



EUROPEAN RESPIRATORY *journal*

Impact factor:
5.895

CHIEF EDITOR

Marc Humbert

Université Paris-Sud, Service de Pneumologie, Hôpital Bicêtre, 78 Rue de Général Leclerc, 94270 Le Kremlin-Bicêtre, France.
E-mail: erj.chief-editors@ersnet.org

PUBLICATIONS OFFICE

Managing Editor: **Neil Bullen**, neil.bullen@ersj.org.uk
Head of Publications: **Elin Reeves**, elin.reeves@ersj.org.uk
442 Glossop Road, Sheffield, S10 2PX. Tel: +44 114 267 2860 | Fax: +44 114 266 5064

Past Chief Editors: **J-C. Yernault**†, Brussels, Belgium; **E. Berglund**, Gothenburg, Sweden; **P. Vermeire**†, Antwerp, Belgium; **U. Costabel**, Essen, Germany; **M. Decramer**, Leuven, Belgium; **P.J. Sterk** and **K.F. Rabe**, Amsterdam, the Netherlands and Kiel, Germany;
A.T. Dinh-Xuan and **V. Brusasco**, Paris, France and Genoa, Italy.

DEPUTY CHIEF EDITOR

Anh Tuan Dinh-Xuan, Université Paris-Descartes, France.

ASSOCIATE EDITORS

Nicolino Ambrosino, University Hospital of Pisa, Italy; **Gary P. Anderson**, University of Melbourne, Australia; **Isabella Annesi-Maesano**, Université Pierre et Marie Curie, France; **Robert Bals**, Universitätsklinikum des Saarlandes, Germany; **Elisabeth H.D. Bel**, University of Amsterdam, The Netherlands; **Benjamin Besse**, Institut Gustave-Roussy, France; **Louis-Philippe Boulet**, Université Laval, Canada; **Jean Bousquet**, INSERM, France; **Pascal Chanez**, Université de la Méditerranée, France; **Vincent Cottin**, University of Lyon, France; **Marion Delcroix**, UZ Leuven, Belgium; **Leonardo M. Fabbri**, Università degli Studi di Modena e Reggio Emilia, Italy; **Ramon Farré**, Universitat de Barcelona, Spain; **Mina Gaga**, Athens Chest Hospital 'Sotiria', Greece; **Dominik Hartl**, University of Tübingen, Germany; **Paul Hassoun**, Johns Hopkins University School of Medicine, USA; **Marius M. Hoepfer**, Hannover Medical School, Germany; **Steven Kawut**, University of Pennsylvania School of Medicine, USA; **Melanie Koenigshof**, Ludwig Maximilians University München, Germany; **Stavros Konstantinides**, Johannes Gutenberg University of Mainz, Germany; **Tom Kotsimbos**, Monash University, Australia; **Claudia Kuehni**, University of Bern, Switzerland; **Patrick Lévy**, Université Joseph Fourier, France; **Joseph P. Lynch**, University of California Los Angeles, USA; **Peter J.F.M. Merkus**, Radboud University Nijmegen Medical Centre, The Netherlands; **Giovanni Battista Migliori**, Fondazione S. Maugeri Care and Research Institute, Italy; **Martin R. Miller**, University of Birmingham, UK; **Joachim Müller-Quernheim**, Medizinische Klinik der Universität Freiburg, Germany; **Robert Naeije**, Erasme University Hospital, Belgium; **Paolo Palange**, University La Sapienza, Italy; **Ganesh Raghu**, University of Washington Medical Center, USA; **Luca Richeldi**, University Hospital of Modena, Italy; **Marina Saetta**, Università degli Studi di Padova, Italy; **Jean-Paul Sculier**, Institut Jules Bordet, Belgium; **Thomas Similowski**, Université Pierre et Marie Curie, France; **Joan B. Soriano**, Recinte Hospital Joan March, Spain; **Giovanni Sotgiu**, University of Sassari, Italy; **Rogério Souza**, University of Sao Paulo Medical School, Brazil; **Sami Suissa**, McGill University, Canada; **Paul E. Van Schil**, University Hospital of Antwerp, Belgium; **Norbert Voelkel**, Virginia Commonwealth University, USA; **Anton Vonk Noordegraaf**, VU University Medical Center, The Netherlands; **Wisla Wedzicha**, University College London Medical School, UK; **Tobias Welte**, Hannover Medical School, Germany; **Mark A. Woodhead**, Manchester Royal Infirmary, UK.

