

Race-based spirometry equations may miss emphysema

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A secondary data analysis of the CARDIA (Coronary Artery Risk Development In Young Adults) Lung study found that emphysema is often detectable on CT scan before spirometry findings become

abnormal. The findings suggest that reliance on spirometry alone may result in the underrecognition of impaired respiratory health. Because the discrepancy is particularly present in Black men, this could exacerbate racial disparities. The analysis is published in *Annals of Internal Medicine*.

Spirometry is used in the assessment of COPD, but overreliance on spirometry may miss early signs of COPD and impaired respiratory health. Recent studies have shown that race-specific interpretations of spirometry may underestimate respiratory symptom burden and risk for death in Black adults.

Researchers from Northwestern University Feinberg School of Medicine conducted a secondary analysis of the CARDIA Lung study to determine the difference in emphysema prevalence between Black and White adults with normal spirometry results. The study included 2,674 participants who received both a computed tomography (CT) scan and spirometry.

The authors found that a substantial proportion of middle-aged adults with "normal" spirometry findings based on race-specific equations had emphysema on CT, and the trend was disproportionately seen among Black men even after adjusting for age and smoking. The use of race-neutral equations to interpret spirometry reduced the racial disparity in emphysema prevalence among those with "normal" results but did not eliminate it. According to the authors, these findings suggest that race-specific interpretations of spirometry may be normalizing structural racial inequities in respiratory health rather than identifying true biological differences in lung function.

More information: Gabrielle Y. Liu et al, Comparing Racial Differences in Emphysema Prevalence Among Adults With Normal Spirometry: A Secondary Data Analysis of the CARDIA Lung Study,

Annals of Internal Medicine (2022). [DOI: 10.7326/M22-0205](https://doi.org/10.7326/M22-0205)

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