

## Addressing the origins and health effects of small lungs

### Authors' reply

We appreciate the comments of Magnus Ekström and colleagues and largely agree with them. However, we disagree with their suggestion that our proposed term, "small lung syndrome",<sup>1</sup> is inappropriate for a characteristic that is no different from being of short stature. People with small lungs present with respiratory symptoms and the point of naming a syndrome is to indicate the comorbidities that need to be addressed. The risks associated with a low total lung capacity are marked and are not related to airflow obstruction (as frequently asserted), and individuals with low lung volumes have a poor prognosis. The comorbidities associated with small lung volumes can and should be managed, and their management is among few interventions that can be offered to these patients. In purely practical terms, naming the condition as a syndrome should improve management. Giving the condition its own name also differentiates it from chronic obstructive pulmonary disease (COPD) and, in the long run, could improve the collection of statistics related to the incidence and prevalence of chronic lung disease.

Ekström and colleagues suggest that FEV<sub>1</sub> might be a better marker of small lungs than forced vital capacity (FVC). Although it is true that FEV<sub>1</sub> and FVC are highly correlated and that there is more scope for error in measuring FVC, the use of FEV<sub>1</sub> to assess lung size leads to further confusion between small lung syndrome and COPD. Improved quality of spirometry is needed. In hospitals, where there is doubt, total lung capacity can be measured.

The suggestion that normal values should be established in people with no disease and no adverse circumstances in early life might

be impractical, but it is in accord with the recommendation of the American Thoracic Society<sup>2</sup> that normal values should not be adjusted for ethnicity. Ekström and colleagues' recommendation to use a single reference equation based on the lung function of the least disadvantaged people is, however, at variance with the recommendation to use an average global standard.<sup>3</sup> There are strong arguments to be made on both sides.

Author declarations remain the same as in the original Comment.

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- 2 Bhakta N, Bime C, Kaminsky DA, et al. Race and ethnicity in pulmonary function test interpretation: an official american thoracic society statement. *Am J Respir Crit Care Med* 2023; **207**: 978–95.
- 3 Bowerman C, Bhakta NR, Brazzale D, et al. A race-neutral approach to the interpretation of lung function measurements. *Am J Respir Crit Care Med* 2023; **207**: 768–74.



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