

**Editor-in-Chief**  
C. Soon Lee (Australia)

**Editors**  
Runjan Chetty (Reviews and Molecular Pathology; Canada)  
Dhiren Govender (Regional Editor for Africa; South Africa)  
Slade Jensen (Microbiology; Australia)  
C. Soon Lee (Histopathology; Australia)  
Mary Frances McMullin (Haematology; UK)  
Tahir Pillay (Chemical Pathology; South Africa)  
Joe Unsworth (Immunology; UK)

**Web Editor**  
Dhiren Govender (South Africa)

**Best Practice Editor**  
Newton Wong (Bristol University; UK)

**Statistical Editor**  
Angie Wade (UK)

**Impact Factor: 2.439**

**Disclaimer:** Journal of Clinical Pathology is owned and published by the Association of Clinical Pathologists and BMJ Publishing Group Ltd, a wholly owned subsidiary of the British Medical Association. The owners grant editorial freedom to the Editor of Journal of Clinical Pathology. Journal of Clinical Pathology 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.

Journal of Clinical Pathology 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 Ltd 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 Ltd shall not be liable for any loss, injury or damage resulting from the use of Journal of Clinical Pathology 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:** © 2014 by the BMJ Publishing Group Ltd & Association of Clinical Pathologists. 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 the prior permission of Journal of Clinical Pathology.

Journal of Clinical Pathology is published by BMJ Publishing Group Ltd, typeset by Techset and printed in the UK.

*Journal of Clinical Pathology* (ISSN No: 0021-9746) 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 *Journal of Clinical Pathology*, Air Business Ltd, c/o Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA

# Journal of Clinical Pathology

Journal of the Association of Clinical Pathologists

JCP is a core publication for workers in all disciplines of pathology. Clinical pathology is its central theme but the journal also publishes basic science papers with a clear clinical application

## International Advisory Board

F Al-Mulla (Kuwait), S Asa (Canada), S Badve (USA), F Baehner (USA), B Bandarchi (Canada), A C Bateman (UK), M Catherwood (Ireland), S Chakraborty (USA), L Cheng (USA), K-J Cho (Korea), K Cooper (USA), F Couto (India), P Coyle (UK), M Crook (UK), G Cserni (Hungary), A P Dei Tos (Italy), B Delahunt (New Zealand), V Deshpande (USA), S Devaraj (USA), R Drut (Argentina), W Erber (Australia), O Fadare (USA), A Falpe (USA), S Fox (Australia), D Ghazarian (Canada), A Giordano (USA), I Gosbell (Australia), O Harada (Japan), C-C Huang (Taiwan), W Irving (UK), J Iqbal (Singapore), C Jones (UK), S Kakar (USA), K Kerr (UK), T-H Koh (Singapore), C Le Roux (UK), S-Y Leung (Hong Kong), K H Lim (Singapore), S Marshall (UK), G McCluggage (UK), M F McMullin (UK), E Montgomery (USA), T Mori (Japan), T Moriya (Japan), S Nayler (South Africa), H-K Ng (Hong Kong), J J O'Leary (Ireland), A Oliveira (USA), M Papotti (Italy), G Perry (USA), T Reynolds (UK), M Salto-Tellez (UK), F Schmitt (Portugal), J Y Scoazec (France), R R Seethala (USA), B Simpson (UK), P H Tan (Singapore), S Y Tan (Singapore), G Tse (Hong Kong), P Twomey (UK), J Wainscoat (UK), I S Young (Northern Ireland), J Yuan (USA)

## Association of Clinical Pathologists

**President**  
T M Reynolds

**President-Elect**  
B S Wilkins

**Vice-Presidents**  
E W Benbow

**Chairman of Council**  
M E Wood

**Honorary Secretary**  
M K Heatley

**Honorary Treasurer**  
A Oriolowo

**General Administrator**  
R Eustace,  
189 Dyke Road, Hove,  
East Sussex BN3 1TL UK  
T: +44 (0)1273 775 700  
F: +44 (0)1273 773 303  
E: [info@pathologists.org.uk](mailto:info@pathologists.org.uk)  
<http://pathologists.org.uk>



## JCP Online Archive

The full back archive of Journal of Clinical Pathology is now available from 1969 at <http://jcp.bmj.com/>. Users have FREE access to all articles, older than 12 months\*, right back to Volume 1, Issue 1. The online archives were digitised with the help of the US National Library of Medicine.

