

Transcript Details

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Reevaluating Race in Spirometry: Advancing Equity in Pulmonary Risk Assessment

Announcer Introduction:

You're listening to *Project Oncology* on ReachMD. On this episode, we'll hear from Dr. Ajay Sheshadri, who's an Associate Professor in the Department of Pulmonary Medicine at the University of Texas MD Anderson Cancer Center. He'll be discussing his research on race-based pulmonary function testing in patients with non-small cell lung cancer. Here's Dr. Sheshadri now.

Dr. Sheshadri:

So historically, spirometry was used as a way to actually divide people by class or by race. And this has been used in this way for over 200 to 300 years. And in fact, some prominent American physicians from the 1800s would use this primarily to exclude Black Americans from things like military service.

And as a consequence of some of the data that was gathered on Black Americans and White Americans over this time uncritically, people noticed that pulmonary function was lower on average in Black Americans after accounting for things like height or age. And this was thought to be something inherent to biology without considering the possibility that changes in pulmonary function are actually more nuanced. And this worked its way into medical practice, and in fact, prominent guidelines from early in the 1900s noted that it was important to consider race as part of pulmonary function interpretation.

Over the course of the last two to three decades, it's become clear that it's not really race that defines the pulmonary function tests. There may be some component of genetic ancestry, but it's minimal. Most of it is really due to things like socioeconomic factors or access to preventive health, and these things may vary by race or numerous other things. But when you look at spirometry in a race-neutral way, you get a more unbiased assessment of the actual physiology of what's happening. And in fact, what can happen if you use a race correction is that you can actually underestimate the severity of lung disease, or you can mischaracterize somebody's risk before undergoing a significant procedure like, for example, a lung resection surgery.

In the context of the study, our question was primarily to look at difference in model performance using race-neutral or race-based spirometry. And in fact, we found no difference, which was reassuring that moving to a race-neutral strategy didn't actually harm our ability to predict complications. The performance of both models was suboptimal, suggesting that there's a lot of factors other than just spirometry that might predict the outcome.

One thing that's important is that a minority of patients were reclassified to a higher risk based on race-neutral spirometry, and of course, most of these were Black Americans. And so as we think about who should undergo surgery, we also have to think a little bit about whether the types of models that we use to predict pulmonary complications are actually properly calibrated and that they don't need updating.

One of the secondary points that we note in the study is that when we select patients for lung resection surgery, we use cutoffs that are like hard values. So, for example, when we looked at the post-op-predicted FEV1, we have tiers, and the first tier happens at 60 percent, and the second tier happens at 30 percent. And if you look like you're going to fall below one of those tiers, you need to have additional testing to make sure you can safely undergo surgery. And those cutoffs are not really data driven. Those cutoffs are somewhat arbitrary.

If you look at the actual risk function of developing a pulmonary complication, it's a curvilinear risk function, and the risk gets exponentially higher as the lung function gets lower. The risk of lung complications is not as discrete as our algorithm suggests, but it occurs on a continuum, and because of that, there may be some value in recalibrating risk where we look at the risk function as a continuous marker as opposed to these cutoffs. And that might mitigate some of the disparities that might occur if patients cross over a

discrete line. And so we're interested in exploring that idea further.

Announcer Close:

That was Dr. Ajay Sheshadri talking about race-based adjustments in pulmonary function testing among patients with non-small cell lung cancer. To access this and other episodes in our series, visit *Project Oncology* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening!