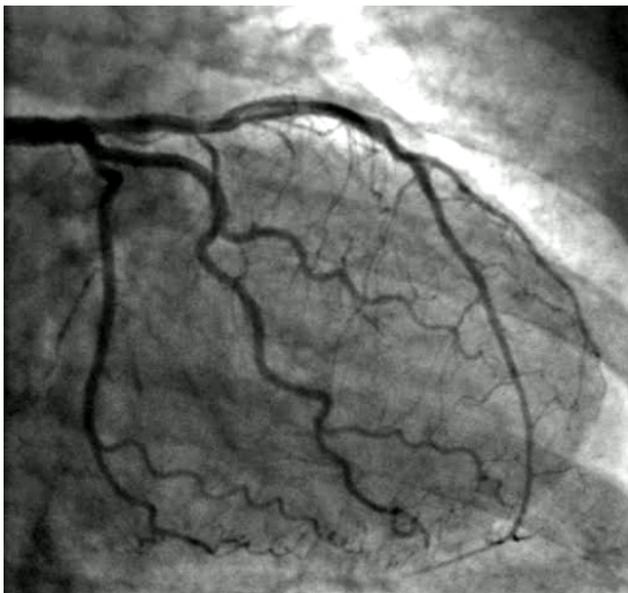


Women who experience symptoms of heart disease are at increased risk for future heart problems, even if tests show their arteries are clear, according to a study published May 11, 2009 in *Archives of Internal Medicine*.

More than 50% of women who undergo testing for heart disease do not have significant blockages in the arteries that supply blood to the heart. Until recently, it was thought that as long as their arteries were clear, these women were not at increased risk for heart problems. Doctors simply reassured them that they did not have heart disease and that there was nothing to worry about. However, a recent analysis of the Women's Ischemic Syndrome Evaluation (WISE) study found that a normal result on a [coronary angiogram](#), the gold standard test for heart disease, does not necessarily mean that all is well.



The study examined 540 women with heart disease symptoms who had undergone a coronary angiogram test. The women had either normal coronary arteries (no narrowing or blockages at all) or *nonobstructive* [coronary artery disease](#) (arteries that were less than 50% narrowed—not normally enough to cause symptoms). They were monitored for 5 years and compared with 1000 women who had never had heart disease symptoms.

Researchers found that women with heart disease symptoms but who had completely clear coronary arteries still had **three times the risk of heart problems** compared with women who had no symptoms, even after other heart disease risk factors were taken into account. Women with symptoms and only minor blockages had **seven times**

the risk. For all groups of women, risk increased with age and number of heart disease risk factors.

This study is one of the first to show that symptoms alone, even in patients with completely normal arteries, are a marker of future heart risk. Both women and their physicians should recognize this and, rather than being reassured by the seemingly healthy arteries, should start taking steps to get risk factors under control with lifestyle changes and medication, if necessary.

Researchers are not sure what causes the increased heart risk in these women; one possibility is that problems with the lining of the blood vessels (*endothelial dysfunction*) reduce blood flow to the heart in a way that is not detectable on an angiogram test. The phenomenon of chest pain with normal coronary arteries is known as

[Cardiac Syndrome X](#)

, and is much more common in women than men. Visit our full article to learn much more, including possible causes of cardiac syndrome X and current treatment options.

Learn More:

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Source: Gulati M, Cooper-Dehoff RM, et al. Adverse Cardiovascular Outcomes in Women with Nonobstructive Coronary Artery Disease. A Report From the Women's Ischemia Syndrome Evaluation Study and the St James Women Take Heart Project. *Arch Intern Med.* 2009;169(9):843-850.

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