproduite, sous quelque forme ou par quelque procédé que ce soit, électronique ou autre, y compris la photocopie, sans l'accord écrit de Cambridge University Press. Les politiques, les formulaires de demande et les contacts sont disponibles à: http://www.cambridge.org/about-us/rights-permissions. La permission de copier (pour les utilisateurs aux États-Unis) est disponible auprès Copyright Clearance Center: http://www.copyright.com, email: info@copyright.com.