INTERNATIONAL ADVISORY BOARD

Peter J. Barnes, Imperial College London, UK; **Eric Berglund**, Gothenburg, Sweden; **Judith L. Black**, University of Sydney, Australia; **Eric D. Bateman**, University of Cape Town, South Africa; **Francesco Blasi**, Università di Milano, Italy; **Laurent Brochard**, Hôpitaux Universitaires de Genève, Switzerland; **Guy Brusselle**, Ghent University Hospital, Belgium; **Peter M.A. Calverley**, University Hospital Aintree, UK; **Ulrich Costabel**, Ruhrlandklinik, Germany; **Bruno Crestani**, Université Paris-Diderot, France; **Jeffrey M. Drazen**, Harvard University, USA; **Ratko Djukanovic**, University of Southampton, UK; **Stephen Durham**, Imperial College London, UK; **Oliver Eickelberg**, Helmholtz Zentrum München, Germany; **Loïc Guillevin**, Université Paris-Descartes, France; **Peter Hiemstra**, Leiden University Medical Center, The Netherlands; **Nick Hill**, Tufts New England Medical Center; **Stephen Holgate**, University of Southampton, UK; **Taimadge E. King Jr**, University of California San Francisco, USA; **Bart Lambrecht**, University of Ghent, Belgium; **Jim Loyd**, Vanderbilt University, USA; **Fernando J. Martinez**, University of Michigan, USA; **Benoit Nemery**, Catholic University Leuven, Belgium; **Laurent Nicod**, Centre Hospitalier Universitaire Vaudois, Switzerland; **Paul O'Byrne**, McMaster University, Canada; **Michael I. Polkey**, Royal Brompton Hospital, UK; **Klaus F. Rabe**, Krankenhaus Großhansdorf, Germany; **Marlene Rabinovitch**, Stanford University, USA; **Lewis J. Rubin**, University of California San Diego, USA; **Werner Seeger**, University of Giessen, Germany; **Nikolaos M. Siafakas**, University of Crete, Greece; **Yves Sibille**, Université Catholique de Louvain, Belgium; **Anita K. Simonds**, Royal Brompton Hospital, UK; **Gérald Simonneau**, Université Paris-Sud, France; **Peter D. Sly**, University of Queensland, Australia; **Peter J. Sterk**, University of Amsterdam, The Netherlands.

