

Peripheral Vascular Disease

Expertise in Matters of the Heart

When the fatty deposits of calcium and plaque build up in arteries in your legs or arms, this is called peripheral vascular disease (PVD). The blood vessels narrow and vital blood flow becomes limited to those parts of your body below the atherosclerosis. When the flow of blood decreases, you can gradually lose normal function in your legs and arms. The same risk factors for heart disease also affect peripheral vascular disease.

They are:

- high cholesterol levels in your blood
- smoking
- high blood pressure
- being overweight
- lack of exercise
- family history of heart disease
- stress
- diabetes

Peripheral vascular disease often causes major lifestyle changes, requiring people to adjust work and physical activity because of their pain. They also may be unable to sleep due to pain at rest. When lifestyle changes, such as exercise and dieting to lose weight, do not control peripheral vascular disease, patients have a number of treatment options. They include angioplasty, stents, atherectomy, thrombolytic (clot dissolving) medicine, and bypass grafts.

DIAGNOSTIC TESTS

When symptoms occur, your doctor may recommend diagnostic tests to evaluate the narrowing of the arteries. If the diagnostic tests show the blockage is severe, then another test called an arteriogram or aortogram will be done.



PRESSURE MEASUREMENTS

Blood pressures are often measured at the ankle and at different places on the limbs. These measurements help the doctor to identify the level of the obstruction.

PLETHYSMOGRAPHY

Plethysmography measures blood-volume changes that occur with each heart beat. This test is most helpful for patients with diabetes or calcified blockages.

DOPPLER ULTRASOUND

Doppler ultrasound is a painless test which measures blood flow, and provides an image of the inside of the arteries. It does this by using sound waves to determine if there is a narrowing. If the test shows that the narrowing is severe, then an angiogram or aortogram may be performed.

STRESS TESTING FOR PVD

Stress testing on a treadmill evaluates functional disability that arterial blockages may produce. An ankle blood pressure is taken at rest. The person walks on the

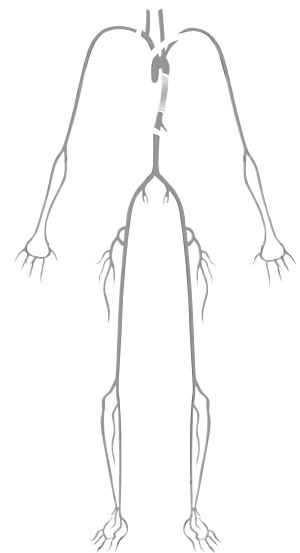
treadmill for 5 minutes, or until they feel cramps or pain. An ankle blood pressure is repeated. Normally, the ankle blood pressure will rise with exercise. With arterial blockages, the ankle blood pressure will drop after exercise.

TRANSCUTANEOUS OXYGEN MEASUREMENT (TCOM)

TCOM measures the amount of oxygen delivered to the skin, providing information about arterial blood flow to that area. TCOM measurements are taken at the area of a suspected blockage and the chest before and after treatments, such as hyperbaric oxygen therapy, peripheral angioplasty, or surgery.

ANGIOGRAM

If earlier tests reveal a severe drop in blood flow, an angiogram is performed to evaluate blockages that may be present. Using a special dye, this series of x-rays shows how blood is flowing through the blood vessels, and provides a detailed image of the narrowed or blocked arteries.



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Before the Procedure

- Before this test, blood work is ordered.
- The day of the procedure, you are asked to arrive early and have someone available to drive you home.
- An IV line is started and the groin site is scrubbed with a special solution.

During the Procedure

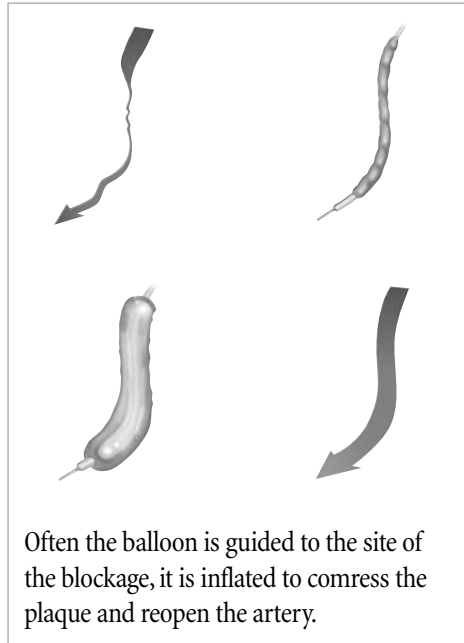
- You remain awake during the procedure, which takes approximately 1 hour.
- During the test, the doctor inserts a catheter (thin, plastic tube) into a blood vessel in the groin. A special dye is injected to help show blockages in the arteries on the x-ray.
- Once the procedure is complete, the catheter is removed and pressure is held to the groin site for about 30 minutes. In some cases, a collagen plug is inserted at the site to close the incision. This allows for earlier discharge home.

