

Arteriosclerosis / atherosclerosis

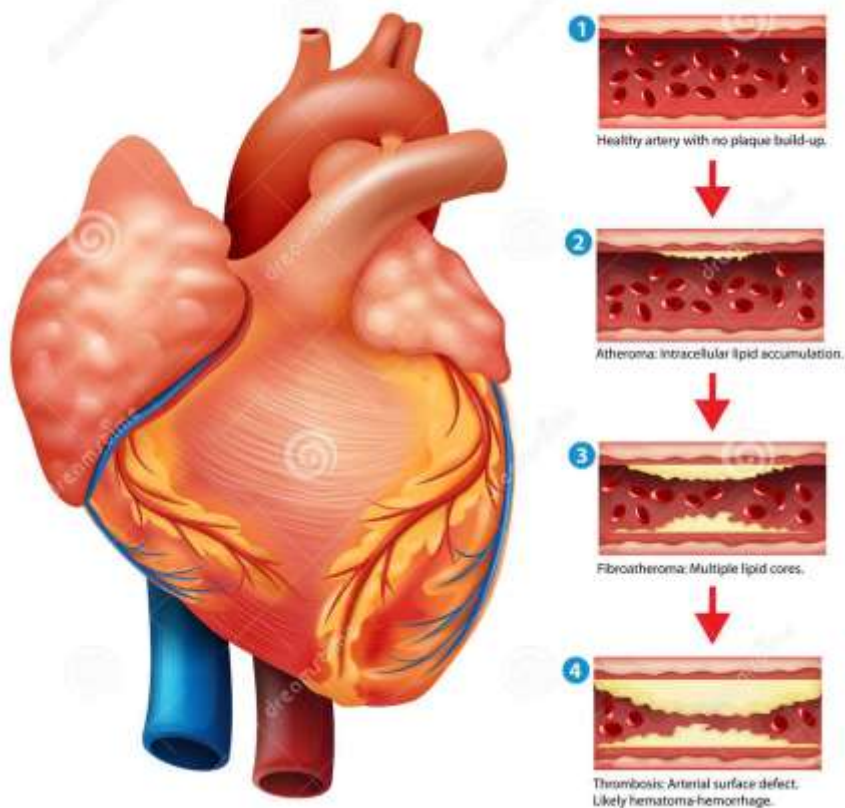
Definition

Arteriosclerosis occurs when the blood vessels that carry oxygen and nutrients from your heart to the rest of your body (arteries) become thick and stiff — sometimes restricting blood flow to your organs and tissues. Healthy arteries are flexible and elastic, but over time, the walls in your arteries can harden, a condition commonly called hardening of the arteries.

Atherosclerosis is a specific type of arteriosclerosis, but the terms are sometimes used interchangeably. Atherosclerosis refers to the buildup of fats, cholesterol and other substances in and on your artery walls (plaques), which can restrict blood flow.

These plaques can burst, triggering a blood clot. Although atherosclerosis is often considered a heart problem, it can affect arteries anywhere in your body. Atherosclerosis usually is preventable and is treatable.

Process of Arteriosclerosis



Symptoms

Atherosclerosis develops gradually. Mild atherosclerosis usually doesn't have any symptoms.

You usually won't have 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 blocks blood flow, or even breaks apart and can trigger a heart attack or stroke.

Symptoms of moderate to severe atherosclerosis depend on which arteries are affected. For example:

- **If you have atherosclerosis in your heart arteries**, you may have symptoms, such as chest pain or pressure (angina).
- **If you have atherosclerosis in the arteries leading to your brain**, you may have signs and symptoms such as sudden numbness or weakness in your arms or legs, difficulty speaking or slurred speech, or drooping muscles in your face. These signal a transient ischemic attack (TIA), which, if left untreated, may progress to a stroke.
- **If you have atherosclerosis in the arteries in your arms and legs**, you may have symptoms of peripheral artery disease, such as leg pain when walking (intermittent claudication).
- **If you have atherosclerosis in the arteries leading to your kidneys**, you develop high blood pressure or kidney failure.
- **If you have atherosclerosis in the arteries leading to your genitals**, you may have difficulties having sex. Sometimes, atherosclerosis can cause erectile dysfunction in men. In women, high blood pressure can reduce blood flow to the vagina, making sex less pleasurable.

