



# REPRIEVE



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## Sex-Differences in Subclinical Atherosclerosis and Systemic Immune Activation/Inflammation among People with HIV in the U.S.

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### Background

People with HIV on antiretroviral therapy (ART) face increased risks of heart disease as compared to people without HIV, and drivers of heart disease risk are believed to differ by sex.

### Goals of the Study

Our goals were to examine sex-differences in possible drivers of heart disease risk among people with HIV participating in a substudy of the REPRIEVE trial. The REPRIEVE trial is a global clinical research study testing whether treatment with a statin medication (cholesterol-lowering medication) helps prevent heart disease among people with HIV. U.S. REPRIEVE participants taking part in the substudy undergo all REPRIEVE trial procedures, as well as •CT scans of the blood vessels surrounding the heart and •blood tests to measure levels of markers of inflammation (the body's response to infection). In our study, we compared: 1) sex-differences in coronary artery plaque (fatty build-up in the blood vessels surrounding the heart); 2) sex-differences in levels of inflammation markers in the blood; and 3) sex-differences in the relationships between inflammation markers and coronary artery plaque.

#### ➤ The participants:

- 755 participants (631 males and 124 females)
- Average age: 51 years

#### ➤ The findings:

1. Females had a lower prevalence of plaque in the coronary arteries, even after adjusting for heart disease risk factors.
2. Levels of the inflammation markers IL-6, hs-CRP, and D-dimer were higher in females while levels of the inflammation marker Lp-PLA2 were higher in males, even after adjustment for heart disease risk factors.
3. There were no differences by sex in the associations between higher levels of select inflammation markers (MCP-1, LpPLA2, and oxLDL) and higher prevalence of plaque in the coronary arteries.
  - Notably, only among females, higher levels of the inflammatory marker D-dimer were found to relate to a higher prevalence of non-calcified or vulnerable plaque in the coronary arteries.

**In Summary:** Female people with HIV living in the U.S. were found to have a lower prevalence of plaque in the coronary arteries, and there were sex differences in levels of inflammation markers. Relationships between levels of inflammation markers and plaque in the coronary arteries differed by sex for the inflammation marker D-dimer but not for the other markers tested in this study. Our findings help expand understanding of how drivers of heart disease risk among people with HIV differ by sex. This type of work will help pave the way for the development of prevention strategies specifically designed to address the heart disease risks experienced by females with HIV and males with HIV.

REPRIEVE Trial Website: [reprivetrial.org](http://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*