



Journal of the British Thoracic Society

Impact Factor: 8.272

**Editors-in-Chief**

N Hart (UK)  
G Jenkins (UK)  
AR Smyth (UK)

**Deputy Editors**

N Kaminski (USA)  
M Rosenfeld (USA)

**Associate Editors**

D Baldwin (UK)	J-L Pepin (France)
R Chambers (UK)	M Polkey (UK)
T Coleman (UK)	J Quint (UK)
GJ Criner (USA)	N Rahman (UK)
J Davies (UK)	K Robinson (USA)
A Floto (UK)	S Shaheen (UK)
M Griffiths (UK)	R Stevens (USA)
L Heaney (UK)	A Vonk Noordegraaf (The Netherlands)
N Hopkinson (UK)	C Wainwright (Australia)
S Janes (UK)	T Wilkinson (UK)
B Kampman (UK)	P Wolters (USA)
B Mokhelesi (USA)	
P O'Byrne (Canada)	

**Statistical Editors**

A Douiri (UK)  
C Flach (UK)  
C Jackson (UK)  
S Stanojevic (USA)  
R Szczesniak (USA)  
B Wagner (USA)  
Y Wang (UK)

**Journal Club Editor**

P Murphy (UK)

**President, British Thoracic Society**

Professor E Chilvers

**Editorial Office**

Thorax, BMA House, Tavistock Square,  
London WC1H 9JR, UK

T: +44 (0)20 7383 6373

E: [thorax@bmj.com](mailto:thorax@bmj.com)

Twitter: @ThoraxBMJ

ISSN: 0040-6376 (print)

ISSN: 1468-3296 (online)

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

Thorax 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.

Thorax 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, the British Thoracic Society 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 Thorax 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:** © 2018 BMJ Publishing Group Ltd and the British Thoracic Society. 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 Thorax.

Thorax is published by BMJ Publishing Group Ltd, typeset by Exeter Premedia Services Private Ltd, Chennai, India and printed in the UK on acid-free paper.

Thorax (ISSN No: 0040-6376) 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 Thorax, Air Business LTD, c/o Worldnet Shipping Inc., 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA.

**Editorials**

**1** Imaging pathophysiological changes in the lungs in IPF with xenon magnetic resonance imaging  
*J M Wild*

**2** How do we improve training in pulmonary physiology and the interpretation of lung function tests?  
*G Phillips*

**4** Quantification of CT bronchiectasis and its relationship to ventilation in cystic fibrosis  
*T Rosenow*

**5** NERO: a pilot study but important step towards comprehensive management of obesity hypoventilation syndrome  
*J-C Borel, A L Borel, A J Piper*

**Critical care**

**7** Perspectives of survivors, families and researchers on key outcomes for research in acute respiratory failure  
*V D Dinglas, C M Chessare, W E Davis, A Parker, L A Friedman, E Colantuoni, C O Bingham, A E Turnbull, D M Needham*

**Cystic fibrosis**

**13** Respiratory viruses in healthy infants and infants with cystic fibrosis: a prospective cohort study  
*I Korten, E Kieninger, S Klenja, I Mack, N Schläpfer, M T Barbani, N Regamey, C E Kuehni, M Hilty, U Frey, M Gorgievski, C Casaulta, P Latzin*

**Interstitial lung disease**

**21** Using hyperpolarized <sup>129</sup>Xe MRI to quantify regional gas transfer in idiopathic pulmonary fibrosis  
*J M Wang, S H Roberson, Z Wang, M He, R S Virgincar, G M Schrank, R M Smigla, T G O'Riordan, J Sundry, L Ebner, C R Rackley, P McAdams, B Driehuys, for the SCILD and BILD study groups*

**Rehabilitation**

**29** Comparison of a structured home-based rehabilitation programme with conventional supervised pulmonary rehabilitation: a randomised non-inferiority trial  
*E J Horton, K E Mitchell, V Johnson-Warrington, L D Apps, L Sewell, M Morgan, R S Taylor, S J Singh*

