

Statins for heart disease prevention could be recommended for far fewer Americans if new risk equation is adopted

June 10 2024



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If national guidelines are revised to incorporate a new risk equation, about 40% fewer people could meet criteria for cholesterol-lowering

statins to prevent heart disease, according to a study by researchers at the University of Pittsburgh, Beth Israel Deaconess Medical Center and University of Michigan.

Publishing in *JAMA Internal Medicine*, the study examines the potential impact of widespread adoption of the PREVENT equations, which were released by the American Heart Association in November 2023 to update physicians' go-to calculators for assessing patients' 10-year risk of heart attack or stroke.

At a population level, the number of adults recommended for statins could decrease from 45.4 million to 28.3 million. At the same time, the study showed that most people who would be recommended to take statins are not currently taking them.

"This is an opportunity to refocus our efforts and invest resources in the populations of patients at the highest risk," said lead author Dr. Timothy Anderson, M.D., M.A.S., a [primary care physician](#) at UPMC and health services researcher and assistant professor of medicine at Pitt.

For their analysis, the team used nationally representative data from 3,785 adults, ages 40 to 75, who participated in the National Health and Nutrition Examination Survey from January 2017 to March 2020. The researchers estimated 10-year risk of atherosclerotic cardiovascular disease (ASCVD) using the Predicting Risk of cardiovascular disease EVENTS (PREVENT) equations and compared the results to risk estimated using the previous tool, known as Pooled Cohort Equations (PCE).

The PREVENT equations were [developed by the American Heart Association](#) to more accurately represent risk across the current U.S. population, as the PCE equations were based on patient data that were decades old and lacked diversity.

PREVENT also reflects more recent insights into the biology of ASCVD. Current [statin](#) use as well as metabolic and kidney diseases are incorporated into the new calculation, while race has been removed from it, reflecting a growing awareness that race is a social construct.

Using PREVENT, the team found that among the study's entire cohort, 10-year risk of developing ASCVD was 4%, half as high as the risk calculated by the PCE (8%). The difference was even larger for Black adults (5.1% versus 10.9%) and for adults between the ages of 70 and 75 (10.2% versus 22.8%).

An estimated 4.1 million patients who are currently taking statins would no longer be recommended to take them based on PREVENT. For these patients and their physicians, clear and careful communication is key, said Anderson. "We don't want people to think they were treated incorrectly in the past. They were treated with the best data we had when the PCE was introduced back in 2013. The data have changed."

At the same time, it's important to note that everyone's risk will inevitably change over time, as well, he added. "For a patient who we now know is at lower risk than we previously thought, if we recommend they stop taking statins, they still could be back to a higher risk five years down the road, for the simple reason that everybody's risk goes up as we get older."

More information: Atherosclerotic Cardiovascular Disease Risk Estimates Using the Predicting Risk of Cardiovascular Disease Events Equations, *JAMA Internal Medicine* (2024). [DOI: 10.1001/jamainternmed.2024.1302](https://doi.org/10.1001/jamainternmed.2024.1302)

Provided by University of Pittsburgh

Citation: Statins for heart disease prevention could be recommended for far fewer Americans if new risk equation is adopted (2024, June 10) retrieved 18 June 2024 from <https://medicalxpress.com/news/2024-06-statins-heart-disease-americans-equation.html>

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