

# Panic Attack or Heart Attack?

## *Diagnosing Heart Disease in Women*

Heart disease affects your heart's muscle, blood vessels, and electrical system and is the leading cause of death among women. The most common form of heart disease is coronary artery disease in which plaque (a fat-like substance) deposits on artery walls. Plaque build-up – known as atherosclerosis- is a chronic condition that occurs in people with risk factors such as diabetes, obesity, smoking, abnormal levels of blood fats, high blood pressure and a family history of this disorder. When a plaque ruptures, a blood clot forms can form and suddenly block an artery. If this happens in a heart artery, the result may be or an **Acute Coronary Syndrome (ACS)**. Getting life-saving treatment - within the first 30 minutes of an attack - is crucial to prevent permanent heart damage and even death.

**Panic Attack or Heart Attack?** Symptoms of panic attack and heart attack trigger the body's "fight or flight" response. Chest pain and shortness of breath are symptoms of **ischemia**, the name given to a lack of blood flow to the heart muscle. Chest pain and difficulty breathing are common symptoms in both panic attack and heart attack. People may also experience rapid, pounding heartbeats (palpitations), sweating and a feeling of impending doom. Other symptoms may include transient burning sensation in the chest, dizziness, weakness, nausea and severe indigestion. If symptoms last for more than 2-3 minutes or if the pain leaves and then returns, it could be heart disease and you need to call 9-1-1 and get to the emergency room right away. Only by having testing beyond the standard electrocardiogram will you know if the pain is coming from your heart.

**Diagnosing Heart Disease** Diagnosing heart disease in women is more difficult than it is in men. Test results may not be as reliable. In addition, women often present with milder symptoms like sudden onset of extreme weakness, shortness of breath and only mild "chest discomfort", but these symptoms are not to be taken lightly and deserve prompt attention. Advocacy plays an important role in women getting emergency care. Described below are some of the tests that are available to diagnose a heart attack and ACS, and how these tests are interpreted in women.

- Electrocardiogram** An electrocardiogram (EKG or ECG) measures your heart's electrical activity by placing small electrodes on your chest, either while you are lying down or during stress testing. It records your heart's rate and rhythm and can detect evidence of a heart attack or inadequate blood flow to the heart muscle. It may not reveal a heart attack in every case, and may not show that the heart is starved for oxygen, especially if you are not having any symptoms when being tested.

- Blood Tests** In conjunction with an ECG, blood tests screen for a variety of proteins found in the blood that are known to be associated with heart attacks. These proteins include creatine kinase, myoglobin, and most recently, troponin – if these are abnormally elevated they are indicators that a heart attack is taking place and that heart cells have begun to die. The goal of emergency room staff is to take blood tests within 30 minutes of your arrival with test results within one hour so that appropriate treatment can begin. Care within the first hour greatly improves outcome. If a heart attack is looming, but no cell damage has taken place, this condition is called **Unstable Angina**. **Vessel spasm**, which is more common in women, contributes to this precarious state.

- Stress Tests** The routine diagnostic test – the treadmill stress test - is walking on a treadmill to stress the heart with exercise while having an electrocardiogram (the heart can also be stressed by administering certain drugs intravenously if a woman is unable to walk due to arthritis or other condition). The stress test is not entirely reliable for a man and is even less reliable for a woman. Research studies funded by the National Institutes of Health have demonstrated that the treadmill stress test gives false results in up to 40 per cent of women. Accuracy improves greatly– as high as 85% - when the stress test is combined with nuclear or echo imaging. **Stress Echo** combines the stress test with echocardiography. It is a good first-line test for a woman with symptoms and risk factors for heart disease. Echocardiography uses sound waves technology to give detailed information about the heart muscle, valves, chamber, and major blood vessels around the heart. It measures your "ejection fraction" – the functional status of your left ventricle, which is the main pumping chamber of the heart. **Nuclear Imaging** is a scan (also called myocardial perfusion imaging or "MPI") that uses a nucleotide tracer (e.g. Thallium) that is injected into your veins to view blood flow your heart muscle. MPI is used in combination with the stress test to improve accuracy in diagnosing heart disease. Women of child-bearing age may wish to opt for ultrasound imaging to avoid exposure to radiation . Although stress tests are non-invasive, they are not without risk. Patients who are actively experiencing symptoms should not undergo this test. And, if you suffer symptoms of any kind after this test, insist on remaining in the hospital to be observed for the next 24 hours.

- Electron beam computed tomography (EBCT)** Also called "ultra-fast CT scan of the heart", the EBCT detects calcium build up in coronary arteries. Plaque consist of calcium and the test produces a 3-D picture of the heart that allows scoring of plaque to determine relative risk of heart attack. The test may incorporate a dye to view large arteries and veins around your heart and other structures. EBCT is classified as a screening tool to detect early signs of plaque in women with several risk factors or symptoms, and is considered to be low risk as tool to help guide your healthcare professional on further treatment. Since it involves exposure to x-ray, tell your practitioner if you think you might be pregnant.

- Magnetic resonance imaging (MRI)** Magnetic resonance imaging of the heart uses strong magnets to detect energy signals from your heart muscle. This test is currently under investigation as a possible new diagnostic tool to determine coronary artery disease and may become available in the future.

- Angiography** This test, also called "cardiac catheterization", allows doctors to visualize the blood flow through the coronary arteries. A long, thin tube called a "catheter", is inserted into your arm or leg artery and is advanced to the arteries supplying the heart muscle . A dye is then injected into the catheter to visualize 2-D images of blockages in the coronary arteries. This has long been known as the "Gold Standard" for diagnosing heart disease with the most accuracy in both women and men, however recent studies suggest test results are not as accurate in women who have may have plaque distributed more diffusely rather than in discrete areas as is more common in men. Using intravascular ultrasound in the course of coronary angiography may improve the diagnostic accuracy in this situation.

**Call 9-1-1 if you think you are having a heart attack.** If you have chest pain, discomfort that lasts more than a few minutes, difficulty breathing or other symptoms which seem life-threatening, get to the emergency room. Treatment results are best for those who arrive in the emergency department shortly after symptoms begin. Newer tests can diagnose a heart attack more quickly and accurately. Even if your test results in the emergency room are normal, if you are still in discomfort or having persistent pain, you should be assertive and insist on being admitted into the hospital overnight for observation. More accurate and safer test methods are currently being explored for women with heart disease symptoms.

**Plan a visit to your healthcare practitioner to discuss your risk factors for heart disease.** It's the number one killer of women age 35 and older. If you think you are at risk, or you have any symptoms that cause you concern, see your doctor without delay and ask for testing to rule out heart disease.

**HEALTHY HEARTS PROGRAM**  
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