Treatments

Many treatments can be used to improve blood flow through the peripheral arteries. Most procedures can be done as an outpatient. Techniques now available include balloon angioplasty, stents, atherectomy, and thrombolytic medicine.

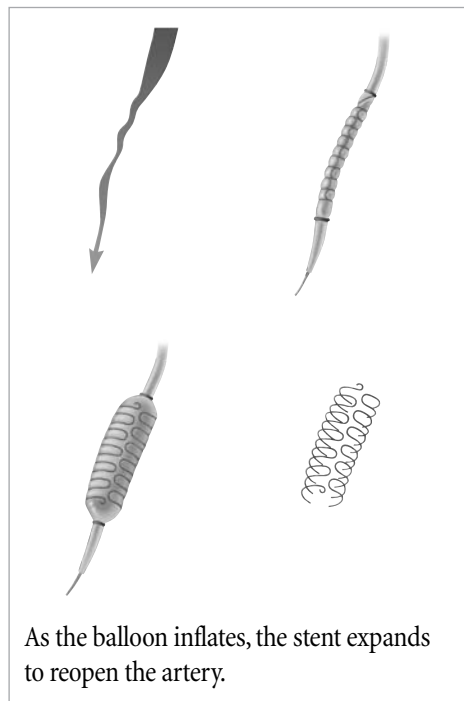
Peripheral angioplasty

Peripheral angioplasty is performed in both large and small blood vessels of the arms, legs, and abdomen. In this procedure, a small balloon is inserted into the blood vessel, with the help of special x-rays, and moved to the site of the blocked artery. The balloon is inflated and it compresses the plaque in the blockage. That increases blood flow through the artery. The long-term success of the treatment depends on the size and length of the blockage. it is inflated to compress the plaque and reopen the artery.



Arterial stents

Various metal stents can be placed in an artery to improve the success of angioplasty by helping keep the artery open. These stents are left indefinitely. After about 6 weeks, a thin layer of tissue covers the stent and it becomes a part of the blood vessel.



Atherectomy

This procedure is not used often and is reserved for calcified areas in the blood vessels. A rotating catheter is inserted into the blood vessel and shaves the plaque into tiny particles.

Thrombolytic medicine

Many partially-blocked arteries may become completely blocked by a clot. Your doctor may choose to give a clot-dissolving medicine in the artery. The infusion of the medicine lasts several hours. A repeat angiogram may be done to assess the need for further treatment. Although often effective, the expense of the drug and risk of bleeding limits its use to certain patients. Because of the risk for bleeding, you may be monitored in the hospital for several days.

Bypass grafts

In this procedure, a vein from another part of the body, or a synthetic graft, is used to create a detour around the blocked artery. Bypass grafts presently require surgery, but other ways of placing the grafts without major surgery are now being developed.

Your Recovery

- These treatment procedures can be performed on an outpatient basis. An overnight stay may be required in certain situations.
- Afterward, you are taken to a nursing unit or recovery area.
- A nurse continuously checks the catheter insertion area (groin) for any signs of bleeding, and the pulses to the arms and feet.
- You need to lie flat for several hours, or until there is no longer any risk of bleeding. Then you are discharged.
- Medicines are prescribed, including antiplatelet drugs and aspirin. You may take these for 2 or more weeks to prevent clot formation at the site.

ON THE DAY YOU GO HOME

- don't drive
- don't exercise
- avoid walking and climbing stairs
- avoid bending or lifting

CALL YOUR DOCTOR IF:

- you notice a lump or bleeding at the groin site
 - you feel pain at the groin site unrelieved by Tylenol
 - you become lightheaded or dizzy
 - you have leg pain or numbness
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For more information call (970) 221-1000, (800) 459-4241, or visit www.heartcenteroftherockies.com