



A monthly international journal founded by Metro A. Ogryzlo

**Editor-in-Chief**  
Earl D. Silverman

**Managing Editor**  
Carlyle Rodrigo

**Associate Editors**  
Joseph Beyene  
Cynthia S. Crowson  
John M. Davis, III  
Jeffrey B. Driban  
Sindhu R. Johnson  
Alexis Ogdie  
Christine A. Peschken  
Eric M. Ruderman

**Website**  
jrheum.org

**Guide for Authors**  
Complete instructions may be found at [www.jrheum.org/guideforauthors](http://www.jrheum.org/guideforauthors). All articles must be submitted online at [mc.manuscriptcentral.com/jrheum](http://mc.manuscriptcentral.com/jrheum).

**Publisher**  
The Journal of Rheumatology Publishing Co. Ltd.

Owned by the Canadian Rheumatology Association, a nonprofit organization and the national professional association for Canadian rheumatologists.



**The Journal of Rheumatology** publishes timely and original clinical papers on rheumatology and related fields. Publication of symposia on topics of interest are also considered.

**Editorial Office**  
365 Bloor Street E.  
Suite 901  
Toronto, ON M4W 3L4  
Canada  
T: (416) 967-5155  
F: (416) 967-7556  
jrheum@jrheum.com

**Manuscripts**  
Tina Jin  
Lindsay Bonello-MacNeil  
manuscripts@jrheum.com

**Editorial**  
Non Picart Riola  
Lindsay Madden  
production@jrheum.com

**Subscriptions**  
Trudy Deamude  
subscriptions@jrheum.com

**Accounting**  
Zameer Zahir  
zzahir@jrheum.com

**Reprints**  
reprints@jrheum.com

**Permissions**  
jrheum.com/permissions  
permissions@jrheum.com

**Administration & Meetings**  
Crystal Gellizeau  
meetings@jrheum.com

**Advertising (Canada)**  
Matt McMullan  
JLS Media  
T: (514) 726-5640  
mmcmullan@mediajls.com

**Advertising (USA)**  
Jim Brady  
T: (516) 742-7960  
F: (516) 742-7908  
jtbrady1@verizon.net

**Advertising (Europe)**  
Oliver Webb  
Oliver Webb Media  
T: +44 (0)1252 901140  
+44 (0)7966 530938  
oliver@owmedia.co.uk

All advertising subject to editorial review. Acceptance of advertising does not imply endorsement by *The Journal of Rheumatology*.

#### Editorial Board

Jonathan Adachi (CANADA)  
Graciela S. Alarcon (USA)  
Marta E. Alarcon-Riquelme (USA)  
Yannick Allanore (FRANCE)  
Xenofon Baraliakos (GERMANY)  
Cheryl Barnabe (CANADA)  
Timothy Beukelman (USA)  
Maarten Boers (THE NETHERLANDS)  
Matthew Brown (AUSTRALIA)  
Ruben Burgos-Vargas (MEXICO)  
Gerd R. Burmester (GERMANY)  
Livia Casciola-Rosen (USA)  
Laura C. Coates (UK)  
John J. Cush (USA)  
László Czirják (HUNGARY)  
Bhaskar Dasgupta (UK)  
Christopher P. Denton (UK)  
Atul A. Deodhar (USA)  
Patrick H. Dessein (BELGIUM)  
Maxime Dougados (FRANCE)  
David T. Felson (USA)  
Oliver M. Fitzgerald (IRELAND)  
Roy Fleischmann (USA)  
Marvin J. Fritzler (CANADA)  
Daniel E. Furst (USA)  
Dafna D. Gladman (CANADA)  
Miguel A. Gonzalez-Gay (SPAIN)  
Laura Gonzalez-Lopez (MEXICO)  
Peter C. Grayson (USA)  
Bevra H. Hahn (USA)

John G. Hanly (CANADA)  
Gillian A. Hawker (CANADA)  
Philip S. Helliwell (UK)  
Marie Hudson (CANADA)  
Robert D. Inman (CANADA)  
David A. Isenberg (UK)  
J. Charles Jennette (USA)  
Beverly Johnson (USA)  
Gurjit S. Kaeley (USA)  
Edward C. Keystone (CANADA)  
Dinesh Khanna (USA)  
Joel M. Kremer (USA)  
Chang-Fu Kuo (TAIWAN)  
Masataka Kuwana (JAPAN)  
Robert G. Lambert (CANADA)  
Robert B. Landewé (THE NETHERLANDS)  
Ronald M. Laxer (CANADA)  
Katy, Ying Ying Leung (SINGAPORE)  
Geoffrey O. Littlejohn (AUSTRALIA)  
Ennio Lubrano (ITALY)  
Walter P. Maksymowych (CANADA)  
Elena Myasoedova (USA)  
Marco Matucci-Cerinic (ITALY)  
Gale A. McCarty (USA)  
Chi Chiu Mok (HONG KONG)  
Tuhina Neogi (USA)  
Michael Nurmohamed (THE NETHERLANDS)  
Terence W. O'Neill (UK)

Eliseo Pascual (SPAIN)  
Theodore Pincus (USA)  
Janet E. Pope (CANADA)  
Manuel Ramos-Casals (SPAIN)  
Angelo Ravelli (ITALY)  
Philip C. Robinson (AUSTRALIA)  
Alan M. Rosenberg (CANADA)  
Nicolini Ruperto (ITALY)  
Anthony S. Russell (CANADA)  
Percival D. Sampaio-Barros (BRAZIL)  
Jorge Sanchez-Guerrero (CANADA)  
Rotraud K. Saurenmann (SWITZERLAND)  
Enrique R. Soriano (ARGENTINA)  
Matthew Stoll (USA)  
Vibeke Strand (USA)  
Tsutomu Takeuchi (JAPAN)  
Yoshiya Tanaka (JAPAN)  
William Tillet (UK)  
Gunnar Tomasson (ICELAND)  
Murray B. Urowitz (CANADA)  
Désirée van der Heijde (THE NETHERLANDS)  
Suzanne M.M. Verstappen (UK)  
Daniel J. Wallace (USA)  
Michael M. Ward (USA)  
Ulrich Weber (DENMARK)  
Pamela F. Weiss (USA)  
Daniel Wendling (FRANCE)  
Frederick Wolfe (USA)  
Yuqing Zhang (USA)

While the owner, publisher, and authors try to ensure that all materials in The Journal of Rheumatology are accurate, complete, and current, they make no guarantees or warranties as to such currency, completeness, or accuracy of the results to be obtained from accessing and using the materials. The publisher and owner do not endorse any information, advice, or other material. The owner, publisher, and authors expressly disclaim all representations, warranties of merchantability, or fitness for a particular purpose. They accept no responsibility or liability for damages or losses relating to any errors in or omissions from any material or from the use or inability to use such material. Printed by Britannia Printers Inc., Toronto.

Copyright © 2020. All rights reserved. Return postage guaranteed. PERIODICAL POSTAGE USPS 737-930 AT BUFFALO, NY, USA. US Postmaster send address changes to The Journal of Rheumatology, 1051 Clinton St., Buffalo, NY 14206-2823, USA.

The Journal of Rheumatology (ISSN 0315-162X) is published monthly by The Journal of Rheumatology Publishing Co. Ltd. Publication office address: The Journal of Rheumatology, 365 Bloor Street East, Suite 901, Toronto, ON Canada M4W 3L4; Email: jrheum@jrheum.com. 1051 Clinton St., Buffalo, NY 14206-2823, USA.