

Adults with preserved ratio-impaired spirometry (PRISm) lung function patterns, defined as post-bronchodilator forced expiratory volume in 1 sec (FEV_1) $<80\%$ predicted and a FEV_1 /forced vital capacity (FVC) ratio ≥ 0.7 , are more likely to have chronic activity-related shortness of breath (commonly termed dyspnea) and reduced exercise capacity. However, the pathophysiological mechanisms of increased dyspnea and reduced exercise capacity in PRISm are unclear. This study is the first to examine physiological responses at rest and during exercise in PRISm, compared with healthy controls and individuals with chronic obstructive pulmonary disease (COPD). Heightened exertional dyspnea and reduced exercise capacity in PRISm, compared with health, was mainly explained by reduced vital and inspiratory capacities and a lower operating limit for tidal volume expansion during exercise. The observation that PRISm participants (with lung volumes reduction but preserved small airway function and pulmonary gas-exchange) were as dyspneic and functionally impaired as adults with moderate COPD (with both small airways dysfunction and pulmonary gas-exchange derangements) points to the primacy of resting lung volumes as a strong contributor of exertional dyspnea and exercise intolerance, regardless of the underlying respiratory pathophysiology.

This paper has an accompanying editorial by Casaburi and Crapo (*Am J Respir Crit Care Med* Vol 209, Iss 11, pp 1289–1300, Jun 1, 2024).