EDITORIAL BOARD MEMBERS

Fekri Abroug, CHU F. Bourguiba, Tunisia; **Ibrahim Abubakar**, Health Protection Agency, UK; **Ian Adcock**, Imperial College London, UK; **Yochai Adir**, University of Haifa, Israel; **Eric Austin**, Vanderbilt University, USA; **Claus Bachert**, University of Ghent, Belgium; **Joan Barbera**, University of Barcelona, Spain; **Neil C. Barnes**, London Chest Hospital, UK; **Richard Beasley**, Medical Research Institute of New Zealand, New Zealand; **Raymond L. Benza**, Allegheny General Hospital, USA; **Harm Jan Bogaard**, VU University Medical Center, The Netherlands; **Pierre-Yves Brillot**, Université Paris-Nord, France; **Pierre-Régis Burgel**, Université Paris-Descartes, France; **Carlos Camargo**, Massachusetts General Hospital, USA; **Jorge Caneva**, Fundacion Favaloro, Argentina; **Giuseppe Cardillo**, University La Sapienza, Italy; **Thomas Casale**, Creighton University School of Medicine, USA; **Dan Chambers**, University of Queensland, Australia; **Daniela Maria Cirillo**, San Raffaele Scientific Institute, Italy; **Hal Collard**, University of California San Francisco, USA; **Alvaro Cruz**, Faculdade de Medicina da Bahia, Brazil; **Sven-Erik Dahlén**, Karolinska Institute, Sweden; **Paul De Leyn**, UZ Leuven, Belgium; **Frances de Man**, VU University Medical Center, The Netherlands; **Laurence Dewachter**, Free University of Brussels, Belgium; **Roland Diel**, Hannover Medical School, Germany; **Gavin C. Donaldson**, University College London, UK; **Peter Dorfmueller**, Université Paris-Sud, France; **Sy Duong Quy**, University of Dalat, Vietnam; **Elie Fadel**, Université Paris-Sud, France; **Harrison W. Farber**, Boston University, USA; **Sean Gaine**, University of Dublin, Ireland; **Nazzareno Galiè**, University of Bologna, Italy; **Ardeshir Ghofrani**, University of Giessen, Germany; **Adam Giangreco**, University College London, UK; **Mardi Gomberg-Maitland**, University of Chicago Hospitals, USA; **Marie Jose Goumans**, Leiden Medical Center, The Netherlands; **Bogdan Grigoriu**, University of Medicine and Pharmacy Iasi, Romania; **Christophe Guignabert**, Université Paris-Sud, France; **Francois Haddad**, Stanford University, USA; **Hamida Hammad**, University of Ghent, Belgium; **Agnès Hamzaoui**, Hôpital Abderrahmen Mami, Tunisia; **Sergio Harari**, Ospedale San Giuseppe, Italy; **Craig Hersh**, Harvard University, USA; **Carlos Jardim**, University of Sao Paulo, Brazil; **Zhi Cheng Jing**, Shanghai Pulmonary Hospital, Tongji University, China; **Adrien Kettaneh**, Université Pierre et Marie Curie, France; **Martin Kolb**, McMaster University, Canada; **Irene Lang**, University of Vienna, Austria; **Mareike Lankeit**, Georg-August University of Goettingen, Germany; **Philipp Latzin**, University of Bern, Switzerland; **Pierantonio Laveneziana**, Université Pierre et Marie Curie, France; **Wei Shen Lim**, Nottingham City Hospital, UK; **Jane Lucas**, University of Southampton, UK; **Antoine Magnan**, Université de Nantes, France; **Toby Maher**, Imperial College London, UK; **Marcus Mail**, University of Heidelberg, Germany; **Tom Marrie**, Dalhousie University, Canada; **Pierre Massion**, Vanderbilt University, USA; **Steve Mathai**, Johns Hopkins University School of Medicine, USA; **Thais Mauad**, Universidade de São Paulo, Brazil; **Vallerie McLaughlin**, University of Michigan, USA; **Rosario Menéndez Villanueva**, University Hospital La Fe, Spain; **David Montani**, Université Paris-Sud, France; **Luc Mouthon**, Université Paris-Descartes, France; **Matt Naughton**, Monash University, Australia; **J. Alberto Neder**, Federal University of Sao Paulo, Brazil; **Mark R. Nicolls**, Stanford University, USA; **Dermot O'Callaghan**, University of Dublin, Ireland; **Neil Pearce**, London School of Hygiene and Tropical Medicine, UK; **Frédéric Perros**, Université Paris-Sud, France; **Charles Pilette**, Cliniques Universitaires St-Luc, Belgium; **Seva Polotsky**, Johns Hopkins University, USA; **Ioana Preston**, Tufts Medical Center, USA; **Steeve Provencher**, University Laval, France; **Thomas Pulido**, University of Mexico, Mexico; **Helen K. Reddel**, Woolcock Institute of Medical Research, Australia; **Bruce K. Rubin**, Virginia Commonwealth University School of Medicine, USA; **Dermot Ryan**, University of Edinburgh, UK; **Bernd Schmeck**, Marburg University, Germany; **Terry Seemungal**, University of West Indies, Trinidad and Tobago; **Ashok Shah**, University of Delhi, India; **Torben Sigsgaard**, University of Aarhus, Denmark; **Olivier Sitbon**, Université Paris-Sud, France; **Donald D. Sin**, St. Paul's Hospital, Canada; **Stephen J. Tili**, King's College, UK; **Adam Torbicki**, University of Warsaw, Poland; **Dominique Valeyre**, Université Paris-Nord, France; **Mareike J. Van der Werf**, European Centre for Disease Prevention and Control, Sweden; **Grant Waterer**, University of Western Australia, Australia; **Kenneth Whyte**, University of Auckland, New Zealand; **John Wilson**, Monash University, Australia; **Paul Wolters**, University of California San Francisco, USA; **Pan-Chyr Yang**, National Taiwan University College of Medicine, Taiwan; **Spiros Zakynthinos**, Evangelismos Hospital, Greece; **Jean-Pierre Zellweger**, Swiss Lung Association, Switzerland.

