



# Facts About Peripheral Arterial Disease (P.A.D.)

**One in every 20 Americans over the age of 50 has P.A.D., a condition that raises the risk for heart attack and stroke.**

Peripheral arterial disease, or P.A.D., develops when your arteries become clogged with plaque—fatty deposits that limit blood flow to your legs. **Just like clogged arteries in the heart, clogged arteries in the legs mean you are at risk for having a heart attack or stroke.**

Plaque buildup in the legs does not always cause symptoms, so many people can have P.A.D. and not know it. People who do experience symptoms, such as pain or cramping in the legs, often do not report them, believing they are a natural part of aging or due to another cause. In all, P.A.D. affects 8 to 12 million people in the United States, especially those over 50.

**You can lower your risk for P.A.D.** This fact sheet answers key questions about P.A.D. and provides steps you can take to reduce your risk. Timely detection and treatment of P.A.D. can improve the quality of your life; help you keep your independence and mobility; and reduce your risk of heart attack, stroke, leg amputation, and even death. Taking steps to learn about P.A.D., including asking your health care provider to check your risk, can help you stay in circulation longer to enjoy your life.



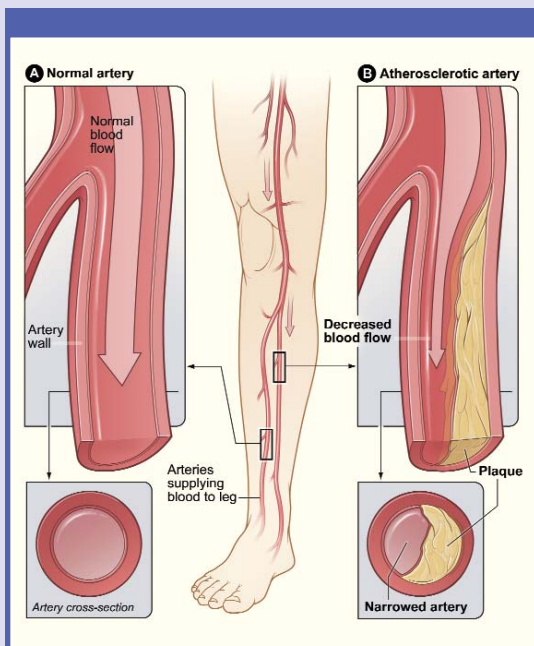
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES  
National Institutes of Health  
National Heart, Lung, and Blood Institute

# Stay in Circulation

Take Steps to Learn About P.A.D.

## What is P.A.D.?

Peripheral arterial disease—also known as P.A.D.—is a common, yet serious, disease. It occurs when extra cholesterol and other fats circulating in the blood collect in the walls of the arteries that supply blood to your limbs. This buildup—called plaque—narrows your arteries, often reducing or blocking the flow of blood. P.A.D. is most commonly seen in the legs, but also can be present in the arteries that carry blood from your heart to your head, arms, kidneys, and stomach. Nearly everyone who has P.A.D.—even those who do not have leg symptoms—suffers from an inability to walk as fast or as far as they could before P.A.D.



The illustration shows a normal artery with normal blood flow (Figure A) and an artery containing plaque buildup (Figure B).

## What Causes P.A.D.?

The cause of plaque buildup in the limbs is unknown in most cases. However, there are some conditions and habits that raise your chance of developing P.A.D.

Your risk increases if you:

- **Are over the age of 50.**
- **Smoke or used to smoke.** Those who smoke or have a history of smoking have up to four times greater risk of P.A.D.
- **Have diabetes.** One in every three people over the age of 50 with diabetes is likely to have P.A.D.
- **Have high blood pressure.** Also called hypertension, high blood pressure raises the risk of developing plaque in the arteries.
- **Have high blood cholesterol.** Excess cholesterol and fat in your blood contribute to the formation of plaque in the arteries, reducing or blocking blood flow to your heart, brain, or limbs.
- **Have a personal history of vascular disease, heart attack, or stroke.** If you have heart disease, you have a one in three chance of also having P.A.D.
- **Are African American.** African Americans are more than twice as likely to have P.A.D. as their white counterparts.

