

Peripheral artery disease - legs

Definition

Peripheral artery disease is a condition of the blood vessels that leads to narrowing and hardening of the arteries that supply the legs and feet.

The narrowing of the blood vessels leads to decreased blood flow, which can injure nerves and other tissues.

Alternative Names

Peripheral vascular disease; PVD; PAD; Arteriosclerosis obliterans; Blockage of leg arteries; Claudication; Intermittent claudication; Vaso-occlusive disease of the legs; Arterial insufficiency of the legs; Recurrent leg pain and cramping; Calf pain with exercise

Causes

Peripheral artery disease is caused by arteriosclerosis, or "hardening of the arteries." This problem occurs when fatty material (plaque) builds up on the walls of your arteries. This causes the arteries to become narrower. The walls of the arteries also become stiffer and cannot widen (dilate) to allow greater blood flow when needed.

As a result, when the muscles of your legs are working harder (such as during exercise or walking) they cannot get enough blood and oxygen. Eventually, there may not be enough blood and oxygen, even when the muscles are resting.

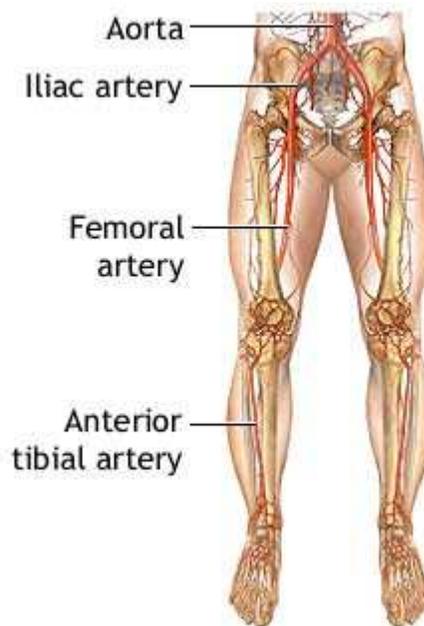
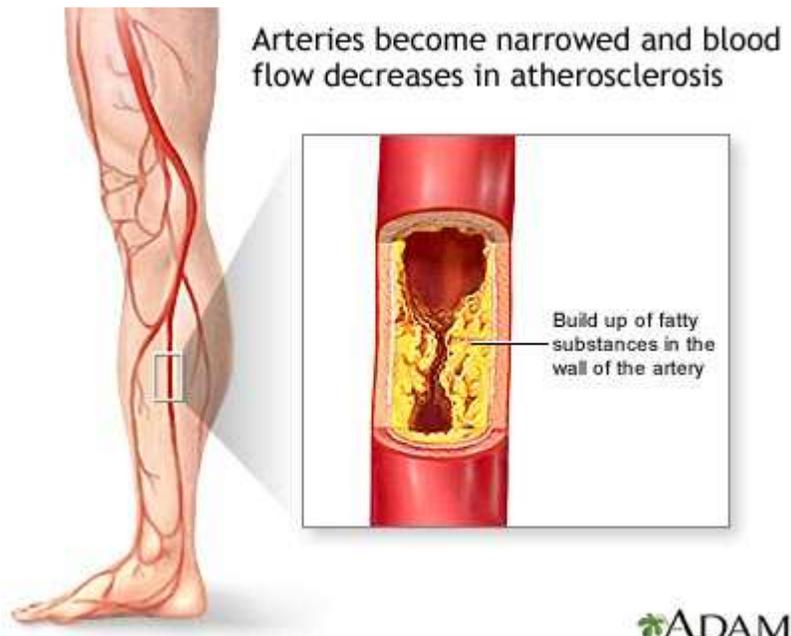
Peripheral artery disease is a common disorder that usually affects men over age 50. People are at higher risk if they have a history of:

- Abnormal cholesterol
- Diabetes
- Heart disease (coronary artery disease)
- High blood pressure (hypertension)
- Kidney disease involving hemodialysis
- Smoking
- Stroke (cerebrovascular disease)

Symptoms

The classic symptoms are pain, achiness, fatigue, burning, or discomfort in the muscles of your feet, calves, or thighs. These symptoms usually appear during walking or exercise and go away after several minutes of rest.

- At first, these symptoms may appear only when you walk uphill, walk faster, or walk for longer distances.



ADAM.

ADAM.

- Slowly, these symptoms come on more quickly and with less exercise.

Your legs or feet may feel numb when you are at rest. The legs also may feel cool to the touch, and the skin may appear pale.

