



Calcified Plaque Raises Heart Disease Risk for Younger Adults



A major study published in *JAMA Cardiology* indicates that the mere presence of any calcified coronary plaque, also called coronary artery calcium (CAC), in people under age 50 – even small amounts – was strongly associated with increased risk of developing clinical coronary heart disease over the ensuing decade. The study also shows that those with the highest CAC scores, as measured by computed tomography (CT) scan, had a greater than 20 percent chance of dying of a heart event over that same time period.

See Also: [High Amounts of Saturated Fats Increase Heart Disease Risk](#)

The study points to CAC as a very specific imaging biomarker for identifying those people who are at risk earlier in life for heart disease. “The person may not be at risk for a heart attack tomorrow or next month, but they are at very high risk over the next 10 years of their life,” explains lead author Jeffrey Carr, MD, MSc, Cornelius Vanderbilt Chair in Radiology and Radiological Sciences at Vanderbilt.

Data for this study comes from the National Heart, Lung and Blood Institute (NHLBI) Coronary Artery Risk Development in Young Adults (CARDIA) Study, a longitudinal, community-based study that recruited 5,115 black and white adults age 18-30 in four cities — Oakland, Minneapolis, Chicago and Birmingham, Alabama — beginning in 1985 and followed them for 30 years.

CT scans were performed on 3,330 subjects for the CAC study, and the mean follow-up period was 12.5 years. CAC of any amount was seen in 30 percent of that group. The researchers sought to answer two primary questions: can the simple presence of CAC on a chest CT inform clinical practice? And is a CAC score greater than 100 associated with premature death?

The answer to both was yes. Dr. Carr's team found that even the lowest CAC score was associated with between a 2.6 and tenfold increase in clinical events over the next 12.5 years. For those with high CAC scores (100 or above), the team said the incidence of death was 22 percent, or approximately 1 in 5.

Whether the amount of CAC is high or low, according to Dr. Carr, its presence is a signal that advanced coronary artery disease is present and enhanced prevention may be warranted. A change in clinical practice that can impact care today is that CAC can easily be identified on routine CT scans of the chest obtained for other indications, Dr. Carr points out.

“For example, a 45-year-old woman with a cough might receive a routine CT scan that shows the presence of a calcified plaque in her coronary arteries. With this new information, the doctors don't need to know the CAC

score or do additional tests. With the information that any CAC is present, she and her healthcare team could assess her risk and determine the optimum prevention strategy."

Whether any kind of general screening for CAC is warranted needs additional research, although the study's authors suggest that a "CT scan everyone" strategy in all individuals age 32 to 46 is not indicated.

Source: [Vanderbilt University Medical Center](#)

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