



Introduction

Johanna Feary^{1,2}, Hille Suojalehto³ and Paul Cullinan^{1,2}

 @ERSpublications

The *ERS Monograph on Occupational and Environmental Lung Disease* includes chapters on global view, many old and some newer diseases, as well as diving, high altitude and outdoor and indoor air. Useful for general respiratory physicians and experts alike. <https://bit.ly/3n0d3RK>

Respiratory clinicians lucky enough to work in the field of occupational lung disease(s) enjoy an endlessly fascinating specialty. Rarely a week goes by without them encountering either an entirely new condition or a familiar one in a new setting, a reflection largely of seemingly ceaseless developments in industry and in employment patterns. This *Monograph* will, we hope, not only educate but also enthuse other clinicians to take an increasing interest in the subject. It has been designed for use by the general respiratory physician sitting in a clinic but will also be of sufficient interest to be picked up and read as a standalone text.

We are of the firm belief that occupation can be relevant and should at least be considered in most subspecialties of respiratory medicine, and that all respiratory physicians should be aware of the spectrum of diseases caused by exposures encountered at work. Often neglected in training programmes, we are passionate about increasing the profile of occupational lung diseases.

The specialty has its own complexities. Most clinical practice involves just two sets of actors, the patient and their health carers. In occupational disease, the cast is broader and includes, potentially, not only the patient in front of you but also their colleagues – occupational respiratory diseases rarely occur in isolation – their employers, other employers in the same sector, regulators, compensators and (regrettably) lawyers. Juggling the often disparate needs of these players is frequently difficult but never dull. It is also why one should never make an occupational diagnosis without firm evidence. While we endlessly exhort clinicians always to consider occupational issues, at the same time we remind them that false-positive diagnoses can have disastrous and widespread consequences. This is especially true for occupational diseases of short latency, such as asthma, infections and many instances of hypersensitivity pneumonitis that arise soon after a new workplace exposure and while a patient is still in employment. Moreover, a failure to identify a current occupational aetiology will make it difficult – if not impossible – to both manage a patient's condition successfully and to prevent other cases arising.

¹Occupational and Environmental Medicine, National Heart and Lung Institute, Imperial College London, London, UK. ²Dept of Occupational Lung Disease, Royal Brompton Hospital, London, UK. ³Finnish Institute of Occupational Health, Helsinki, Finland.

Correspondence: Johanna Feary, Occupational and Environmental Medicine, Emmanuel Kaye Building, National Heart and Lung Institute, Imperial College London, 1b Manresa Road, London, SW3 6LR, UK. E-mail: j.feary@imperial.ac.uk

Copyright ©ERS 2020. Print ISBN: 978-1-84984-124-5. Online ISBN: 978-1-84984-125-2. Print ISSN: 2312-508X. Online ISSN: 2312-5098.

Occupations and respiratory disease intersect in three ways. First, and most familiar, are those instances where a workplace exposure has given rise, *de novo*, to a condition that would not otherwise have occurred; a truly “occupational” disease. Second, exposures or other circumstances encountered at work may worsen a pre-existing condition – a common example is work-exacerbated asthma, covered in chapter 4 [1]. Third, a pre-existing disease may render a patient relatively or completely unfit to carry out their job. This last, more properly the domain of the occupational health specialist, is brought into sharp relief by an ageing workforce but is a matter also in some specialist areas such as commercial diving (covered in chapter 17 [2]) and work at altitude (chapter 18 [3]).

The *Monograph* opens with a global perspective, a reminder that in a rapidly industrialising world the hazards of work are not only increasing but are too often unregulated and are responsible for literally countless cases of crippling disease (chapter 1) [4]. We then include a chapter that provides an overview on exposure assessment in the workplace (chapter 2) [5]. The chapters that follow cover the full spectrum of occupational respiratory diseases, including: those that are specific to work (such as silicosis in chapter 10 [6], coal worker’s pneumoconiosis in chapter 11 [7] and mesothelioma in chapter 9 [8]); those that can arise from work but are clinically indistinguishable from cases occurring otherwise (COPD in chapter 6 [9], lung cancer in chapter 16 [10] and, arguably, asbestosis in chapter 8 [11]); and those where a workplace aetiology can be determined on a case-by-case basis (occupational asthma in chapter 3 [12]). Finally, we include two chapters on “environmental” exposures. The first, concerned with “outdoor exposures”, includes the often ignored but surely important topic of environmental allergens (chapter 19) [13]. The second weaves a skilful path through the minefield of misconceptions that characterise the issue of “indoor” domestic exposures (chapter 20) [14].

Throughout, we have asked authors to cover the most recent advances in their subject. They have risen to the task with great skill and provided us with a stark reminder that this is a field that never stands still. Few, if any, predicted, for example, that two of the oldest occupational lung diseases would have shown a resurgence in what we had believed to be well-regulated societies. Chapter 10 covers the very recent epidemics of aggressive silicosis among stonemasons and kitchen fitters in countries such as Australia, Spain, Italy and Israel, attributable to the invention of “engineered” stone, a lethal material that could hardly be bettered as a vector for the disease [6]. The depressing return of progressive massive fibrosis in US coalminers, arising from the dysregulation of small mines in the Appalachians, is ably described in chapter 11 [7]. Unpredicted these may have been but unpredictable they were not. After all, we know enough about most occupational lung diseases to prevent them (almost) entirely but, collectively, we lack the will.

