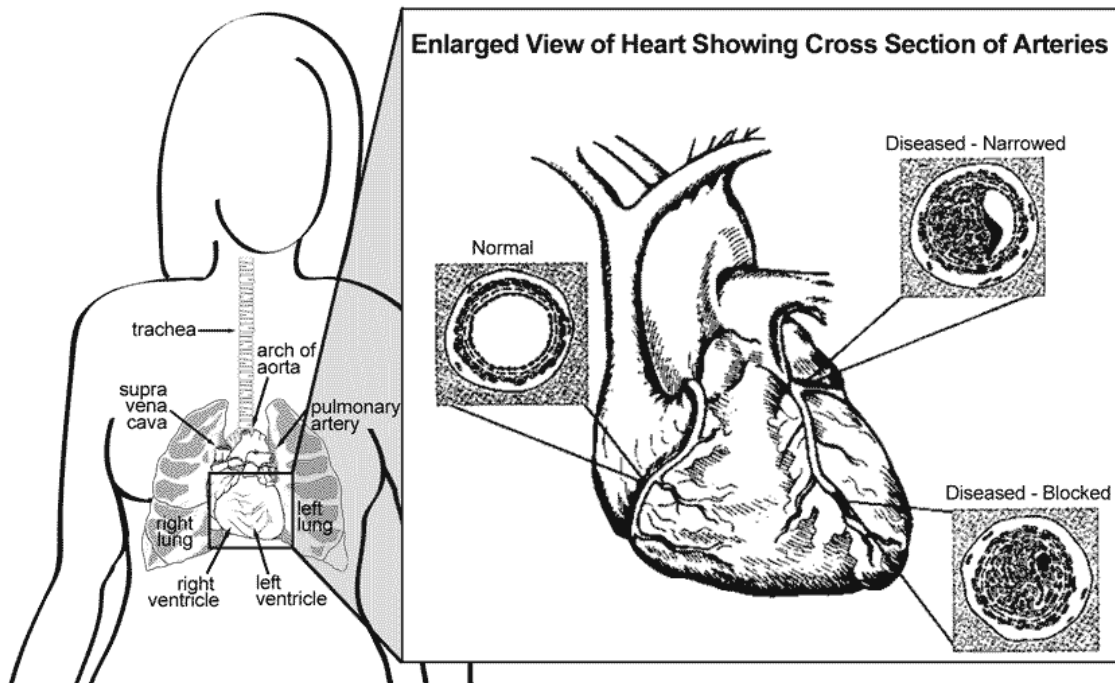




Frequently Asked Questions about Atherosclerosis

What is atherosclerosis?

Atherosclerosis is the buildup of fatty deposits called *plaque* on the inside walls of *arteries*. Arteries are blood vessels that carry oxygen and blood to the heart, brain, and other parts of the body. As plaque builds up in an artery, the artery gradually narrows and can become clogged. As an artery becomes more and more narrowed, less blood can flow through. The artery may also become less elastic (called “hardening of the arteries”). Atherosclerosis is the main cause of a group of diseases called *cardiovascular* diseases — diseases of the heart and blood vessels.



Enlargement Source: National Heart, Lung, and Blood Institute

Atherosclerosis can lead to clogged arteries in any part of the body. When the arteries to the heart are affected, *angina* (chest pain) or a heart attack may result. If arteries in the leg are affected, leg pain may occur. Atherosclerosis of the arteries to the brain can cause strokes.

Atherosclerosis is common in the United States. It often starts in childhood and the arteries become narrowed or clogged over many years.

What is plaque?

Plaque is a combination of cholesterol, other fatty materials, calcium, and blood components that stick to the artery wall lining. A hard shell or scar covers the plaque. Plaques have various sizes and shapes. Some plaques are unstable and can rupture or burst. When this happens, it causes blood clotting inside the artery. If a blood clot totally blocks the artery, it stops blood flow completely. This is what happens in most heart attacks and strokes.

What causes plaque to form in arteries?

Although many risk factors are well known, the exact causes of atherosclerosis are not clear. Too much cholesterol in the blood, damage to the artery wall, and inflammation appear to play important roles in plaque buildup. Researchers are studying why and how the arteries become damaged, how plaque develops and changes over time, and why plaque can break open and lead to blood clots. There may be other factors that prove to be important in causing atherosclerosis.

What are the symptoms of atherosclerosis?

There are usually no symptoms until one or more arteries are so clogged with plaque that blood flow is severely reduced. This reduced flow of blood and oxygen to some part of the body (such as the heart) is called *ischemia* and may cause pain or discomfort. Some people have no symptoms until a blood clot forms, completely blocks an already narrowed artery, and causes a heart attack or stroke.

The symptoms you have depend on which arteries are badly clogged and what part of the body is affected by the reduced flow of blood.

