



## Editor

Tore K Kvien

## Associate Editors

Francis Berenbaum  
Hans Bijlsma  
David Pisetsky  
Dimitrios Boumpas  
Gerd Burmester  
Mary Crow  
Iain McInnes

## Editorial office

Annals of the Rheumatic Diseases  
BMJ Publishing Group Ltd  
BMA House  
Tavistock Square  
London WC1H 9JR, UK  
T: +44 (0)20 7383 6250  
F: +44 (0)20 7383 6668  
E: [ard@bmj.com](mailto:ard@bmj.com)  
Twitter: @ARD\_BMJ  
ISSN: 0003-4967 (print)  
ISSN: 1468-2060 (online)  
Impact Factor: 9.270

**Disclaimer:** ARD is owned and published by BMJ Publishing Group Ltd (a wholly owned subsidiary of the British Medical Association) and the European League Against Rheumatism. The owners grant editorial freedom to the Editor of ARD. ARD follows guidelines on editorial independence produced by the World Association of Medical Editors and the code on good publication practice of the Committee on Publication Ethics.

ARD is intended for medical professionals and is provided without warranty, express or implied. Statements in the journal are the responsibility of their authors and advertisers and not authors' institutions the BMJ Publishing Group, the European League Against Rheumatism or the BMA unless otherwise specified or determined by law. Acceptance of advertising does not imply endorsement.

To the fullest extent permitted by law, the BMJ Publishing Group shall not be liable for any loss, injury or damage resulting from the use of ARD or any information in it whether based on contract, tort, or otherwise. Readers are advised to verify any information they choose to rely on.

**Copyright:** © 2015 BMJ Publishing Group and European League Against Rheumatism. All rights reserved; 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 permission. ARD is published by BMJ Publishing Group Ltd typeset by Teichset and printed in the UK on acid-free paper.

*Annals of the Rheumatic Diseases* (ISSN No: 0003-4967) is published monthly by BMJ Publishing Group and distributed in the USA by Air Business Ltd. Periodicals postage paid at Jamaica NY 11431. POSTMASTER: send address changes to *Annals of the Rheumatic Diseases*, Air Business Ltd, c/o Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA.



Receive regular table of contents by email.  
Register using this QR code.

## Editorial

- 1325** Metabolomics for rheumatic diseases: has the time come?  
*L Semerano, P-H Roméo, M-C Boissier*

## Recommendation

- 1327** EULAR recommendations for the use of imaging in the diagnosis and management of spondyloarthritis in clinical practice  
*P Mandl, V Navarro-Compán, L Terslev, P Aegerter, D van der Heijde, M A D'Agostino, X Baraliakos, S J Pedersen, A G Jurik, E Naredo, C Schueller-Weidekamm, U Weber, M C Wick, P A C Bakker, E Filippucci, P G Conaghan, M Rudwaleit, G Schett, J Sieper, S Tarp, H Marzo-Ortega, M Østergaard*

## Review

- 1340** In the idiopathic inflammatory myopathies (IIM), do reactive oxygen species (ROS) contribute to muscle weakness?  
*A P Lightfoot, A McArdle, M J Jackson, R G Cooper*

## Clinical and epidemiological research

- 1347** Increased risk of osteoporotic fractures in patients with systemic sclerosis: a nationwide population-based study  
*C-C Lai, S-H Wang, W-S Chen, C-J Liu, T-J Chen, P-C Lee, Y-S Chang*
- 1353** Early T2 changes predict onset of radiographic knee osteoarthritis: data from the osteoarthritis initiative  
*H Liebl, G Joseph, M C Nevitt, N Singh, U Heilmeier, K Subburaj, P M Jungmann, C E McCulloch, J A Lynch, N E Lane, T M Link*
- 1360** Risk of high-grade cervical dysplasia and cervical cancer in women with systemic inflammatory diseases: a population-based cohort study  
*S C Kim, R J Glynn, E Giovannucci, S Hernández-Díaz, J Liu, S Feldman, E W Karlson, S Schneeweiss, D H Solomon*
- 1368** Allopurinol initiation and all-cause mortality in the general population  
*M Dubreuil, Y Zhu, Y Zhang, J D Seeger, N Lu, Y H Rho, H K Choi*
- 1373** The epidemiology of extra-articular manifestations in ankylosing spondylitis: a population-based matched cohort study  
*C Stolwijk, I Essers, A van Tubergen, A Boonen, M T Bazelier, M L De Bruin, F de Vries*
- 1379** Trends in prescription of biological agents and outcomes of juvenile idiopathic arthritis: results of the Dutch national Arthritis and Biologics in Children Register  
*M H Otten, J Anink, F H M Prince, M Twilt, S J Vastert, R ten Cate, E P A H Hoppenreijs, W Ambrust, S L Gorter, P A van Pelt, S S M Kamphuis, K M Dolman, J F Swart, J M van den Berg, Y Koopman-Keemink, M A J van Rossum, N M Wulffraat, L W A van Suijlekom-Smit*

