

Organization publishes official statement on race, ethnicity and pulmonary function test interpretation

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ATS statement says race and ethnicity should not be factors in interpreting lung function tests like spirometry. Credit: ATS

The American Thoracic Society has issued an official statement for

clinicians that explains why race and ethnicity should no longer be considered factors in interpreting the results of spirometry, the most commonly used type of pulmonary function test (PFT). The statement was endorsed by the European Respiratory Society. The full statement is available online in the *American Journal of Respiratory and Critical Care Medicine*.

Spirometry is a breathing test that measures how much air is going into an individual's lungs, and how rapidly air is inhaled and exhaled. It can be used to diagnose and track the severity of such respiratory diseases as asthma and [chronic obstructive pulmonary disease](#).

Race-specific equations or adjustments are currently used in the interpretation of PFT results. This approach requires results from Black patients to be lower—in some cases by 15 percent—than those from white patients of the same sex, height and age in order for the PFT measurements to be interpreted as abnormal. In 2021 the ATS convened a diverse workshop panel of clinicians and investigators to evaluate the use of race/ethnicity in PFT interpretation, make recommendations and provide clinical guidance. Although there was no initial consensus, and concerns that changing the existing guidelines might harm patients, five [research articles](#) were subsequently published that provided strong evidence to eliminate the use of race in PFT reporting and interpretation.

"The recent scientific evidence shows superiority of a race-neutral approach to PFT interpretation for assessing overall and pulmonary prognosis, and for assessing the impact of exposure to tobacco smoke," said panel co-chair Nirav R. Bhakta, MD, Ph.D., associate professor, critical care specialist and pulmonologist, University of California, San Francisco School of Medicine. "Reviews of clinical algorithms throughout medicine in the past decade have spawned concerns about bias and harm when race is used as a variable and has led to revisions of these algorithms."

He added, "In many areas of the world, the categorization of people by race is associated with structural racism and its negative effects. Globally, race/ethnicity is a social construct that changes across geography and time, making it difficult to envision it as a fixed characteristic of people; this is true now more than ever before with increased movement of people and mixing of cultures."

Widespread views among the [white population](#) dating to the 19th century that race distinguishes people based on innate and immutable physical features have resulted in the organization of pulmonary function measurements into categories of race and ethnicity. These beliefs predate investigation of the many factors determining lung health. This race-based approach led to the observation of differences in pulmonary function between some racial/[ethnic groups](#) and a recommendation to use race/ethnicity-specific reference equations for these measurements. Today, the scientific community has increasingly recognized that "race" is based on superficial appearance and does not encompass biological characteristics.

"Significant heterogeneity within these categories and lack of consistency of the definitions across time and geography further undermine attempts to use race and ethnicity to achieve precision in describing individuals," says Dr. Bhakta. "Normalization of perceived differences through the use of race/ethnicity-specific equations in PFT interpretation potentially contributes to medical harms caused by the lack of attention to modifiable risk factors for lower pulmonary function including those related to structural racism. People of color may experience delayed disease diagnoses or reduced access to therapies. Recent evidence from the United States demonstrates improved consistency of predictions of important clinical outcomes across racial/ethnic categories through the use of race-neutral compared to race/ethnicity-specific equations."

The ATS panel's new recommendation to use an average reference equation (race-composite GLI Global) instead of race/ethnicity-specific equations in PFT laboratories and [clinical practice](#) represents an evolution in thought supported by evidence presented since the most recent technical standards were published.

"We expect discussion and research to continue," Dr. Bhakta emphasizes. "There is a need to move beyond a simple statistical description of normal pulmonary function by examining the association between pulmonary function and meaningful health outcomes. Threshold-based decisions that lack evidence of benefit should be re-evaluated. Studies examining the potential impact of race-neutral and race/ethnicity-specific approaches on all people should continue. Further discussion on what the ideal reference population is and the development of reference equations without assigning racial or ethnic labels to the source data are still needed to achieve race neutrality."

The authors state that further research in more diverse populations across the world is also needed to identify modifiable risk factors for reduced lung function and on how to measure these factors in a way that may be translated to public policies and the application of pulmonary function testing in the clinic.

In conclusion, "There is a burden of proof of benefit for any continued use of [race](#) and ethnicity in PFT interpretation." Key conclusions and recommendations are available in the statement.

An accompanying editorial by Kevin Wilson, MD, chief of ATS Documents and Patient Education, may be found [here](#).

The ATS 2023 international conference will include presentations addressing disparities, including [the use of race and ethnicity in PFT interpretation](#) and [health disparities in lung nodule management](#).

More information: Nirav R Bhakta et al, Race and Ethnicity in Pulmonary Function Test Interpretation: An Official American Thoracic Society Statement, *American Journal of Respiratory and Critical Care Medicine* (2023). [DOI: 10.1164/rccm.202302-0310ST](https://doi.org/10.1164/rccm.202302-0310ST)

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