Personal subscribers must sign in to access this content. Users not covered by an institutional or personal subscription will have to complete a one-time registration that grants access to all archive content, across all our titles.

\*Articles that are 12 months old or less require a subscription to access them.

## Subscription Information

Journal of Clinical Pathology is published monthly (subscribers have access to all supplements)

### Institutional Rates 2014

**Print**  
£730; US\$1424; €986

### Online

Site licences are priced on FTE basis and allow access by the whole institution.

### Personal Rates 2014

**Print** (includes online access at no additional cost)  
£278; US\$543; €376

**Online only**  
£139; US\$272; €188

ISSN: 0021 9746 (print)  
ISSN: 1472 4146 (online)

Personal print or online only and institutional print subscriptions may be purchased online at <http://group.bmj.com/group/subs-sales/subscriptions> (payment by MasterCard/Visa only).

Residents of some EC countries must pay VAT; for details call us or visit <http://group.bmj.com/group/subs-sales/subscriptions/subs-vat>

## Contact Details

### Editorial Office

BMJ Publishing Group Ltd, BMA House, Tavistock Square, London WC1H 9JR, UK  
T: +44 (0)20 7383 6309  
E: [jclnpath@bmj.com](mailto:jclnpath@bmj.com)

### Production Editor

Yen Chau  
T: +44 (0) 20 7383 6601  
E: [production.jcp@bmj.com](mailto:production.jcp@bmj.com)

### Permissions

<http://jcp.bmj.com/site/help/index.xhtml>

### Supplement Enquiries

T: +44 (0)20 7383 6795  
E: [lfountain@bmj.com](mailto:lfountain@bmj.com)

### Subscriptions

T: +44 (0)20 7111 1105  
E: [support@bmj.com](mailto:support@bmj.com)

### Display Advertising Sales

Sophie Fitzsimmons (Sales Manager)  
T: +44 (0)20 7383 6783  
E: [sftzsimmons@bmj.com](mailto:sftzsimmons@bmj.com)  
<http://group.bmj.com/advertising>

### Online Advertising Sales

Marc Clifford (Sales Manager)  
T: +44 (0) 20 7383 6161  
E: [mclifford@bmj.com](mailto:mclifford@bmj.com)  
<http://group.bmj.com/advertising>

### Display & Online Advertising Sales (USA)

Jim Cunningham  
T: +1 201 767 4170  
E: [jcunningham@cunnasso.com](mailto:jcunningham@cunnasso.com)

### Reprints

Dennis Barber  
T: +44 (0)20 7383 6305  
E: [admin.reprints@bmj.com](mailto:admin.reprints@bmj.com)

### Commercial Reprints (except USA & Canada)

Nadia Gurney-Randall  
T: +44 (0)20 8445 5825  
M: +44 (0)7866 262344  
E: [ngurneyrandall@bmj.com](mailto:ngurneyrandall@bmj.com)

### Commercial Reprints (USA & Canada)

Marsha Fogler  
T: +1 800 482 1450 (toll free in the USA)  
T: +1 856 489 4446 (outside the USA)  
E: [mfogler@bmj.com](mailto:mfogler@bmj.com)

## Guidelines for Authors and Reviewers

Full instructions are available online at <http://jcp.bmj.com/fora>. Articles must be submitted electronically <http://submit-jcp.bmj.com>. Authors retain copyright but are required to grant Journal of Clinical Pathology an exclusive licence to publish <http://jcp.bmj.com/fora/licence.dtl>