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**Notes:** Nurses can write personalized notes to patients here.

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## Atherosclerosis

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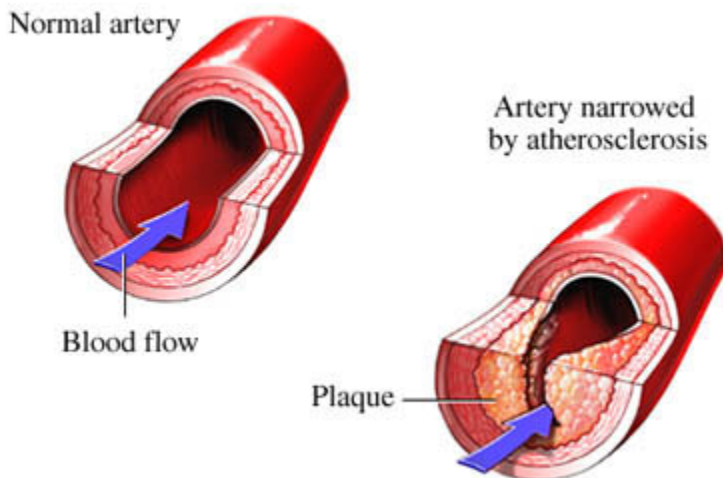
### Definition

Atherosclerosis is hardening of a blood vessel from a buildup of plaque. Plaque is made of fatty deposits, cholesterol, and calcium. Plaque buildup causes the artery to narrow and harden.

Plaque buildup can slow and even stop blood flow. This means the tissue supplied by the artery is cut off from its blood supply. This often leads to pain or decreased function. This condition can cause a number of serious health problems. Depending on the location of the blockage, it can cause:

- [Coronary heart disease](#) —Loss of blood to areas of the heart
- [Stroke](#) —Loss of blood to areas of the brain
- [Peripheral vascular disease](#) —Loss of blood to the extremities

### Atherosclerosis



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A hardened artery is more likely to be damaged. Repeated damage to the inner wall of an artery causes blood clots to form. The clots are called thrombi. They can lead to a further decrease in blood flow. A thrombus sometimes becomes so large that it completely closes off the artery. It could also break into clumps, called emboli. These clumps travel through the bloodstream and lodge in smaller arteries, blocking them off. The

tissue supplied by the artery receives no oxygen. It quickly dies. When this occurs in the heart, it is called a [heart attack](#). In the brain, it is called a [stroke](#).

Long-term atherosclerosis can also cause arteries to weaken. They may bulge under pressure. This bulge is called an aneurysm. If untreated, they can rupture and bleed.

## [Causes](#)

Atherosclerosis is caused by plaque. Plaque is created by high levels of cholesterol and fat in the blood. Scar tissue and calcium from vessel injury can also add to the plaque buildup.

The process leading to this may begin in childhood. It takes decades before it causes serious health problems.

## [Risk Factors](#)

Men, especially those over 45 years of age, are more likely to have this condition. Atherosclerosis is more common in women over 55 years of age. Factors that increase your chance of getting atherosclerosis include:

- Family history of the disease
- [High cholesterol](#) —Especially low-density lipoprotein (LDL) cholesterol and low high-density lipoprotein (HDL) cholesterol
- [High blood pressure](#)
- Poor diet
- Cigarette smoking
- [Diabetes type 1](#) and [type 2](#)
- Overweight and [obesity](#)
- Lack of physical activity
- [Metabolic syndrome](#) —A combination of 3 out of the following 5 findings:
  - Low HDL-cholesterol—Also called good cholesterol
  - High triglycerides
  - Elevated blood sugar
  - Elevated blood pressure
  - Increased waist circumference—greater than 40 inches in men and 35 inches in women

## [Symptoms](#)

Early atherosclerosis does not have any symptoms. Symptoms may begin to appear as the arteries become harder and narrower. Symptoms can occur suddenly if a clot blocks a blood vessel or a large blockage breaks free.

Symptoms depend on which arteries are affected. For example:

- Coronary arteries of the heart—May cause symptoms of heart disease, such as chest pain
- Arteries to the brain—May cause symptoms of a stroke such as weakness, vision problems, speech problems, or headache
- Arteries in the lower extremities—May cause pain in the legs or feet and trouble walking

## Diagnosis

Most people are diagnosed after they develop symptoms. However, people can be screened and treated for risk factors.

You will be asked questions to help determine what arteries might be affected. You will also be asked about your symptoms and medical history. A physical exam will be done. Tests will depend on which arteries may be involved. Many of these tests detect problems with the tissue that is not getting enough blood.

Tests that evaluate the atherosclerotic arteries are:

- [Angiography](#)
- [Cardiac catheterization](#)
- [Ultrasound](#)
- Electrocardiogram (ECG)

## Treatment

An important part of treatment is reducing risk factors. To do so, see the steps in the prevention section below. Treatment depends on the area of the body most affected.

Treatment may include:

### **Medication**

Medications can:

- Interfere with the forming of blood clots
- [Control blood pressure](#) if elevated
- [Lower cholesterol](#) if elevated
- Improve the flow of blood through narrowed arteries

### **Catheter-based Procedures**

These procedures involve a thin tube called a catheter. It is inserted into an artery. They are most often done for arteries in the heart. They may be used to treat atherosclerosis elsewhere in the body as well. These procedures include:

- [Balloon angioplasty](#) —A balloon-tipped catheter is used to press plaque against the wall of the artery. This increases the amount of space for the blood to flow.
- Stenting—Usually done after angioplasty. A wire mesh tube is placed in a damaged artery. It will support the wall of the artery and keep it open.
- [Atherectomy](#) —Instruments are inserted via catheter. They are used to cut away and remove plaque so that blood can flow more easily. This procedure is not used as often.

### **Surgery**

Surgical options include:

- [Endarterectomy](#) —Removal of the lining of an artery obstructed with large plaques. This is often done in carotid arteries of the neck. These arteries bring blood to the brain.
- Arterioplasty— [Repair of an aneurysm](#). It is usually done with synthetic tissue.
- [Bypass](#) —Creation of an alternate route for blood flow. The procedure uses a separate vessel for blood to flow.

## [Prevention](#)

Follow these methods to attempt to prevent and reverse atherosclerosis:

- Eat a healthy diet. It should be low in saturated fat and cholesterol. It should also be rich in whole grains, fruits, and vegetables.
- Exercise regularly.
- Maintain a healthy weight. If you are overweight, lose weight.
- Don't smoke. If you smoke, talk to your doctor about ways to [quit](#).
- Control any chronic conditions you may have, such as diabetes.
- If your doctor recommends it, take medication to reduce your risk factors. This may include medication for high blood pressure or high cholesterol.
- Talk to your doctor about screening tests for coronary artery disease if you have risk factors.

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