



## ERS guidelines on the diagnosis and treatment of chronic cough in adults and children

Alyn H. Morice<sup>1</sup>, Eva Millqvist<sup>2</sup>, Kristina Bieksiene<sup>3</sup>, Surinder S. Birring<sup>4,5</sup>, Peter Dicpinigaitis<sup>6</sup>, Christian Domingo Ribas<sup>7</sup>, Michele Hilton Boon <sup>8</sup>, Ahmad Kantar <sup>9</sup>, Kefang Lai<sup>10,21</sup>, Lorcan McGarvey<sup>11</sup>, David Rigau<sup>12</sup>, Imran Satia<sup>13,14</sup>, Jacky Smith<sup>15</sup>, Woo-Jung Song <sup>16,22</sup>, Thomy Tonia<sup>17</sup>, Jan W. K. van den Berg<sup>18</sup>, Mirjam J.G. van Manen<sup>19</sup> and Angela Zacharasiewicz<sup>20</sup>

Affiliations: <sup>1</sup>Respiratory Research Group, Hull York Medical School, University of Hull, Hull, UK. <sup>2</sup>Dept of Internal Medicine/Respiratory Medicine and Allergology, Sahlgrenska University Hospital, University of Gothenburg, Gothenburg, Sweden. <sup>3</sup>Dept of Pulmonology, Lithuanian University of Health Sciences, Kaunas, Lithuania. <sup>4</sup>Centre for Human and Applied Physiological Sciences, School of Basic and Medical Biosciences, Faculty of Life Sciences and Medicine, King's College London, London, UK. <sup>5</sup>Dept of Respiratory Medicine, King's College Hospital, London, UK. <sup>6</sup>Albert Einstein College of Medicine, Montefiore Medical Center, Bronx, NY, USA. <sup>7</sup>Pulmonary Service, Corporació Sanitària Parc Taulí (Sabadell), Dept of Medicine, Universitat Autònoma de Barcelona (UAB), Barcelona, Spain. <sup>8</sup>MRC/CSO Social and Public Health Sciences Unit, University of Glasgow, Glasgow, UK. <sup>9</sup>Pediatric Cough and Asthma Center, Istituti Ospedalieri Bergamaschi, University and Research Hospitals, Bergamo, Italy. <sup>10</sup>Dept of Clinical Research, State Key Laboratory of Respiratory Disease, Guangzhou Institute of Respiratory Health, First Affiliated Hospital of Guangzhou Medical University, Guangzhou, China. <sup>11</sup>Centre for Experimental Medicine, School of Medicine, Dentistry and Biomedical Sciences, Queen's University Belfast, Belfast, UK. <sup>12</sup>Iberoamerican Cochrane Centre, Barcelona, Spain. <sup>13</sup>Dept of Medicine, Division of Respirology, McMaster University, Hamilton, ON, Canada. <sup>14</sup>University of Manchester, Division of Infection, Immunity and Respiratory Medicine, Manchester Academic Health Science Centre, Manchester, UK. <sup>15</sup>University of Manchester, Division of Infection, Immunity and Respiratory Medicine, Manchester University NHS Foundation Trust, Manchester, UK. <sup>16</sup>Airway Sensation and Cough Research Laboratory, Dept of Allergy and Clinical Immunology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea. <sup>17</sup>Institute of Social and Preventive Medicine, University of Bern, Bern, Switzerland. <sup>18</sup>Dept of Respiratory Medicine, Hoestpoli Isala hospital, Zwolle, The Netherlands. <sup>19</sup>Dept of Respiratory Medicine, Erasmus University Medical Center, Rotterdam, The Netherlands. <sup>20</sup>Dept of Pediatrics, Teaching Hospital of the University of Vienna, Wilhelminen Hospital, Vienna, Austria.<sup>21</sup>Representing the Chinese Thoracic Society. <sup>22</sup>Representing the Asia Pacific Association of Allergy, Asthma and Clinical Immunology (APAAACI).

**Correspondence**: Alyn H. Morice, Hull York Medical School, University of Hull, Respiratory Research Group, Castle Hill Hospital, Castle Road, Cottingham, East Yorkshire, HU16 5JQ, UK. E-mail: a.h.morice@hull.ac.uk

## @ERSpublications

New ERS guideline on chronic cough details the paradigm shift in our understanding. In adults, cough hypersensitivity has become the overarching diagnosis, and in children, persistent bacterial bronchitis explains most wet cough, changing treatment advice. http://bit.ly/2kycX8D

**Cite this article as:** Morice AH, Millqvist E, Bieksiene K, *et al.* ERS guidelines on the diagnosis and treatment of chronic cough in adults and children. *Eur Respir J* 2020; 55: 1901136 [https://doi.org/10.1183/13993003.01136-2019].

This single-page version can be shared freely online.

ABSTRACT These guidelines incorporate the recent advances in chronic cough pathophysiology, diagnosis and treatment. The concept of cough hypersensitivity has allowed an umbrella term that explains the exquisite sensitivity of patients to external stimuli such a cold air, perfumes, smoke and bleach. Thus, adults with chronic cough now have a firm physical explanation for their symptoms based on vagal

Copyright ©ERS 2020

afferent hypersensitivity. Different treatable traits exist with cough variant asthma (CVA)/eosinophilic bronchitis responding to anti-inflammatory treatment and non-acid reflux being treated with promotility agents rather the anti-acid drugs. An alternative antitussive strategy is to reduce hypersensitivity by neuromodulation. Low-dose morphine is highly effective in a subset of patients with cough resistant to other treatments. Gabapentin and pregabalin are also advocated, but in clinical experience they are limited by adverse events. Perhaps the most promising future developments in pharmacotherapy are drugs which tackle neuronal hypersensitivity by blocking excitability of afferent nerves by inhibiting targets such as the ATP receptor (P2X3). Finally, cough suppression therapy when performed by competent practitioners can be highly effective. Children are not small adults and a pursuit of an underlying cause for cough is advocated. Thus, in toddlers, inhalation of a foreign body is common. Persistent bacterial bronchitis is a common and previously unrecognised cause of wet cough in children. Antibiotics (drug, dose and duration need to be determined) can be curative. A paediatric-specific algorithm should be used.