

# Arteriosclerosis / atherosclerosis

## Definition

[By Mayo Clinic staff](#)

Arteries are blood vessels that carry oxygen and nutrients from your heart to the rest of your body. Healthy arteries are flexible, strong and elastic. Over time, however, too much pressure in your arteries can make the walls thick and stiff — sometimes restricting blood flow to your organs and tissues. This process is called arteriosclerosis, or hardening of the arteries.

Atherosclerosis is a specific type of arteriosclerosis, but the terms are often used interchangeably. Atherosclerosis refers to the buildup of fats in and on your artery walls (plaques), which can restrict blood flow. These plaques can also burst, causing a blood clot. Although atherosclerosis is often considered a heart problem, it can affect arteries anywhere in your body. Atherosclerosis is a preventable and treatable condition.

[Symptoms](#)

## Symptoms

[By Mayo Clinic staff](#)

Atherosclerosis develops gradually. There are usually no atherosclerosis symptoms until an artery is so narrowed or clogged that it can't supply adequate blood to your organs and tissues. Sometimes a blood clot completely obstructs blood flow, or even breaks apart and causes blood clots that can trigger a heart attack or stroke.

Atherosclerosis symptoms depend on which arteries are affected. For example:

**If you have atherosclerosis in your heart arteries,** you may have symptoms similar to those of a heart attack, such as chest pain (angina).

**If you have atherosclerosis in the arteries leading to your brain,** you may have symptoms such as sudden numbness or weakness in your arms or legs, difficulty speaking or slurred speech, or drooping muscles in your face.

**If you have atherosclerosis in the arteries in your arms and legs,** you may have symptoms of peripheral arterial disease, such as leg pain when walking (intermittent claudication).

Sometimes atherosclerosis causes erectile dysfunction in men.

## Causes

[By Mayo Clinic staff](#)

Atherosclerosis is a slow, progressive disease that may begin as early as childhood. Although the exact cause is unknown, researchers suspect that atherosclerosis starts with damage or injury to the inner layer of an artery. The damage may be caused by:

High blood pressure

High cholesterol

An irritant, such as nicotine

Certain diseases, such as diabetes

Once the inner wall of an artery is damaged, blood cells called platelets often clump at the injury site to try to repair the artery, leading to inflammation. Over time, fatty deposits (plaques) made of cholesterol and other cellular waste products also accumulate at the injury and harden, narrowing your arteries. The organs and tissues connected to the blocked arteries then don't receive enough blood to function properly.

Eventually pieces of the fatty deposits may rupture and enter your bloodstream. This can cause a blood clot to form and damage your organs, such as in a heart attack. A blood clot can also travel to other parts of your body and partially or totally block blood flow to another organ.

## Complications

[By Mayo Clinic staff](#)

The complications of atherosclerosis depend on the location of the blocked arteries. For example:

**Coronary artery disease.** When atherosclerosis narrows the arteries close to your heart, you may develop coronary artery disease, which can cause chest pain (angina) or a heart attack.

**Carotid artery disease.** When atherosclerosis narrows the arteries close to your brain, you may develop carotid artery disease, which can cause a transient ischemic attack (TIA) or stroke.

**Peripheral artery disease.** When atherosclerosis narrows the arteries in your arms or legs, you may develop circulation problems in your arms and legs called peripheral arterial disease. This can make you less sensitive to heat and cold, increasing your risk of burns or frostbite. In rare cases, poor circulation in your arms or legs can cause tissue death (gangrene).

**Aneurysms.** Atherosclerosis can also cause aneurysms, a serious complication that can occur anywhere in your body. An aneurysm is a bulge in the wall of your artery. Pain and throbbing in the area of an aneurysm is a common symptom. If an aneurysm bursts, you may face life-threatening internal bleeding. Although this is usually a sudden, catastrophic event, a slow leak is possible. If a blood clot within an aneurysm dislodges, it may obstruct an artery at some distant point.

## Tests and diagnosis

[By Mayo Clinic staff](#)

Your doctor may find signs of narrowed, enlarged or hardened arteries during a physical exam. These include:

A weak or absent pulse below the narrowed area of your artery

Decreased blood pressure in an affected limb

Whooshing sounds (bruits) over your arteries, heard with a stethoscope

Signs of a pulsating bulge (aneurysm) in your abdomen or behind your knee

Evidence of poor wound healing in the area where your blood flow is restricted

Depending on the results of the physical exam, your doctor may suggest one or more diagnostic tests, including:

**Blood tests.** Lab tests can detect increased levels of cholesterol and blood sugar that may increase the risk of atherosclerosis.

**Doppler ultrasound.** Your doctor may use a special ultrasound device (Doppler ultrasound) to measure your blood pressure at various points along your arm or leg. These measurements can help your doctor gauge the degree of any blockages, as well as the speed of blood flow in your arteries.

**Ankle-brachial index.** This test can tell if you have atherosclerosis in the arteries in your legs and feet. Your doctor may compare the blood pressure in your ankle with the blood pressure in your arm. This is known as the ankle-brachial index. An abnormal difference may indicate peripheral vascular disease, which is usually caused by atherosclerosis.

**Electrocardiogram (ECG).** An electrocardiogram records electrical signals as they travel through your heart. An ECG can often reveal evidence of a previous heart attack or one that's in progress. If your signs and symptoms occur most often during exercise, your doctor may ask you to walk on a treadmill or ride a stationary bike during an ECG.

**Angiogram.** To better view blood flow through your heart, brain, arms or legs, your doctor may inject a special dye into your arteries before an X-ray. This is known as an angiogram. The dye outlines narrow spots and blockages on the X-ray images.

**Other imaging tests.** Your doctor may use ultrasound, a computerized tomography (CT) scan or a magnetic resonance angiogram (MRA) to study your arteries. These tests can often show hardening and narrowing of large arteries, as well as aneurysms and calcium deposits in the artery walls.

[Atherosclerosis](#). 2009 Apr;203(2):489-93. Epub 2008 Jul 19.