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LIBRARY FOR PEOPLE



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We think patients are the largest untapped healthcare resource and that Information therapy is the most Powerful Medicine !

#### OUR GOALS

1. Encouraging health insurance companies to invest in patient education.
2. Advocating information therapy.
3. Setting up a national network of patient education centers.
4. Developing patient educational materials in Indian Languages for the web.



HEALTH EDUCATION LIBRARY FOR PEOPLE

## Syndrome X (Cardiac Syndrome X)



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## What is Syndrome X?

Syndrome X describes chest pain (angina) in people who do not show signs of blockages in the arteries of their heart (coronary arteries) after an angiogram, or X-ray of these arteries. It is not clear what causes Syndrome X, but there are several theories. Syndrome X patients do not seem to have a higher risk of dying early or having a heart attack, but they often continue to suffer from chest pain even after treatment.

**Causes:** Syndrome has several causes that act together. Some can be controlled, while others can't.

Causes that can be controlled include overweight and obesity, lack of physical activity, and insulin resistance.

Some causes you can't control are growing older and genetics. Your chance of developing metabolic syndrome increases with age. Your genes can increase your chances of developing insulin resistance, for example, which can lead to metabolic syndrome, even if you have only a little extra weight around your waist.

Two other conditions are a tendency to form blood clots and a tendency to have a constant, low-grade inflammation throughout the body.

The term "micro vascular" refers to very small blood vessels and, in this case, very small arteries of the heart. The major arteries of the heart are spaghetti-thin, but these tiny arteries are smaller still. When these tiny blood vessels narrow, oxygen cannot reach some areas of the heart muscle, which can cause chest pain.

Restricted blood flow to the heart is called myocardial ischemia; myocardial refers to the heart muscle and ischemia is a combination of the Greek words for "restrain" and "blood." About 50% of women with Syndrome X have evidence of micro vascular dysfunction, but only about 20% to 25% show signs of restricted blood flow to the heart, suggesting that there are other factors involved. Syndrome X patients generally have good survival rates whereas people with true myocardial ischemia are at increased risk of having a heart attack or dying from heart disease.

Studies have also shown that people with Syndrome X have enhanced pain perception, meaning they feel chest pain more intensely than the average person. It is not known whether Syndrome X patients feel all types of pain more intensely or only chest pain.

Why are women more likely than men to have Syndrome X?

Hormones and other risk factors unique to women may play a role.

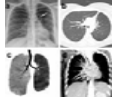
**Treatments:** Treatment can be provided once other possible causes of the pain have been excluded - for example, indigestion, musculoskeletal pain and psychological problems.

Anti-angina medicines may be useful. These can relieve the symptoms of chest pain and lessen the frequency of painful episodes.

The outlook for patients with cardiac syndrome X is good. They're much less likely to have a heart attack than people with narrowing of the major coronary arteries.

It's still important for patients to look after their heart and blood vessels by not smoking, eating healthily and keeping active within their capabilities

**Diagnosis:** First, you must have a positive exercise stress test (usually a treadmill test), meaning the test showed that your heart was not getting enough blood during exertion. The second step is to have an angiogram, which is an X-ray of the arteries of your heart, to see if any of the major arteries are blocked. If there are no major blockages or narrowing in the blood vessels of your heart and other causes of chest pain are ruled out (including heart valve disease, muscle problems, or throat problems), then you will probably be diagnosed with Syndrome X. An angiogram cannot detect problems in the tiny arteries of the heart involved in micro vascular dysfunction. In some cases, your doctor may recommend tests to see if blood vessel problems (vascular dysfunction) are responsible for your chest pain and to rule out coronary artery spasm.



## Can Syndrome X be prevented?

Since it is not known exactly what causes Syndrome X, there is very little information on how to prevent it. However, it is always a good idea to maintain a heart healthy-lifestyle that includes: Quitting smoking, having healthy cholesterol levels, lowering high blood pressure, being physically active & eating a heart-healthy diet.



