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## Statin-dependent and -independent pathways are associated with major adverse cardiovascular events in people with HIV

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### Background

People with HIV (PWH) have a higher risk of heart disease. The REPRIEVE study showed that the cholesterol-lowering drug pitavastatin helped lower the risk of major heart disease events, like heart attack or stroke, in PWH who were already on HIV treatment with low-to-moderate heart disease risk. However, it's still unclear how statins like pitavastatin can effect disease pathways like inflammation and metabolism and their impact on major heart disease events.

### Goals of the Study

The goal of the study was to see how pitavastatin could affect inflammatory and metabolic causes of major heart disease events in a subset of people with HIV enrolled in the REPRIEVE Mechanistic Substudy.

REPRIEVE enrolled PWH between ages 40-75 with low-to-moderate traditional heart disease risk, randomized these participants to pitavastatin or to placebo (a pill that contains no medication). Participants were followed for, on average 5 years, for heart disease events like a heart attack or stroke. Main findings from REPRIEVE were that [statin therapy reduced heart disease events among PWH by 36%](#), prompting guideline changes recommending statin use in PWH. Participants in the REPRIEVE Mechanistic Substudy underwent computed tomography (CT) scans of the blood vessels surrounding the heart and blood tests measuring levels of inflammation markers and proteins.

#### ➤ The participants:

- 765 REPRIEVE Substudy participants (379 taking pitavastatin, 386 taking placebo), all enrolled from the US
  - Low-to-moderate traditional heart disease risk
  - Median age at enrollment: 50.8 years
  - 134 (18%) women and 631 (82%) men

#### The Findings:

- 7 different proteins were found to change in blood levels in response to taking pitavastatin over time
- The angiopoietin-related protein 3 (ANGPTL3) related most strongly to major heart disease events
- People taking pitavastatin showed lower levels of ANGPTL3 in their blood over time, which was associated with lower risk of heart disease events
- Of the 248 proteins that were found to not change over time with pitavastatin, 26 were related to heart disease events. These proteins are mostly involved in inflammation and the immune system.

**In Summary:** Among a subset of US PWH with low-to-moderate heart disease risk in the REPRIEVE Mechanistic Substudy, ANGPTL3, along with other important proteins relating to inflammation, may contribute to the increased risk of heart disease events in PWH.

REPRIEVE Trial Website: [reprivetrial.org](https://reprivetrial.org)

*The findings shared in this summary are from the REPRIEVE population at a specific point in time. These findings are descriptive and not intended to change clinical care. If you have questions about what you've read, please talk to members of the REPRIEVE study team at your local site or a health care provider*