When peripheral artery disease becomes severe, you may have:

- Impotence
- Pain and cramps at night
- Pain or tingling in the feet or toes, which can be so severe that even the weight of clothes or bed sheets is painful
- Pain that is worse when the leg is elevated and improves when you dangle your legs over the side of the bed
- Ulcers that do not heal

Exams and Tests

During an examination, the health care provider may find:

- A whooshing sound with the stethoscope over the artery (arterial bruits)
- Decreased blood pressure in the affected limb
- Loss of hair on the legs or feet
- Weak or absent pulses in the limb

When PAD is more severe, findings may include:

- Calf muscles that shrink (wither)
- Hair loss over the toes and feet
- Painful, non-bleeding ulcers on the feet or toes (usually black) that are slow to heal
- Paleness of the skin or blue color in the toes or foot (cyanosis)
- Shiny, tight skin
- Thick toenails

Blood tests may show high cholesterol or diabetes.

Tests for peripheral artery disease:

- Angiography of the arteries in the legs (arteriography)
- Blood pressure measured in the arms and legs for comparison (ankle/brachial index, or ABI)
- Doppler ultrasound exam of an extremity
- Magnetic resonance angiography or CT angiography

Treatment

Self-care:

- Balance exercise with rest. Walk or do another activity to the point of pain and alternate it with rest periods. Over time, your circulation may improve as new, small (collateral) blood vessels form. Always talk to the doctor before starting an exercise program.
- Stop smoking. Smoking tightens arteries, decreases the blood's ability to carry oxygen, and increases the risk of forming clots (thrombi and emboli).
- Take care of your feet, especially if you also have diabetes. Wear shoes that fit properly. Pay attention to any cuts, scrapes, or injuries, and see your doctor right away. The tissues heal slowly and are prone to infection when there is decreased circulation. See: Diabetes foot care for more information.
- Make sure your blood pressure is well controlled.
- Reduce your weight, if you are overweight.
- If your cholesterol is high, eat a low-cholesterol and low-fat diet. See: Heart-healthy diet.
- Monitor your blood sugar levels if you have diabetes, and keep them under control.

Medications may be needed to control the disorder, including:

- Aspirin or a medicine called clopidogrel (Plavix), which keeps your blood from forming clots in your arteries. Do NOT stop taking these medications without first talking with your doctor.
- Cilostazol, a medication to enlarge (dilate) the affected artery or arteries for moderate-to-severe cases that are not candidates for surgery
- Medicine to help lower your cholesterol
- Pain relievers

If you are taking medicines for high blood pressure or diabetes, take them as your doctor has prescribed.

Surgery may be performed if the condition is severe and is affecting your ability to work or do important activities, or you are having pain at rest. Options are:

- Angioplasty and stent placement of the peripheral arteries (this is similar to the technique used to open the coronary arteries, but it is performed on the blood vessels of the affected leg)
- Peripheral artery bypass surgery of the leg

Some people with peripheral artery disease may need to have the limb removed (amputated). See: Leg or foot amputation.

Outlook (Prognosis)

You can usually control peripheral artery disease of the legs without surgery. Surgery provides good symptom relief in severe cases.

For complications, the affected leg or foot may need to be amputated.

Possible Complications

- Blood clots or emboli that block off small arteries
- Coronary artery disease
- Impotence
- Open sores (ischemic ulcers) on the lower legs
- Tissue death (gangrene) -- see gas gangrene

When to Contact a Medical Professional

Call your health care provider if you have:

- A leg or foot that becomes cool to the touch, pale, blue, or numb
- Chest pain or shortness of breath with leg pain
- Leg pain that does not go away, even when you are not walking or moving (called rest pain)
- Legs that are red, hot, or swollen
- New sores/ulcers
- Signs of infection (fever, redness, general ill feeling)
- Symptoms of arteriosclerosis of the extremities

References

Creager MA, Libby P. Peripheral arterial disease. In: Libby P, Bonow RO, Mann DL, Zipes DP. *Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine*. 8th ed. Philadelphia, Pa: Saunders; 2007:chap 57.

Aung PP, Maxwell HG, Jepson RG, Price JF, Leng GC. Lipid-lowering for peripheral arterial disease of the lower limb. *Cochrane Database Syst Rev*. 2007;4:CD000123.

Sobel M, Verhaeghe R; American College of Chest Physicians. Antithrombotic therapy for peripheral artery occlusive disease: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (8th Edition). *Chest*. 2008;133:815S-843S.



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