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Association of respiratory symptoms and lung function with occupation in the multinational Burden of Obstructive Lung Disease (BOLD) study

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Shareable abstract (@ERSpublications)
Occupational exposures associate with more respiratory symptoms but do not appear to be major determinants of differences in lung function. https://bit.ly/3zFjalu

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Abstract

Background Chronic obstructive pulmonary disease has been associated with exposures in the workplace. We aimed to assess the association of respiratory symptoms and lung function with occupation in the Burden of Obstructive Lung Disease study.

Methods We analysed cross-sectional data from 28 823 adults (⩾40 years) in 34 countries. We considered 11 occupations and grouped them by likelihood of exposure to organic dusts, inorganic dusts and fumes. The association of chronic cough, chronic phlegm, wheeze, dyspnoea, forced vital capacity (FVC) and forced expiratory volume in 1 s (FEV_1)/FVC with occupation was assessed, per study site, using

multivariable regression. These estimates were then meta-analysed. Sensitivity analyses explored differences between sexes and gross national income.

Results Overall, working in settings with potentially high exposure to dusts or fumes was associated with respiratory symptoms but not lung function differences. The most common occupation was farming. Compared to people not working in any of the 11 considered occupations, those who were farmers for ⩾20 years were more likely to have chronic cough (OR 1.52, 95% CI 1.19–1.94), wheeze (OR 1.37, 95% CI 1.16–1.63) and dyspnoea (OR 1.83, 95% CI 1.53–2.20), but not lower FVC (β=0.02 L, 95% CI −0.02–0.06 L) or lower FEV_1/FVC (β=0.04%, 95% CI −0.49–0.58%). Some findings differed by sex and gross national income.

Conclusion At a population level, the occupational exposures considered in this study do not appear to be major determinants of differences in lung function, although they are associated with more respiratory symptoms. Because not all work settings were included in this study, respiratory surveillance should still be encouraged among high-risk dusty and fume job workers, especially in low- and middle-income countries.