

ACHIEVING HEALTH EQUITY THROUGH RACE-NEUTRAL SPIROMETRY

Understanding the 2023 ATS position on Pulmonary Function Testing

Normalizing Lung Function for Spirometry



The idea that lung capacity of black persons is lower compared to whites is an example of scientific racism.¹

A race based correction factor is applied to spirometry, **reducing** the normal reference range of lung capacity by **10%-15%** for **Black** or **African-American patients**.²

Until recently, **social determinants of health** were largely **overlooked** and **technology has masked** how race-based algorithms are applied.^{2,3}



The Evolution of Race-neutral Spirometry

In 2023, **ATS** issued **new clinical recommendations calling for the use of race-neutral equations in spirometry**, a change representing an evolution in thought supported by recent evidence.⁴

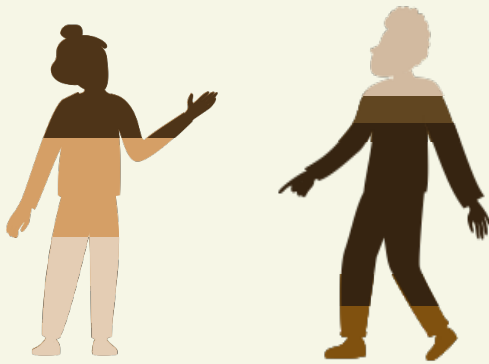
A race-neutral reference equation provides better or equivalent relationships between spirometry and symptoms, airway structure, emphysema, and functional capacity.¹



RACE DOES NOT PREDICT GENETIC ANCESTRY

"Race is a social construct comprising broad, poorly defined categories that neither reliably predict genetic ancestry nor consistently unite people biologically."

- Collective statements from AAFP, ATS, AMA, AAP^{1,2,5,6}



Classifying patients by race alone drives thinking away from the examination of other social, environmental, and genetic factors as drivers of disease.⁶ Genetic associations with pulmonary function do not provide evidence for the use of race or ethnicity in PFT interpretation.¹

Race-adjusted spirometry can be harmful because it

- May lead to the underdiagnosis and misdiagnosis of pulmonary disease in racial minority patients^{2,7,8}
- Can reduce access to effective treatments^{1,7,9,10}
- Impacts clinical risk of morbidity and mortality^{1,11,12}

Misdiagnosis and Decreased Access to Care



ACT on Health Equity

EDUCATE leaders at your institution on how race-neutral spirometry could impact quality of care.

ADVOCATE for the implementation of ATS recommendations in lung function assessment and determine how race adjustment can be removed.

EVALUATE how you can best support patients whose diagnosis may be changed with race-neutral spirometry.

Abbreviations: AAFP: American Academy of Family Physicians; AAP: American Academy of Pediatrics; AMA: American Medical Association; ATS: American Thoracic Society; PFT: pulmonary function test.

1. Bhakta NR, Bime C, Kaminsky D, et al. Race and ethnicity in pulmonary function test interpretation; An Official American Thoracic Society Statement. *Am J Respir Crit Care Med.* 2023;207(8):978-995. doi:10.1164/rccm.202302-0310ST. 2. Reddick B. Reconsidering the use of race in spirometry interpretation. *Am Fam Physician.* 2023;107(3):222-223. 3. Braun L. Race correction and spirometry: why history matters. *Chest.* 2021;159(4):1670-1675. 4. American Thoracic Society. ATS publishes official statement on race, ethnicity and pulmonary function test interpretation [Press release]. May 2023. Accessed January 26, 2024. www.thoracic.org/about/newsroom/press-releases/journal/2023/pft-and-race-official-statement.php. 5. American Medical Association. New AMA policies recognize race as a social, not biological, construct [Press Release]. November 16, 2020. Accessed January 26, 2024. www.ama-assn.org/press-center/press-releases/new-ama-policies-recognize-race-social-not-biological-construct. 6. Wright J, Davis W, Joseph M, et al. Eliminating race-based medicine. *Pediatrics.* 2022;150(1):e2022057998. doi:10.1542/peds.2022-057998. 7. Anderson M, Malhotra A, Non A, et al. Could routine race-adjustment of spirometers exacerbate racial disparities in COVID-19 recovery? *Lancet Respir Med.* 2021;9(2):124-125. doi:10.1016/S2213-2600(20)30571-3. 8. Moffett A, Bowerman C, Stanojevic S, et al. Global, race-neutral reference equations and pulmonary function test interpretation. *JAMA Netw Open.* 2023;6(6):e2316174. doi:10.1001/jamanetworkopen.2023.16174. 9. Beaverson S, Ngo V, Pahuja M, et al. Things we do for no reason™: race adjustments in calculating lung function from spirometry measurements. *J Hosp Med.* 2023;18(9):845-847. doi:10.1002/jhm.12974. 10. Elmaleh-Sachs A, Balte P, Oelsner E, et al. Race/ethnicity, spirometry reference equations, and prediction of incident clinical events: The multi-ethnic study of atherosclerosis (MESA) lung study. *Am J Respir Crit Care Med.* 2022;205(6):700-710. doi:10.1164/rccm.202107-1612OC. 11. Regan E, Lowe M, Make B, et al. Use of the spirometric "fixed-ratio" underdiagnoses COPD in African-Americans in a longitudinal cohort study. *J Gen Intern Med.* 2023;38(13):2988-2997. doi:10.1007/s11606-023-08185-5. 12. McCormack M, Balasubramanian A, Matsui E, et al. Race, lung function, and long-term mortality in the national health and nutrition examination survey III. *Am J Respir Crit Care Med.* 2022;205(6):723-724. doi:10.1164/rccm.202104-0822LE.