



FACTS ABOUT PERIPHERAL ARTERY DISEASE (PAD)

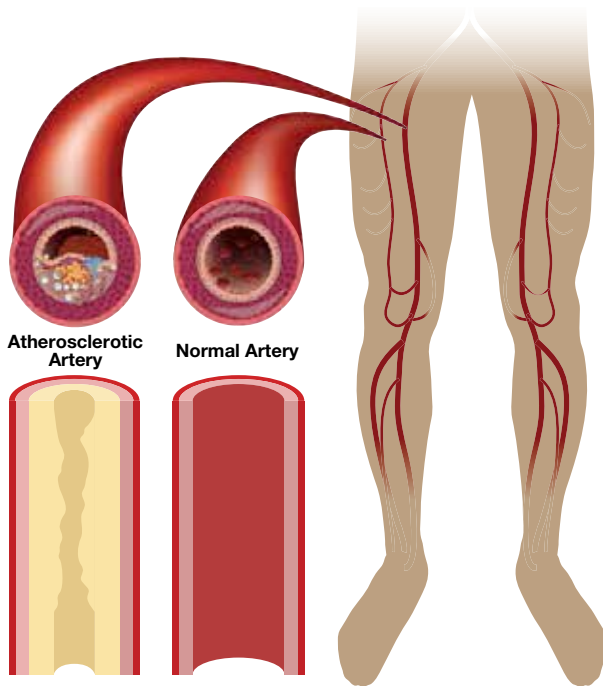


National Heart, Lung,
and Blood Institute



What is PAD?

PAD develops when the blood vessels (arteries) that carry oxygen-rich blood to your legs become clogged with fatty deposits called plaque. The most common type of PAD is called “lower extremity PAD,” which reduces blood flow to the legs and feet. You may have lower extremity PAD if you have muscle pain or weakness that begins as a result of physical activity, such as walking, and stops within minutes after resting. About 1 in 4 people with PAD have these symptoms. Other people with PAD have different symptoms or no symptoms at all.



Sometimes people mistake the symptoms of PAD for common aches and pains, or they think it's a normal part of aging. If you have leg pain or numbness and are at risk for PAD, call your doctor. Getting treatment and making healthy lifestyle changes can lower your chance of serious complications, including amputation or even death.

What should I know about PAD?

PAD raises your risk for leg and foot problems that can limit your mobility. If left untreated, it increases your risk of serious complications such as heart attack, stroke, or limb loss. This is true even if you don't have PAD symptoms.

Plaque buildup (also known as atherosclerosis) often affects blood vessels in more than one part of the body. For instance, coronary heart disease affects blood vessels in the heart and carotid artery disease affects arteries supplying blood to the brain. These diseases are more common in people who have PAD.

Early diagnosis and treatment of PAD can help relieve your symptoms and reduce your risk of other serious health problems.

The screening test for PAD is simple and painless. Early treatment of PAD can restore your mobility; lower your risk of amputation, heart attack, and stroke; and possibly save your life.

Visit www.nhlbi.nih.gov to learn more.



Am I at risk for PAD? ———

The following health conditions and lifestyle habits raise your risk for PAD:

- **Age.** Your risk for PAD goes up as you get older. Most people in the United States who have PAD are age 65 or older.
- **Smoking and secondhand smoke.** People who smoke now or have smoked in the past have a much higher risk of PAD. If you stop smoking, you can lower your risk by up to 75%. Even if you don't smoke yourself, your risk increases if you regularly breathe in secondhand smoke.
- **Diabetes.** People who have diabetes are four times more likely to get PAD. Diabetes also raises your risk of complications from PAD, such as wounds that are slow to heal, which could lead to amputation. You can reduce this risk by controlling your diabetes and taking care of your feet.
- **Race or ethnicity.** PAD is most common in African Americans, affecting nearly 1 in 10 over age 40. More than 1 in 20 American Indians/Alaska Natives have PAD, which is about the same as for non-Hispanic white Americans. About 1 in 40 Hispanic or Latino or Asian people living in the United States have PAD.
- **Sex.** Men and women have a similar risk of developing PAD, but the disease affects men and women differently. Women are more likely than men to have PAD without symptoms. Women also often have more PAD complications, such as problems walking.
- **Family history.** A family history of PAD, heart disease, or stroke raises your PAD risk.
- **Lifestyle habits.** A lack of physical activity, an unhealthy diet high in saturated fat, and stress can all raise your risk of developing PAD.
- **Other medical conditions and diseases.** Atherosclerosis in other parts of your body, chronic kidney disease, obesity, high blood pressure, and unhealthy cholesterol or high triglyceride levels are all risk factors for PAD.
- **Pregnancy complications.** Your risk for PAD later in life is higher if you had preeclampsia (high blood pressure that develops during pregnancy) or gestational diabetes.

You can take steps to lower your risk of getting PAD. Quit smoking, reduce unhealthy levels of cholesterol and triglycerides, control high blood pressure, aim for a healthy weight, and get regular physical activity. Also, be aware of the role that risk factors such as race and ethnicity can play. Finally, get tested for PAD *early* if you think you have symptoms.

What are some symptoms of PAD?