PUBLICATIONS OFFICE STAFF

Fiona Marks
Alyson Adam
David Sadler

Catherine Pumphrey
Rachel White
Claire Turner

Jonathan Hansen
Matthew Broadhead
Lee Dodd

Sarah Hill
Gill Archer
Kay Sharpe

AIMS & SCOPE

The European Respiratory Journal (ERJ), the official Journal of the European Respiratory Society, publishes, in the English language, clinical and experimental work dealing with all aspects of respiratory medicine. In addition to original material, the *ERJ* prints Editorials and Reviews, as well as Letters and Correspondence. This Journal is abstracted/indexed in: Ad Referendum, ADONIS, Biological Abstracts/BIOSIS, Chemical Abstracts, Current Contents: Life Sciences, Current Contents: Clinical Medicine, Elsevier BIOBASE/Current Awareness in Biological Sciences, EMBASE/Excerpta Medica, Index Medicus/MEDLINE, Medical Documentation Service, Research Alert, Science Citation Index, SciSearch, SIC Data Base and CABI Global Health.

SUBSCRIPTIONS

ERJ is published monthly by the European Respiratory Society (ERS). Twelve issues are published annually in two volumes of six issues each. The volumes for 2013 are Volumes 41 and 42.

Subscription rates for institutions (Volumes 41 & 42, 2013): £686.00 online only, £834.00 print and online; US\$1,303.00 online only, US\$1,585.00 print and online in North America. Subscription rates include air economy postage. Subscriptions are payable in advance.

Subscribers within the European Union must provide their VAT (Value Added Tax) number or add VAT to the subscription rate at the rate prevailing in their own country. Subscriptions are managed on behalf of the ERS by: Maney Publishing, Suite 1C, Joseph's Well, Hanover Walk, Leeds LS3 1AB, UK (fax: +44 (0)113 386 8178; E-mail: subscriptions@maney.co.uk) or: Maney Publishing North America, 875 Massachusetts Avenue, 7th Floor, Cambridge, MA 02139, USA (tel: (toll-free) +1 (0)866 297 5154; fax: +1 (0)617 354 6875; E-mail: maney@maneyusa.com). All orders, payments, and claims for missing issues should be sent to Maney Publishing or to any subscription agent.

ONLINE ACCESS

All subscribers have online access to the full text of each issue as part of their subscription via www.erj.ersjournals.com. Members of the ERS receive the *ERJ* as part of their membership.

INSTRUCTIONS TO AUTHORS/GENERAL ENQUIRIES

Before submitting an article to the *ERJ*, please read and carefully follow the instructions to authors, which are available at www.erj.ersjournals.com

All manuscripts must be submitted electronically using the online submission system at <http://mc.manuscriptcentral.com/erj>

If you experience problems, please contact the **Submission Helpline direct on +44 (0) 114 2672864** or contact **Gill Archer (gill.archer@ersj.org.uk)** the manuscript submissions coordinator.

All *ERJ* business matters should be addressed to: Elin Reeves, European Respiratory Society Publications Office, 442 Glossop Road, Sheffield, S10 2PX, UK.

Fax: +44 (0) 114 266 5064 | E-mail: elin.reeves@ersj.org.uk

All permission requests should be sent to permissions@ersj.org.uk

Reprint and translation enquiries should be sent to admin@ersj.org.uk

For all enquiries concerning advertising please e-mail steve.sealy@ersnet.org

ENVIRONMENTAL STATEMENT

The publisher ensures that the text paper and cover board used have met acceptable environmental accreditation standards.

PRESS RELEASES

ERJ press releases can be found online at www.ersjournals.com/site/misc/presspack.xhtml

Articles with press releases are indicated as such on these contents pages.

© 2013 ERS. Authorisation to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted for libraries and other users registered with the Copyright Clearance Center (CCC). Please go to www.copyright.com or phone USA (978) 750 8400. UK customers should go to www.cla.co.uk. All other rights, including microfilm, electronic and/or copying reserved.

European Respiratory Journal, 0903-1936, is published monthly by the European Respiratory Society, 442 Glossop Road, Sheffield, S10 2PX, UK. Airfreight and mailing in the USA by agent named Air Business Ltd, c/o Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA. Periodicals postage paid at Jamaica NY 11434. US Postmaster: send address changes to European Respiratory Journal, Air Business Ltd, c/o Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA. Subscription records are maintained at European Respiratory Society, 442 Glossop Road, Sheffield, S10 2PX, UK. Air Business Ltd is acting as our mailing agent.

Typesetting by H. Charlesworth & Co. Ltd.
Printed in UK by Page Bros (Norwich) Ltd.