We recognise that this *Monograph* has been written primarily from the perspective of a high-income country; that is not to ignore the tremendous importance of occupational and environmental diseases in low- and middle-income countries, but much of the content here is generalisable to all settings.

This *Monograph* was written, reviewed and edited during the height of the first wave of the COVID-19 pandemic. Most of its authors and reviewers were at the forefront of the clinical response and we are especially grateful for their grace and tireless effort in what we know were exhausting times. We thank, too, John R. Hurst (Editor in Chief), Rachel Gozzard (ERS Monograph Managing Editor) and Caroline Ashford-Bentley (ERS Editorial and

Library Services Coordinator) who have, throughout, provided wise and patient counsel and support.

We very much hope you find this *Monograph* both a useful resource and an enjoyable read.

References

1. Walters GI. Work-exacerbated asthma. *In*: Feary J, Suojalehto H, Cullinan P, eds. Occupational and Environmental Lung Disease (ERS Monograph). Sheffield, European Respiratory Society, 2020; pp. 52–69.
2. Glover M. Diving. *In*: Feary J, Suojalehto H, Cullinan P, eds. Occupational and Environmental Lung Disease (ERS Monograph). Sheffield, European Respiratory Society, 2020; pp. 266–282.
3. Hebert CJ, Luks AM. Working at high altitude. *In*: Feary J, Suojalehto H, Cullinan P, eds. Occupational and Environmental Lung Disease (ERS Monograph). Sheffield, European Respiratory Society, 2020; pp. 283–300.
4. Jeebhay MF. The global perspective of occupational lung disease. *In*: Feary J, Suojalehto H, Cullinan P, eds. Occupational and Environmental Lung Disease (ERS Monograph). Sheffield, European Respiratory Society, 2020; pp. 1–18.
5. Basinas I, Tinnerberg H, van Tongeren M. Exposure assessment. *In*: Feary J, Suojalehto H, Cullinan P, eds. Occupational and Environmental Lung Disease (ERS Monograph). Sheffield, European Respiratory Society, 2020; pp. 19–33.
6. Yates DH, Johnson AR. Silicosis and other silica-related lung disorders. *In*: Feary J, Suojalehto H, Cullinan P, eds. Occupational and Environmental Lung Disease (ERS Monograph). Sheffield, European Respiratory Society, 2020; pp. 150–175.
7. Go LHT, Cohen RA. Coal mine dust lung disease. *In*: Feary J, Suojalehto H, Cullinan P, eds. Occupational and Environmental Lung Disease (ERS Monograph). Sheffield, European Respiratory Society, 2020; pp. 176–189.
8. Musk AW, Hui J. Non-malignant pleural disease from asbestos and malignant pleural mesothelioma. *In*: Feary J, Suojalehto H, Cullinan P, eds. Occupational and Environmental Lung Disease (ERS Monograph). Sheffield, European Respiratory Society, 2020; pp. 141–149.
9. Schlünssen V, Würtz ET, Hansen MRH, *et al.* The impact on the aetiology of COPD, bronchitis and bronchiolitis. *In*: Feary J, Suojalehto H, Cullinan P, eds. Occupational and Environmental Lung Disease (ERS Monograph). Sheffield, European Respiratory Society, 2020; pp. 86–103.
10. Cocco P. Lung cancer and occupation. *In*: Feary J, Suojalehto H, Cullinan P, eds. Occupational and Environmental Lung Disease (ERS Monograph). Sheffield, European Respiratory Society, 2020; pp. 252–265.
11. Bennett K, Brims FJH. Asbestosis. *In*: Feary J, Suojalehto H, Cullinan P, eds. Occupational and Environmental Lung Disease (ERS Monograph). Sheffield, European Respiratory Society, 2020; pp. 125–140.
12. Vandenplas O, Lemièrre C. Sensitiser-induced occupational asthma. *In*: Feary J, Suojalehto H, Cullinan P, eds. Occupational and Environmental Lung Disease (ERS Monograph). Sheffield, European Respiratory Society, 2020; pp. 34–51.
13. Fuertes E, Brauer M. Outdoor environment. *In*: Feary J, Suojalehto H, Cullinan P, eds. Occupational and Environmental Lung Disease (ERS Monograph). Sheffield, European Respiratory Society, 2020; pp. 301–316.
14. Nowak D, Rakete S, Suojalehto H. Indoor environment. *In*: Feary J, Suojalehto H, Cullinan P, eds. Occupational and Environmental Lung Disease (ERS Monograph). Sheffield, European Respiratory Society, 2020; pp. 317–334.

Disclosures: None declared.