

# Study examines prevalence of 'silent' heart attacks in population

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In a multiethnic, middle-aged and older study population, the prevalence of myocardial scars (evidence of a heart attack) was nearly 8 percent, of which nearly 80 percent were unrecognized by electrocardiography or clinical evaluation, according to a study in the November 10 issue of *JAMA*. This issue, a cardiovascular disease theme issue, coincides with the American Heart Association's Scientific Sessions 2015.

Ischemic heart disease is an important public health concern, but a considerable proportion of [myocardial infarctions](#) (MIs; heart attacks) are clinically unrecognized. Given the aging of the U.S. population, it is important to understand the prevalence, risk factors, and prognosis of unrecognized MI. In patients who survive a heart attack, normal

contractile (having the property of contracting) tissue is replaced by noncontractile fibrosis (formation of excess fibrous connective tissue in a reparative process) (scar). Myocardial scarring leads to abnormal heart function and poor prognosis. The prevalence of and factors associated with unrecognized MI and scar have not been previously defined using contemporary methods in a multiethnic U.S. population, according to information in the article.

David A. Bluemke, M.D., Ph.D., of the National Institute of Biomedical Imaging and Bioengineering, Bethesda, Md., and colleagues examined the prevalence of myocardial scar using cardiac magnetic resonance (CMR; considered a standard of reference for defining the presence of myocardial scar). Participants were multiethnic, 45 through 84 years of age and free of clinical [cardiovascular disease](#) (CVD) at study entry in 2000-2002. In the 10th year examination (2010-2012), 1,840 participants (average age, 68 years; 52 percent men) underwent CMR imaging with gadolinium to detect myocardial scar. Cardiovascular disease risk factors and coronary artery calcium (CAC) scores were measured at study entry and year 10.

The overall prevalence of myocardial scar by CMR was 7.9 percent (146 of 1,840). The prevalence of previously unrecognized myocardial scar was 6.2 percent, whereas 1.7 percent had clinically recognized MI. Thus, 78 percent (114 of 146) of myocardial scars were unrecognized by clinical or electrocardiography (ECG) evaluation. Men had a higher prevalence of myocardial scar than women (12.9 percent vs 2.5 percent).

Of individual [risk factors](#), age, male sex, CAC score, body mass index, current smoking, and use of antihypertensive medications at study entry were associated with higher odds of myocardial scar.

"The clinical significance of unrecognized myocardial scar remains to be defined, although prior myocardial scar has been noted pathologically in

more than 70 percent of patients with sudden cardiac death but without prior known coronary artery disease," the authors write. "Further studies are needed to understand the clinical consequences of these undetected scars."

**More information:** *JAMA*, [DOI: 10.1001/jama.2015.14849](https://doi.org/10.1001/jama.2015.14849)

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