"The advertiser shall be liable for the content of any of its advertisements published according to its instructions. The advertiser shall indemnify and hold harmless the European Respiratory Society against and from any and all claims, damages, liabilities, costs and expenses whatsoever, including reasonable counsel fees, arising from the content of any of its advertisements."



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



EDITORIALS

- 1** **The ambition of the *European Respiratory Journal***
Marc Humbert
- 3** **Key roles of Src family tyrosine kinases in the integrity of the pulmonary vascular bed**
Christophe Guignabert and David Montani
- 5** **Clinical stability and switch therapy in hospitalised patients with community-acquired pneumonia: are we there yet?**
Julio A. Ramirez
- 7** **Physiology in respiratory medicine**
Robert Naeije, Denis Chemla, Anh Tuan Dinh-Xuan and Anton Vonk Noordegraaf
- 8** **Chronic thromboembolic pulmonary hypertension: advances from bench to patient management**
Joanna Pepke-Zaba, Marius M. Hoeper and Marc Humbert

IN MEMORIAM

- 10** **Chris T. Bolliger: keep him in your mind**
Felix J.F. Herth

LAUNCHING NEW STUDIES

- 12** **A trial of beclomethasone/formoterol in COPD using EXACT-PRO to measure exacerbations**
Dave Singh, Jorg Kampschulte, Jadwiga A. Wedzicha, Paul W. Jones, Géraldine Cohuet, Massimo Corradi, Tim Higenbottam, Stefano Petruzzelli and Jørgen Vestbo

ORIGINAL ARTICLES

Clinical practice

- 18** **A prospective trial evaluating the role of mesothelin in undiagnosed pleural effusions**
Clare E. Hooper, Anna J. Morley, Paul Virgo, John E. Harvey, Brennan Kahan and Nick A. Maskell

Environmental lung disease

- 25** **Reduced lung function due to biomass smoke exposure in young adults in rural Nepal**
Om P. Kurmi, Graham S. Devereux, W. Cairns S. Smith, Sean Semple, Markus F.C. Steiner, Padam Simkhada, Kin-Bong Hubert Lam and Jon G. Ayres

COPD

- 31** **$\text{A}\alpha\text{-Val}^{360}$: a marker of neutrophil elastase and COPD disease activity**
Richard I. Carter, Michael J. Ungurs, Richard A. Mumford and Robert A. Stockley

Chronic respiratory failure

- 39** **Home mechanical ventilation in Australia and New Zealand**
Daniel J. Garner, David J. Berlowitz, James Douglas, Nick Harkness, Mark Howard, Nigel McArdle, Matthew T. Naughton, Alister Neill, Amanda Piper, Aeneas Yeo and Alan Young

Asthma

- 46** **Inhibition of the asthmatic allergen challenge response by the CRTH2 antagonist OC000459**
Dave Singh, Paul Cadden, Michael Hunter, Lisa Pearce Collins, Mike Perkins, Roy Pettipher, Elizabeth Townsend, Shân Vinall and Brian O'Connor

- 53** **Early detection of asthma exacerbations by using action points in self-management plans**
Persijn J. Honkoop, D. Robin Taylor, Andrew D. Smith, Jiska B. Snoeck-Stroband and Jacob K. Sont

Cystic fibrosis

- 60** **Lung function from infancy to preschool in a cohort of children with cystic fibrosis**
Lyndia C. Brumback, Stephanie D. Davis, Gwendolyn S. Kerby, Margaret Kloster, Robin Johnson, Robert Castile, Peter W. Hiatt, Meehan Hart and Margaret Rosenfeld

- 67** **Oral contraceptives do not appear to affect cystic fibrosis disease severity**
Natalie G. Kernan, Eric W.F.W. Alton, Paul Cullinan, Uta Griesenbach and Diana Bilton

ORIGINAL ARTICLES (CONT.)

Sleep-related disorders

- 74 **Dissociation of electromyogram and mechanical response in sleep apnoea during propofol anaesthesia**
Yaniv Dotan, Giora Pillar, Naveh Tov, Ron Oliven, Uri Steinfeld, Luis Gaitini, Majed Odeh, Alan R. Schwartz and Arie Oliven

Pulmonary vascular disease

- 85 **Src tyrosine kinase is crucial for potassium channel function in human pulmonary arteries**
Chandran Nagaraj, Bi Tang, Zoltán Bálint, Malgorzata Wygrecka, Andelko Hrzenjak, Grazyna Kwapiszewska, Elvira Stacher, Joerg Lindenmann, E. Kenneth Weir, Horst Olschewski and Andrea Olschewski
- 96 **Efficacy, safety and pharmacokinetics of bosentan in portopulmonary hypertension**
Laurent Savale, Romain Magnier, Jérôme Le Pavec, Xavier Jaïs, David Montani, Dermot S. O'Callaghan, Marc Humbert, Jasper Dingemans, Gérald Simonneau and Olivier Sitbon
- 104 **Thyroid hormone is highly permissive in angioproliferative pulmonary hypertension in rats**
Aysar Al Hussein, Gianluca Bagnato, Laszlo Farkas, Jose Gomez-Arroyo, Daniela Farkas, Shiro Mizuno, Donatas Kraskauskas, Antonio Abbate, Benjamin Van Tassel, Norbert F. Voelkel and Harm Jan Bogaard

Sarcoidosis

- 115 **Granulomatosis-associated common variable immunodeficiency disorder: a case-control study versus sarcoidosis**
Diane Bouvry, Luc Mouthon, Pierre-Yves Brillet, Marianne Kambouchner, Jean-Pierre Ducroix, Vincent Cottin, Julien Haroche, Jean-François Viallard, Romain Lazor, François Lebarry, Abdellatif Tazi, Benoît Wallaert, Amar Smail, Jean-Luc Pellegrin, Hilario Nunes, Zahir Amoura, Jean-François Cordier, Dominique Valeyre, Jean-Marc Naccache and the Groupe Sarcoidose Francophone

Pulmonary infections

- 123 **Barriers to an early switch from intravenous to oral antibiotic therapy in hospitalised patients with CAP**
Madelon F. Engel, Douwe F. Postma, Marlier E.J.L. Hulscher, Ferdinand Teding van Berkhout, Marielle H. Emmelot-Vonk, Sanjay Sankatsing, Carlo A.J.M. Gaillard, Anke H.W. Bruns, Andy I.M. Hoepelman and Jan Jelrik Oosterheert
- 131 **The role of mannose-binding lectin in pneumococcal infection**
M. Isabel García-Laorden, Felipe Rodríguez de Castro, Jordi Solé-Violán, Antoni Payeras, M. Luisa Briones, Luis Borderías, Javier Aspa, José Blanquer, Olga Rajas, J. Alberto Marcos-Ramos, Estefanía Herrera-Ramos, Miguel A. García-Bello, Judith Noda, José M. Ferrer, Jordi Rello and Carlos Rodríguez-Gallego

Tuberculosis



- 140 **Contact investigation for tuberculosis: a systematic review and meta-analysis**
Gregory J. Fox, Simone E. Barry, Warwick J. Britton and Guy B. Marks

Respiratory critical care

- 157 **Effectiveness of inspiratory pressure-limited approach to mechanical ventilation in septic patients**
Ignacio Martin-Loeches, Candelaria de Haro, R. Phillip Dellinger, Ricard Ferrer, Gary S. Phillips, Mitchell M. Levy and Antonio Artigas

Acute lung injury

- 165 **Iloprost improves endothelial barrier function in lipopolysaccharide-induced lung injury**
Anna A. Birukova, Tinghuai Wu, Yufeng Tian, Angelo Meliton, Nicolene Sarich, Xinyong Tian, Alan Leff and Konstantin G. Birukov

Lung cancer

- 177 **Value of flexible bronchoscopy in the pre-operative work-up of solitary pulmonary nodules**
Carsten Schwarz, Nicolas Schönfeld, Roland C. Bittner, Thomas Mairinger, Holger Rüssmann, Torsten T. Bauer, Dirk Kaiser, Robert Loddenkemper

Paediatric lung disease

- 183 **Exhaled breath profiling in diagnosing wheezy preschool children**
Kim D.G. van de Kant, Joep J.B.N. van Berkel, Quirijn Jöbsis, Valéria Lima Passos, Ester M.M. Klaassen, Linda van der Sande, Onno C.P. van Schayck, Johan C. de Jongste, Frederik Jan van Schooten, Eduard Derks, Edward Dompeling and Jan W. Dallinga