Causes

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

- High blood pressure
- High cholesterol, often from getting too much cholesterol or saturated fats in your diet
- High triglycerides, a type of fat (lipid) in your blood
- Smoking and other sources of tobacco

- Diabetes
- Inflammation from diseases, such as arthritis, lupus or infections, or inflammation of unknown cause

Once the inner wall of an artery is damaged, blood cells and other substances often clump at the injury site and build up in the inner lining of the artery. Over time, fatty deposits (plaques) made of cholesterol and other cellular products also build up at the injury site 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 break off and enter your bloodstream. In addition, the smooth lining of a plaque may rupture, spilling cholesterol and other substances into your bloodstream. This may cause a blood clot, which can block the blood flow to a specific part of your body, such as occurs when blocked blood flow to your heart causes a heart attack. A blood clot can also travel to other parts of your body, blocking flow to another organ.

Treatments and drugs

Lifestyle changes, such as eating a healthy diet and exercising, are often the best treatment for atherosclerosis. Sometimes, medication or surgical procedures may be recommended as well.

Various drugs can slow — or even reverse — the effects of atherosclerosis. Here are some common choices:

- **Cholesterol medications.** Aggressively lowering your low-density lipoprotein (LDL) cholesterol, the "bad" cholesterol, can slow, stop or even reverse the buildup of fatty deposits in your arteries. Boosting your high-density lipoprotein (HDL) cholesterol, the "good" cholesterol, may help, too. Your doctor can choose from a range of cholesterol medications, including drugs known as statins and fibrates. In addition to lowering cholesterol, statins have additional effects that help stabilize the lining of your heart arteries and prevent atherosclerosis.
- **Anti-platelet medications.** Your doctor may prescribe anti-platelet medications, such as aspirin, to reduce the likelihood that platelets will clump in narrowed arteries, form a blood clot and cause further blockage.
- **Beta blocker medications.** These medications are commonly used for coronary artery disease. They lower your heart rate and blood pressure, reducing the demand on your heart and often relieve symptoms of chest pain. Beta blockers reduce the risk of heart attacks and some heart rhythm problems.

- **Angiotensin-converting enzyme (ACE) inhibitors.** These medications may help slow the progression of atherosclerosis by lowering blood pressure and producing other beneficial effects on the heart arteries. ACE inhibitors can also reduce the risk of recurrent heart attacks.
- **Calcium channel blockers.** These medications lower blood pressure and are sometimes used to treat angina.
- **Water pills (diuretics).** High blood pressure is a major risk factor for atherosclerosis. Diuretics lower blood pressure.
- **Other medications.** Your doctor may suggest certain medications to control specific risk factors for atherosclerosis, such as diabetes. Sometimes specific medications to treat symptoms of atherosclerosis, such as leg pain during exercise, are prescribed. Sometimes more aggressive treatment is needed. If you have severe symptoms or a blockage that threatens muscle or skin tissue survival, you may be a candidate for one of the following surgical procedures:

- **Angioplasty and stent placement.** In this procedure, your doctor inserts a long, thin tube (catheter) into the blocked or narrowed part of your artery. A second catheter with a deflated balloon on its tip is then passed through the catheter to the narrowed area. The balloon is then inflated, compressing the deposits against your artery walls. A mesh tube (stent) is usually left in the artery to help keep the artery open.
- **Endarterectomy.** In some cases, fatty deposits must be surgically removed from the walls of a narrowed artery. When the procedure is done on arteries in the neck (the carotid arteries), it's called a carotid endarterectomy.
- **Thrombolytic therapy.** If you have an artery that's blocked by a blood clot, your doctor may use a clot-dissolving drug to break it apart.
- **Bypass surgery.** Your doctor may create a graft bypass using a vessel from another part of your body or a tube made of synthetic fabric. This allows blood to flow around the blocked or narrowed artery.

Prevention

The same healthy lifestyle changes recommended to treat atherosclerosis also help prevent it. These include:

- Quitting smoking
- Eating healthy foods
- Exercising regularly
- Maintaining a healthy weight

Just remember to make changes one step at a time, and keep in mind what lifestyle changes are manageable for you in the long run.