**Most people with P.A.D. have one or more conditions or habits that raise the risk for heart disease: smoking, diabetes, high blood pressure, and/or high blood cholesterol.**



## What are the Signs and Symptoms of P.A.D.?

If they are present, the typical signs and symptoms of the disease include:

- **Claudication**—fatigue, heaviness, tiredness, cramping in the leg muscles (buttocks, thigh, or calf) that occurs during activity such as walking or climbing stairs. This pain or discomfort goes away once the activity is stopped and during rest. **Many people do not report this problem to their health care providers because they think it is a natural part of aging or due to some other cause.**
- **Pain in the legs and/or feet** that disturbs sleep.
- **Sores or wounds on toes, feet, or legs** that heal slowly, poorly, or not at all.
- **Color changes in the skin of the feet**, including paleness or blueness.
- **A lower temperature in one leg** compared to the other leg.
- **Poor nail growth and decreased hair growth on toes and legs.**

However, most people with P.A.D. do not experience symptoms.

If you believe you are at risk for P.A.D., discuss this concern with your health care provider. Find out if you should be tested for P.A.D. and what you can do to lower your risk.

## How is P.A.D. Diagnosed?

Many types of health care providers diagnose and treat P.A.D. Whether you see a family physician, internist, physician assistant, or nurse practitioner, the first step is to ask about your risk for P.A.D. Your provider will take a medical and family history, perform a physical exam, and conduct diagnostic tests. In addition, there are many specialists who take care of patients with P.A.D., including: vascular medicine specialists, vascular surgeons, cardiologists, podiatrists, and interventional radiologists.

### Medical and Family History

Your health care provider is likely to spend some time reviewing:

- Your medical history, including the presence of diabetes, high blood pressure, high cholesterol, and other important factors;
- Your status as a current or former smoker;



Many of those with P.A.D. experience no symptoms.

- Your personal and family history of cardiovascular disease;
- Any symptoms you may be experiencing in your legs while sitting, standing, walking, climbing, or participating in other physical activities; and
- Your current diet and medications.

### Physical Exam

During the physical exam, your health care provider may check:

- Pulses in your legs and feet to determine if there is enough blood flowing to these areas;

- The color, temperature, and appearance of your legs and feet; and
- For signs of poor wound healing on the legs and feet.

### Diagnostic Tests

When checking you for P.A.D., your health care provider may perform a simple noninvasive test called an ankle-brachial index (ABI). Painless and easy, the ABI compares the blood pressure readings in your ankles with the blood pressure readings in your arms. An ABI can help determine whether you have P.A.D., but it cannot identify which arteries are narrowed or blocked. Your health care provider may decide to do a Doppler ultrasound test to see whether a specific artery is open or blocked. This test uses sound waves to measure the blood flow in the veins and arteries in your arms and legs. Your health care provider may also perform blood tests to see if you have diabetes and check your cholesterol levels. Other tests are also used to help diagnose P.A.D. Talk with your health care provider for more information.

## Questions to Ask Your Health Care Provider

1. Does my medical history raise my risk for P.A.D.?
2. Which screening tests or exams are right for me?
3. If I have P.A.D., what steps should I take to treat it?
4. Will P.A.D. increase my risk for other conditions?
5. What is my blood sugar level? If it's too high or if I have diabetes, what should I do about it?
6. What is my blood pressure? Do I need to do anything about it?
7. What are my cholesterol numbers? (These include total cholesterol, LDL, HDL, and triglycerides—a type of fat found in the blood and food.) Do I need to do anything about them?
8. What can I do to quit smoking?

## How is P.A.D. Treated?

The overall goals for treating P.A.D. are to reduce any symptoms, improve quality of life and mobility, and prevent heart attack, stroke, and amputation. There are three main approaches to treating P.A.D.: making lifestyle changes; taking medication; and in some cases, having a special procedure or surgery. Your health care provider will determine the best treatment options for you, based on your medical history and the severity of your condition.