**Respiratory epidemiology**

**37** Prevalence of asthma-like symptoms with ageing  
*D Jarvis, R Newson, C Janson, A Corsico, J Heinrich, J M Anto, M J Abramson, A-M Kirsten, J P Zock, R Bono, P Demoly, B Leynaert, C Raheerison, I Pin, T Gislason, R Jogi, V Schlunssen, C Svanes, J Watkins, J Weyler, A Pereira-Vega, I Urrutia, J A Gullón, B Forsberg, N Probst-Hensch, H M Boezen, J Martinez-Moratalla Rovira, S Accordini, R de Marco, P Burney*

**Respiratory infection**

**49** Pseudomonas aeruginosa LasB protease impairs innate immunity in mice and humans by targeting a lung epithelial cystic fibrosis transmembrane regulator-IL-6-antimicrobial-repair pathway  
*V Saint-Criq, B Villeret, F Bastaert, S Kheir, A Hatton, A Cazes, Z Xing, I Sermet-Gaudelus, I Garcia-Verdugo, A Edelman, J-M Sallenave*

**Sleep**

**62** Nutrition and Exercise Rehabilitation in Obesity hypoventilation syndrome (NERO): a pilot randomised controlled trial  
*S Mandal, E-S Suh, R Harding, A Vaughan-France, M Ramsay, B Connolly, D E Bear, H MacLaughlin, S A Greenwood, M I Polkey, M Elliott, T Chen, A Douiri, J Moxham, P B Murphy, N Hart*

**Tuberculosis**

**70** Comorbidities, mortality and causes of death among patients with tuberculosis in Denmark 1998-2010: a nationwide, register-based case-control study  
*A Fløe, O Hilberg, C Wejse, R Ibsen, A Løkke*

**MORE CONTENTS ►**

**Cover caption: Central and posterior coronal slices of ventilation barrier uptake and RBC transfer, binning maps and CT images in one healthy subject and four subjects with IPF (see Wang J M, et al., page 24).**



EDITOR'S CHOICE

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



OPEN ACCESS

This article has been made freely available online under the BMJ Journals Open Access scheme.

See <http://authors.bmj.com/open-access/>



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

<http://publicationethics.org/>



When you have finished with this magazine please recycle it.

**Research letters**

- 78** Does training respiratory physicians in clinical respiratory physiology and interpretation of pulmonary function tests improve core knowledge?  
*M Patout, L Sesé, T Gille, B Coiffard, S Korzeniewski, E Lhuillier, A Pradel, C Tardif, A Chambellan, C Straus, S Matecki, T Perez, L Thiberville, A Didier*
- 82** The quantitative link of lung clearance index to bronchial segments affected by bronchiectasis  
*S Verbanck, G G King, W Zhou, A Miller, C Thamrin, D Schuermans, B Ilsen, C W Ernst, J de Mey, W Vincken, E Vanderhelst*
- 85** Novel imaging detailing the origins of a pneumothorax  
*K Nakanishi, H Goto, T Ito, Y Nagata, S Hayashi, T Ishihara*
- 88** One evidence base; three stories: do opioids relieve chronic breathlessness?  
*M Ekström, S Bajwah, J M Bland, D C Currow, J Hussain, M J Johnson*

**Chest clinic****Case based discussions**

- 91** Empyema necessitans and a persistent air leak associated with rupture of an anaerobic lung abscess due to bacteroides  
*V Sharma, K G Blyth*

**Images in Thorax**

- 94** Herpes simplex lesion mimicking left upper lobe bronchial tumour  
*G C Dantas, H Shoji, C Hoelz, M Buarque d G Funari, G Szarf*
- 96** Extrathoracic hyperinflation  
*M Bruyneel, V Ninane*
- 97** Vocal fold paralysis on positron emission tomography-CT  
*C Ma, Z A K Frosch, B Overmoyer, A Z Cooper*

**Journal club summaries**

- 100** What's hot that the other lot got  
*N M Shah*