Exhaled biomarkers

- CME article 189 **Factors associated with elevated exhaled nitric oxide fraction in infants with recurrent respiratory symptoms**
Anne Kotaniemi-Syrjänen, L. Pekka Malmberg, Kristiina Malmström, Anna S. Pelkonen and Mika J. Mäkelä

Mechanisms of lung disease

- 195 **Dimethylfumarate inhibits CXCL10 via haem oxygenase-1 in airway smooth muscle**
Petra Seidal, Katrin E. Hostettler, J. Margaret Hughes, Micheal Tamm and Micheal Roth

REVIEW

- 203** **CFTR biomarkers: time for promotion to surrogate end-point?**
K. De Boeck, L. Kent, J. Davies, N. Derichs, M. Amaral S.M. Rowe, P. Middleton, H. de Jonge, I. Bronsveld, M. Wilschanski, P. Melotti, I. Danner-Boucher, S. Boerner, I. Fajac, K. Southern, R.A. de Nooijer, A. Bot, Y. de Rijke, E. de Wachter, T. Leal, F. Vermeulen, M.J. Hug, G. Rault, T. Nguyen-Khoa, C. Barreto, M. Proesmans and I. Sermet-Gaudelus on behalf of the European Cystic Fibrosis Society Clinical Trial Network Standardisation Committee

SERIES

- SERIES "PHYSIOLOGY IN RESPIRATORY MEDICINE"**
Edited by R. Naeije, D. Chemla, A. Vonk Noordegraaf and A.T. Dinh-Xuan
Number 1 in this Series
- 217** **The transpulmonary pressure gradient for the diagnosis of pulmonary vascular disease**
Robert Naeije, Jean-Luc Vachiery, Patrick Yerly and Rebecca Vanderpool
- SERIES "CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION"**
Edited by J. Pepke-Zaba, M.M. Hoeper and M. Humbert
Number 1 in this Series
- 224** **Vascular and right ventricular remodelling in chronic thromboembolic pulmonary hypertension**
Marion Delcroix, Anton Vonk Noordegraaf, Elie Fadel, Irene Lang, Gérald Simonneau and Robert Naeije

LETTERS

- 233** **Assessment of asthma control by children and parents**
Sandra Voorend-van Bergen, Hein Brackel, Daan Caudri, Johan de Jongste and Mariëlle Pijnenburg
- 234** **Chronic beryllium disease: azathioprine as a possible alternative to corticosteroid treatment**
Hélène Salvator, Thomas Gille, Aurélie Hervé, Camille Bron, Christine Lamberto and Dominique Valeyre
- 236** **Do tertiary paediatric hospitals deal with the same spectrum of paediatric pulmonary hypertension as multicentre registries?**
Marilyne Lévy, David Celermajer, Isabelle Szezepanski, Younes Boudjemline and Damien Bonnet
- 239** **The anti-IL-17A antibody secukinumab does not attenuate ozone-induced airway neutrophilia in healthy volunteers**
Anne Kirsten, Henrik Watz, Frauke Pedersen, Olaf Holz, Rachel Smith, Gerard Bruin, Stephan Koehne-Voss, Helgo Magnussen and David A. Waltz
- 241** **Cough frequency in health and disease**
Nadia Yousaf, William Monteiro, Sergio Matos, Surinder S. Biring and Ian D. Pavord
- 243** **Pleuroparenchymal fibroelastosis as a manifestation of chronic lung rejection?**
Takako Hirota, Masaki Fujita, Takemasa Matsumoto, Takao Higuchi, Takeshi Shiraishi, Masato Minami, Meinoshin Okumura, Kazuki Nabeshima and Kentaro Watanabe
- 246** **Sarcoidosis complicating anti-cytotoxic T-lymphocyte-associated antigen-4 monoclonal antibody biotherapy**
Clare Tissot, Ania Carsin, Nathalie Freymond, Yves Pacheco and Gilles Devouassoux

CORRESPONDENCE

- 248** **Significance of sputum purulence to guide antibiotic therapy in exacerbations of COPD**
Deepak Aggarwal, Prasanta R. Mohapatra and Phiza Aggarwal; Néstor Soler and Antoni Torres
- 249** **Who and what should we rely on in early diagnosis of idiopathic pulmonary fibrosis?**
Xiaoqian Chen, Xiaoju Zhang, Xiu Li and Zheng Wang; Vincent Cottin and Jean-François Cordier
- 252** **ERRATUM**
- f,j,n,p,q** **MEETING CALENDAR**