

# Race doesn't impact cardiovascular risk calculations, study finds

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Removing race information from cardiovascular risk calculators—which predict the probability of developing heart disease—doesn't affect patients' risk scores, according to a study by Weill Cornell Medicine and

NewYork-Presbyterian investigators.

The study, [published](#) in *JAMA Cardiology* on Dec. 6, adds to a growing body of evidence questioning the use of [race](#) in medical decision-making. Currently, doctors use cardiovascular risk assessments that include [personal health information](#), gender and race to gauge how likely a person is to develop heart disease. The risk score can then guide lifestyle changes and medications to prevent disease.

This study demonstrated that removing race from the atherosclerotic cardiovascular pooled cohort risk equations didn't change a patient's risk score. Moreover, adding social determinants of [health](#) into the equation didn't have an effect.

"The major takeaway is we need to rethink the idea of race in cardiovascular risk prediction," said lead author Dr. Arnab Ghosh, assistant professor of medicine at Weill Cornell Medicine and a hospitalist at NewYork-Presbyterian/Weill Cornell Medical Center. "We need to start thinking about race as a social construct that affects people over the course of their lives, not a biological construct."

Indeed, the paradigm is changing. Last month, the American Heart Association developed a new cardiovascular risk calculator which dropped the race factor.

"As we increasingly recognize race as a social construct, we move closer to understanding the underlying mechanisms for disparities in health care. Continued work in this space can hopefully lead to developing and implementing interventions for improved equity in our health care system," added senior author Dr. Parag Goyal, Etingin Family Clinical Scholar, associate professor of medicine at Weill Cornell Medicine and attending physician at NewYork-Presbyterian/Weill Cornell Medical Center.

## Does race have a role in risk calculations?

The use of race in clinical decision-making has come under greater scrutiny over the last few years. For example, many health care institutions have removed race from kidney function calculations because [studies](#) showed it contributed to delayed kidney care for Black patients. Similarly, [studies](#) have shown that the use of race and ethnicity in lung function assessment leads to the underdiagnosis of Black patients with lung disease.

Considering these developments, Dr. Ghosh and his colleagues wanted to test how removing race in cardiovascular risk assessment calculations affected accuracy, if at all. The team analyzed data from the Reasons for Geographic And Racial Differences in Stroke (REGARDS) study, which includes over 30,000 Black and white participants, aged 45 to 79, who are followed over time. Dr. Ghosh's study included 12,000 of these participants and analyzed outcomes for up to 10 years.

Dr. Monika M. Safford, the John J. Kuiper professor of medicine and chief of the division of general internal medicine at Weill Cornell Medicine, leads the large ancillary study to REGARDS that focuses on heart-related outcomes, complementing the stroke focus of the parent study; the REGARDS-MI ancillary study group spawned this study.

"The orthodoxy was [racial differences](#) in cardiovascular outcomes require us to look at these groups differently," said Dr. Ghosh, who is also a fellow of the Center of Health Equity at Cornell University. "But we wanted to assess whether that supposition holds up empirically."

## Race as a social construct, not biological

Despite the well-documented racial and ethnic disparities in [heart](#)

[disease](#) outcomes, Dr. Ghosh and his colleagues were surprised to find that race and social determinants of health didn't have any effect on risk outcome. They concluded that measuring risk factors like [blood pressure](#), diabetes status and cholesterol, which are used in the calculators, can accurately predict risk without using race.

"The social impact of race on one's blood pressure and other health factors are still present, which may explain the predictive power of the calculators even without using race explicitly," he said.

In addition, the older age of participants in the REGARDS study may explain why social determinants didn't impact risk calculations. Dr. Ghosh explained that the effects of social determinants of health, such as living in a segregated neighborhood or experiencing racism, accumulate over a lifetime and may lead to health issues such as high blood pressure or cholesterol.

Thus, adding early-life social determinants of health as separate factors doesn't make a difference since their effects are incorporated into the patient's measured cardiovascular risk factors related to health.

Next, Dr. Ghosh and his colleagues will be assessing the use of race and social determinants in risk calculations across patient lifespan. They plan to apply machine learning algorithms to develop risk prediction models that incorporate numerous traditional cardiovascular [risk factors](#) and nontraditional ones, such as the effects of living in communities impacted by policies that promoted racial segregation.

"It's essential for clinicians and scientists to consider how to appropriately address the health effects of race as a social construct, which has contributed to health disparities in cardiovascular outcomes," said Dr. Ghosh.

**More information:** Arnab K. Ghosh et al, Risk Prediction for Atherosclerotic Cardiovascular Disease With and Without Race Stratification, *JAMA Cardiology* (2023). [DOI: 10.1001/jamacardio.2023.4520](https://doi.org/10.1001/jamacardio.2023.4520)

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