If you have PAD, you may have one or more of these symptoms:

- **Pain, achiness, heaviness, or cramping in your legs during activity**, such as when walking or climbing stairs, that goes away after rest. The pain is often in the calf muscle, but you may also feel pain in your buttocks, thigh, or foot. This pain is called intermittent claudication and is the most common PAD symptom. It should not be ignored or accepted as a natural part of aging.
- **Lack of growth of your toenails and leg hair.**
- **Feelings of coldness that occur more in one foot** than the other.
- **Skin color changes**, such as a leg or foot that turns pale, discolored, or blue.
- **Leg or foot weakness or numbness**, which may make you feel off-balance or make it harder to walk.
- **Pain or a feeling of pins and needles** in your leg or foot.
- **Pain in your leg and foot while resting**, also called rest pain, which can be a symptom of severe PAD, known as critical limb ischemia (CLI).
- **Sores or wounds** on your toes, feet, or legs that heal slowly or not at all.

When to call 911

If you experience the following symptoms, **call 911 right away**.

- **Sudden loss of feeling, blue or pale color, or coldness in your foot** are signs of a sudden drop in blood flow to your leg, called acute limb ischemia. This is a medical emergency that must be treated right away to avoid amputation or other serious problems.
- **Fever or chills, redness or swelling, or other signs of serious infection.** Sores that develop on your feet due to poor blood flow are at risk of becoming infected. An infection must be treated to prevent its spread to the bones or bloodstream. The risk of these problems is higher for people who have PAD and diabetes. Talk to your doctor about your risk and what to look for.

About 1 in 4 people who have PAD have the classic symptom of pain in their legs during activity. But many people with PAD have other symptoms or no symptoms at all. Even without symptoms, your risk of heart attack and stroke is higher because of PAD. Ask your doctor about getting tested if you smoke, have diabetes, are over age 65, or have other risk factors for PAD.

How is PAD diagnosed?

During an exam to look for signs of PAD, your doctor will take these steps:

- **Check for weak pulses** in your legs.
- **Listen for poor blood flow in your legs**, using a stethoscope to listen for an abnormal whooshing sound called a bruit.
- **Look for problems on your legs and feet**, including hair loss, sores, and cold or pale skin.

Your doctor may also order some of the following tests and procedures:

- **Blood tests** to check your cholesterol, triglyceride, and blood sugar levels.
- **Ankle-brachial index (ABI) test** to compare blood pressure in your ankle with the blood pressure in your arm. Your doctor uses a blood pressure cuff and an ultrasound device for this painless test. Your doctor may also do the ABI test after you walk on a treadmill to show what level of physical activity produces your symptoms.
- **Doppler ultrasound** to locate areas of reduced blood flow or blockages in your leg arteries and then measure how fast blood is flowing through them.
- **Angiography imaging using contrast dye** to give doctors a closer look at the affected arteries and find partial or complete blockages.

How is PAD treated?

Treatment depends on how severe your PAD is and what other health problems you may develop or already have. You and your healthcare provider can work together to set up a plan for managing your PAD with lifestyle changes and other treatment options.

Heart-healthy lifestyle changes

- **Quit smoking.** Quitting can reduce your symptoms and your risk of PAD complications.
- **Choose heart-healthy foods.** A heart-healthy eating plan features fruits, vegetables, and whole grains and limits saturated fats, sodium (salt), added sugars, and alcohol. Consider following the Dietary Approaches to Stop Hypertension (DASH) eating plan, a science-based approach to eating that has many heart health benefits (www.nhlbi.nih.gov/DASH).
- **Aim for a healthy weight.** If you are affected by overweight or obesity, losing just 3% to 5% of your current weight can help you manage some PAD risk factors, such as high cholesterol and diabetes. Losing even more weight can lower your blood pressure.
- **Get regular physical activity.** Staying physically active can help you manage PAD risk factors such as high cholesterol, high blood pressure, and overweight or obesity. If you haven't been active for a while, start low and build slow. Many people like to start with walking and slowly increase their time and distance. Before starting any exercise program, ask your doctor what level of physical activity is right for you. Take a look at the Physical Activity Guidelines for Americans for recommendations (<https://health.gov/our-work/physical-activity>).

- **Manage stress.** Learning how to manage stress, relax, get good-quality sleep, and cope with problems can improve your emotional and physical health.

Exercise therapy

If you have PAD, your doctor will likely recommend a special exercise program to help relieve symptoms and improve your ability to walk and carry out daily activities. This may be a supervised exercise program that takes place in a clinic or a hospital or involves walking outside at home or on a treadmill. If exercising at home, talk with your doctor regularly about your progress.

Medicines

In addition to recommending an exercise program, your doctor may prescribe one of the following types of medications:

- **Antiplatelet medicines**, which prevent blood clots and lower the risk of heart attack or stroke. Doctors may also recommend an **anticoagulant medicine**, or blood thinner, to help prevent blood clots.
- **Statins**, which slow the plaque buildup in the arteries that is causing your symptoms. They also lower your risk of complications from PAD.
- **Blood pressure-lowering medications** such as ACE inhibitors and angiotensin II receptor blockers (ARBs) or others.

Procedures or surgery

If lifestyle changes, an exercise program, and medicines do not work well enough, your doctor may recommend a procedure to improve blood flow to the leg below the level of the blockage, such as:

- **Angioplasty**, which opens narrowed or blocked arteries through a catheter placed inside the affected vessel.
- **Bypass surgery**, which involves inserting a tube made of natural or synthetic material to create a path for the blood around the blocked artery.

Questions to Discuss With Your Healthcare Provider

- Does my medical history raise my risk for PAD? If so, what symptoms and signs should I watch for?
- Which screening tests or exams will I need?
- If I have PAD, what steps should I take to treat it?
- Will PAD increase my risks for other conditions?
- How can I quit smoking?
- Is my blood sugar level high? What should I do about it?
- What is my blood pressure? Do I need to do anything about it?
- What are my cholesterol levels? Do I need to do anything about them?
- What type of specialists treat PAD or CLI?
- What are the options for my treatment plan?