

Substudy of trial reveals how statin therapy prevents cardiovascular disease in people with HIV

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A recent clinical trial reveals how a daily statin pill may prevent heart attacks and strokes in people with HIV. In this substudy of the phase 3 Randomized Trial to Prevent Vascular Events in HIV (REPRIEVE), a team led by investigators at Massachusetts General Hospital (MGH) discovered that pitavastatin reduces plaque buildup in the heart's coronary arteries and lowers inflammation in the blood. The findings are published in [JAMA Cardiology](#).

In REPRIEVE, pitavastatin—a cholesterol lowering medication with minimal interactions with anti-retroviral HIV therapy—reduced the risk of adverse cardiovascular events including [heart attack](#) and stroke by 35% over five years in 7,769 people with HIV. The effect went beyond what would be expected from cholesterol lowering alone. In the REPRIEVE substudy, 611 people had computed tomography (CT) scans (to assess plaques in the coronary arteries) at both the start of the trial and after two years after randomization to pitavastatin or placebo. Blood markers of inflammation were also measured at baseline and after two years.

At the two-year mark, pitavastatin reduced noncalcified coronary plaque volume by 7% compared with placebo. Also, participants taking pitavastatin had a 33% lower risk of coronary plaque progression. Furthermore, pitavastatin led to reductions in oxidized [low-density lipoprotein](#) and lipoprotein-associated phospholipase A2, which are measures of lipid oxidation and arterial inflammation—processes that contribute to plaque formation and atherosclerosis.

"The reductions in coronary plaque and inflammation may help explain the prevention of cardiovascular events observed in REPRIEVE," says lead author Michael T. Lu, MD, MPH, who is the co-director of the MGH Cardiovascular Imaging Research Center, associate chair of imaging science for the MGH Department of Radiology, and an associate professor of Radiology at Harvard Medical School. "This is also the largest trial to show that coronary CT angiography, a noninvasive test, can track changes in plaque in response to a drug."

REPRIEVE's results may have a clinical impact on national and international guidelines in the near future. The British HIV Association recently released guidelines recommending statins in people with HIV, Lu notes.

More information: Michael T. Lu et al, Effects of Pitavastatin on Coronary Artery Disease and Inflammatory Biomarkers in HIV, *JAMA Cardiology* (2024). [DOI: 10.1001/jamacardio.2023.5661](https://doi.org/10.1001/jamacardio.2023.5661)

BHIVA rapid guidance on the use of statins for primary prevention of cardiovascular disease in people living with HIV.
[www.bhiva.org/BHIVA-rapid-guid ... rdiovascular-disease](https://www.bhiva.org/BHIVA-rapid-guid...rdiovascular-disease)

Provided by Massachusetts General Hospital

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