- If arteries taking blood to your heart muscle are affected, you have *coronary artery disease (CAD)*. You may have chest pain called *angina* that happens when you exert yourself and goes away when you rest. You could also have a heart attack.
- If arteries taking blood to your brain are affected, you have *cerebrovascular disease*. You could have a *transient ischemic attack (TIA)* or a stroke.
- If arteries taking blood to your legs are affected, you have *peripheral arterial disease (PAD)*. You may have pain in the calf or thigh muscle called *intermittent claudication* that happens when you walk. This kind of pain goes away when you stop and rest.

All of these conditions are serious and should not be ignored. Arteries taking blood to the intestines, the kidneys, or other organs can also become clogged by plaque. This can sometimes lead to a medical emergency similar to a heart attack or stroke. Atherosclerosis can also cause erectile dysfunction in men.

What risk factors raise my chances of having atherosclerosis?

These risk factors raise your chances of having atherosclerosis:

- having high blood *cholesterol*, especially high *LDL* (“bad cholesterol”) and low *HDL* (“good cholesterol”) levels
- aging and being male (women are affected more after *menopause*)

- having close relatives who had heart disease or a stroke at a relatively young age
- having high blood pressure
- having diabetes
- smoking
- having trouble managing stress
- being obese
- being physically inactive

The more risk factors you have, the more likely it is that you have atherosclerosis. Talk with your health care provider about your risks for atherosclerosis and cardiovascular disease.

How is atherosclerosis diagnosed?

If you don't have any symptoms and have not been diagnosed with cardiovascular disease, it is not easy to tell if your arteries are becoming clogged with plaque. But if you have high blood cholesterol, are overweight and get little exercise, smoke, or have other risk factors, there is a good chance that you have atherosclerosis. Eventually it can lead to heart disease, a stroke or other problems.

There are a number of tests that doctors use in diagnosing cardiovascular diseases, including blood tests, *electrocardiograms (ECG)*, stress testing, *coronary angiography*, *ultrasound*, and *computed tomography (CT)*. If you are at high risk for cardiovascular disease, your health care provider may suggest that you be tested.

Researchers are studying new tools to help find cardiovascular disease in earlier stages, before symptoms appear. For example, the National Heart, Lung, and Blood Institute is sponsoring a ten-year study called the Multi-Ethnic Study of Atherosclerosis (MESA). The MESA study will help show which risk factors are the best predictors of future heart disease in men and women and in certain ethnic groups.

How is atherosclerosis treated?

If your atherosclerosis leads to symptoms, the symptoms (such as angina) can be treated. Medicines are usually the first step in treating cardiovascular diseases. Other treatments include *angioplasty* procedures to open up clogged arteries and surgery, such as bypass surgery.

If you have high blood pressure, diabetes, or high blood cholesterol, these conditions can be treated as well. Lowering your blood cholesterol level can slow, stop, or even reverse the buildup of plaque. Cholesterol lowering can reduce the cholesterol content in unstable plaques to make them more stable and less prone to rupture.

One of the most important ways to have healthier arteries is to make lifestyle changes. Adopt a healthy diet, balance healthful eating with regular physical activity, don't smoke, and lose weight if you are overweight. If you have high blood cholesterol, high blood pressure or diabetes, follow your treatment plan. Making lifestyle changes can also help control these health problems.

Can I prevent or reverse atherosclerosis?

Yes. You can't do anything about your genes, your gender or your age, but you can adopt a healthy lifestyle.

- Maintain a healthy weight and avoid weight gain as you get older.
- Get plenty of regular exercise — at least 30 minutes a day, most days of the week.
- Eat a healthy diet low in saturated fat and rich in fruits and vegetables.
- If you have high blood cholesterol or high blood pressure, you may need medicine to help lower it. Stick to your treatment plan.
- If you have diabetes, follow your treatment plan.
- If you smoke, stop.
- If stress is a problem, find ways to reduce or control it.

Talk to your health care provider about what you can do to lower your risks for atherosclerosis and cardiovascular disease.

For more information...

For more information on atherosclerosis, contact the National Women's Health Information Center (NWHIC) at (800) 994-9662 (WOMAN) or the following organizations:

National Heart, Lung, and Blood Institute (NHLBI)

Phone Number (s): (301) 592-8573

Internet Address: <http://www.nhlbi.nih.gov/index.htm>

The Heart Truth

National Awareness Campaign for Women about Heart Disease National Heart, Lung and Blood Institute (NHLBI)

Internet Address: <http://www.nhlbi.nih.gov/health/hearttruth/index.htm>

National Cholesterol Education Program

National Heart, Lung, and Blood Institute (NHLBI)

Internet Address: <http://www.nhlbi.nih.gov/chd/>

National Institute of Neurological Disorders and Stroke

Phone Number (s): (800) 352-9424

Internet Address: <http://www.ninds.nih.gov/>

American Heart Association

Phone Number (s): (800) - 242-8721

Internet Address: <http://www.americanheart.org>

National Stroke Association

Phone Number (s): (800) 787-6537

Internet Address: <http://www.stroke.org/>

American College of Cardiology

Phone Number (s): (800) 253-4636

Internet Address: <http://www.acc.org/>

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