- 1387** Association study of genes related to bone formation and resorption and the extent of radiographic change in ankylosing spondylitis  
*A Cortes, W P Maksymowych, B P Wordsworth, R D Inman, P Danoy, P Rahman, M A Stone, M Corr, L S Gensler, D Gladman, A Morgan, H Marzo-Ortega, M M Ward, SPARCC (Spondyloarthritis Research Consortium of Canada), TASC (Australo-Anglo-American Spondyloarthritis Consortium), T J Leach, J D Reveille, M A Brown, M H Weisman*

- 1394** Lack of gene–diuretic interactions on the risk of incident gout: the Nurses' Health Study and Health Professionals Follow-up Study  
*Y Bao, G Curhan, T Merriman, R Plenge, P Kraft, H K Choi*

## Basic and translational research

- 1399** Choline kinase inhibition in rheumatoid arthritis  
*M Guma, E Sanchez-Lopez, A Lodi, R Garcia-Carbonell, S Tiziani, M Karin, J C Lacal, G S Firestein*
- 1408** Stimulation of the soluble guanylate cyclase (sGC) inhibits fibrosis by blocking non-canonical TGFβ signalling  
*C Beyer, C Zenzmaier, K Palumbo-Zerr, R Mancuso, A Distler, C Dees, P Zerr, J Huang, C Maier, M L Pachowsky, A Friebe, P Sandner, O Distler, G Schett, P Berger, J H W Distler*
- 1417** Neutrophil extracellular traps induce endothelial dysfunction in systemic lupus erythematosus through the activation of matrix metalloproteinase-2  
*C Carmona-Rivera, W Zhao, S Yalavarthi, M J Kaplan*
- 1425** IgM rheumatoid factor amplifies the inflammatory response of macrophages induced by the rheumatoid arthritis-specific immune complexes containing anticitrullinated protein antibodies  
*L Laurent, F Anquetil, C Clavel, N Ndongo-Thiam, G Offer, P Miossec, J-L Pasquali, M Sebbag, G Serre*
- 1432** Cartilage-specific deletion of mTOR upregulates autophagy and protects mice from osteoarthritis  
*Y Zhang, F Vasheghani, Ying-hua Li, M Blati, K Simeone, H Fahmi, B Lussier, R Roughley, D Lagares, J-P Pelletier, J Mantel-Pelletier, M Kapoor*

## MORE CONTENTS ►



This article has been chosen by the Editor to be of special interest or importance and is freely available online.



This article has been made freely available online under the BMJ Journals Open Access scheme. See <http://ard.bmj.com/site/about/guidelines.xhtml#open>



This journal is a member of and subscribes to the principles of the Committee on Publication Ethics

<http://publicationethics.org/>



- 1441** Gene profiling reveals specific molecular pathways in the pathogenesis of atherosclerosis and cardiovascular disease in antiphospholipid syndrome, systemic lupus erythematosus and antiphospholipid syndrome with lupus

*C Perez-Sanchez, N Barbaroja, S Messineo, P Ruiz-Limon, A Rodriguez-Ariza, Y Jimenez-Gomez, M A Khamashta, E Collantes-Estevez, M<sup>a</sup> J Cuadrado, M<sup>a</sup> A Aguirre, C Lopez-Pedreira*

- 1450** Atherosclerosis and cardiovascular disease in systemic lupus erythematosus: effects of in vivo statin treatment

*P Ruiz-Limon, N Barbaroja, C Perez-Sanchez, M A Aguirre, M L Bertolaccini, M A Khamashta, A Rodriguez-Ariza, Y Almadén, P Seguí, H Khraiwesh, J A Gonzalez-Reyes, J M Villalba, E Collantes-Estevez, M J Cuadrado, C Lopez-Pedreira*

- 1459** A key role for Fut1-regulated angiogenesis and ICAM-1 expression in K/BxN arthritis

*M A Amin, P L Campbell, J H Ruth, T Isozaki, B J Rabquer, W A Stinson, M O'Brien, G Edhayan, R A Ohara, J Vargo, S E Domino, A E Koch*

- 1467** Follistatin-like protein 1 regulates chondrocyte proliferation and chondrogenic differentiation of mesenchymal stem cells

*Y Chaly, H C Blair, S M Smith, D S Bushnell, A D Marinov, B T Campfield, R Hirsch*

- 1474** The proteasome inhibitor bortezomib depletes plasma cells and ameliorates clinical manifestations of refractory systemic lupus erythematosus



*T Alexander, R Sarfert, J Kloische, A A Kuhl, A Rubbert-Roth, H-M Lorenz, J Rech, B F Hoyer, Q Cheng, A Waka, A Taddeo, M Wiesener, G Schett, G-R Burmester, A Radbruch, F Hiepe, R E Voll*

## Letters

- 1479** Malignant progression of precancerous lesions of the uterine cervix following biological DMARD therapy in patients with arthritis

*R Cordtz, L Mellemejær, B Glimborg, M L Hetland, L Dreyer*

- 1480** Genetic contribution of *DKK-1* polymorphisms to RA structural severity and *DKK-1* level of expression

*C Miceli-Richard, K E Taylor, J Niitham, R Seror, G Nocturne, S Boudaoud, P Dieude, A Constantin, V Devauchelle-Pensec, G J Tobón, X Mariette, L A Criswell*

## Correction

- 1482** Correction