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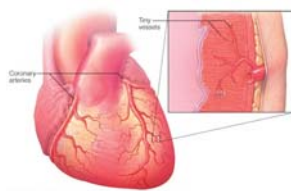
Small vessel disease

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Overview

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Small vessel disease is a condition in which the walls of the small arteries in the heart are damaged. The condition causes signs and symptoms of heart disease, such as chest pain (angina).



Small vessel disease

Clogging or narrowing of the arteries that supply blood to your heart can occur not only in your heart's largest arteries (the coronary arteries) but also in your heart's smaller blood vessels.

Small vessel disease is sometimes called coronary microvascular disease or small vessel heart disease. It's often diagnosed after a doctor finds little or no narrowing in the main arteries of your heart, despite your having symptoms that suggest heart disease.

Small vessel disease is more common in women and in people who have diabetes or high blood pressure. The condition is treatable but can be difficult to detect.

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Symptoms

Small vessel disease signs and symptoms include:

- Chest pain, squeezing or discomfort (angina), which may worsen during daily activities and times of stress
- Discomfort in your left arm, jaw, neck, back or abdomen associated with chest pain
- Shortness of breath
- Tiredness and lack of energy

If you've been treated for coronary artery disease with angioplasty and stents and your signs and symptoms haven't gone away, you might also have small vessel disease.

When to see a doctor

If you're having chest pain and other signs and symptoms — such as shortness of breath, sweating, nausea, dizziness, or pain that radiates beyond your chest to one or both of your arms or to your neck — seek emergency medical care.

It might be hard to tell if your symptoms are due to small vessel disease, especially if you don't have chest pain. If you do have chest pain, see your doctor to find out the cause.

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Causes

Experts suspect that the causes of small vessel disease are the same as the causes for disease of the larger vessels of the heart, such as high blood pressure, high cholesterol, obesity and diabetes.

The large vessels in your heart can become narrowed or blocked through a condition in which fatty deposits build up in the arteries

(atherosclerosis). In small vessel disease, damage to the small vessels affects their ability to expand (endothelial dysfunction). As a result, your heart doesn't get enough oxygen-rich blood.

Risk factors

Small vessel disease is more common in women. Risk factors include:

- Tobacco use
- Unhealthy cholesterol levels
- High blood pressure
- Obesity (body mass index of 30 or higher)
- Unhealthy diet
- Inactive lifestyle
- Diabetes
- Insulin resistance
- Estrogen deficiency, in women
- Polycystic ovarian syndrome
- Increasing age, older than 45 in men and older than 55 in women
- Chronic inflammation

It's not clear why the same risk factors, such as obesity or an inactive lifestyle, cause some people to develop small vessel disease instead of large vessel coronary artery disease.

Complications

Because small vessel disease can make it harder for the heart to pump blood to the rest of the body, the condition, if untreated, can cause serious problems, such as:

- Coronary artery spasm
- Heart attack
- Congestive heart failure

Prevention

There are no studies about preventing small vessel disease, but it seems that controlling the disease's major risk factors — high blood pressure, high cholesterol and obesity — can help.

Things you can do that might reduce your risk include:

- **Don't smoke or use other tobacco products.** If you smoke, stop. Quitting other forms of tobacco use can also be helpful. Talk to your doctor if you have trouble quitting.
- **Eat a heart-healthy diet.** Eat a heart-healthy diet that includes whole grains, lean meat, low-fat dairy, and fruits and vegetables. Limit salt, sugar, alcohol, and saturated fat and trans fats.
- **Exercise regularly.** Regular exercise helps improve heart muscle function and keeps blood flowing through your arteries. It can also prevent a heart attack by helping you to achieve and maintain a healthy weight and control diabetes, elevated cholesterol and high blood pressure.

Exercise doesn't have to be vigorous. Walking 30 minutes a day five days a week can improve your health.

- **Check your cholesterol.** Have your blood cholesterol levels checked regularly through a blood test. If your "bad" cholesterol levels are high, your doctor can prescribe changes to your diet and medications to help lower the numbers and protect your cardiovascular health.
- **Control your blood pressure.** Ask your doctor how frequently you should have your blood pressure checked. He or she might recommend more-frequent checks if you have high blood pressure or a history of heart disease.
- **Maintain a healthy weight.** Excess weight strains your heart and can contribute to high cholesterol, high blood pressure and diabetes.
- **Manage stress.** Rethink workaholic habits and find healthy ways to minimize or deal with stressful events in your life. Yoga, meditation and listening to music can help reduce stress.
- **Control blood sugar levels if you have diabetes.** Keep your blood sugar at appropriate levels to help reduce the risk of complications. Work with your doctor to establish blood sugar goals that are right for you.

By Mayo Clinic Staff

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