### Lifestyle Changes

P.A.D. treatment often includes making long-lasting lifestyle changes. If you have P.A.D., or are aiming to prevent it, your health care provider may prescribe one or more of the following:

- **Quit smoking.** Don't smoke, and if you do, quit. Consult with your health care provider to develop an effective cessation plan and stick to it.
- **Lower your numbers.** Work with your health care provider to correct any high blood pressure, cholesterol, and blood glucose levels.

- **Follow a healthy eating plan.**

Choose foods that are low in saturated fat, *trans* fat, and cholesterol. Be sure to include whole grains, vegetables, and fruits.

- **Get moving.** Make a commitment to be more physically active. Aim for 30 minutes of moderate-intensity activity on most, preferably all, days of the week.

- **Aim for a healthy weight.** If you are overweight or obese, work with your health care provider to develop a supervised weight loss plan.

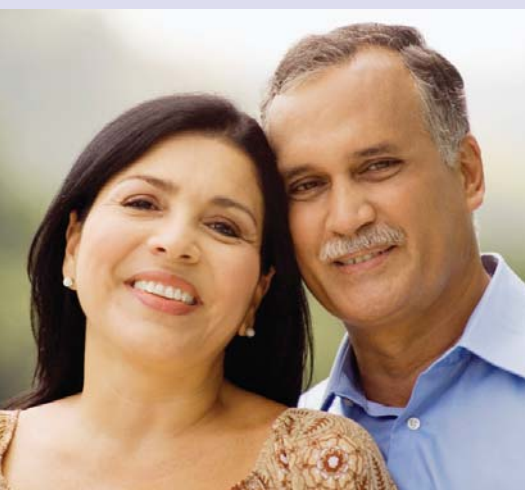
### Medication

In addition to lifestyle changes, your health care provider may prescribe one or more medications. These medications are used to:

- Lower high blood pressure and cholesterol levels and treat diabetes;
- Prevent the formation of blood clots that could cause a heart attack or stroke; and
- Help reduce leg pain while walking or climbing stairs.

### Special Procedures and Surgeries

If the blood flow in one of your limbs is completely or almost completely blocked, you may benefit from having a procedure or surgery in addition to medications and lifestyle changes. Procedures such as angioplasty and bypass graft surgery will not cure P.A.D., but they can improve the blood circulation to your legs and your ability to walk.



**Early treatment of P.A.D. can restore your mobility, decrease your risk for heart attack and stroke, and possibly save your life.**

**Stay in Circulation: Take Steps to Learn About P.A.D.** is a national awareness campaign to increase public and health care provider awareness about peripheral arterial disease (P.A.D.) and its association with other cardiovascular diseases. The campaign is sponsored by the National Heart, Lung, and Blood Institute—part of the National Institutes of Health, U.S. Department of Health and Human Services—in cooperation with the P.A.D. Coalition, an alliance of national organizations and professional societies united to improve the health and health care of people with P.A.D.

## To Learn More

For additional information about P.A.D. and to download free patient education materials, please visit the following Web sites:

**Stay in Circulation: Take Steps to Learn About P.A.D.**  
[www.aboutpad.org](http://www.aboutpad.org)

**NHLBI Diseases and Conditions Index: Peripheral Arterial Disease (P.A.D.)**  
[www.nhlbi.nih.gov/health/dci/Diseases/pad/pad\\_what.html](http://www.nhlbi.nih.gov/health/dci/Diseases/pad/pad_what.html)

**NHLBI Health Information Center**  
Phone: 301-592-8573  
TTY: 240-629-3255  
[www.nhlbi.nih.gov/health/infoctr](http://www.nhlbi.nih.gov/health/infoctr)

**P.A.D. Coalition**  
[www.PADCoalition.org](http://www.PADCoalition.org)

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