

Peripheral Arterial Disease (P.A.D.)

What is P.A.D.?

P.A.D. is short for Peripheral Arterial Disease. People have P.A.D. when the arteries in their legs become narrowed or clogged with fatty deposits, or *plaque* (pronounced "plak"). The buildup of plaque causes the arteries to harden and narrow, which is called atherosclerosis (pronounced "ath-er-o-skler-o'-sis"). When leg arteries are hardened and clogged, blood flow to the legs and feet is reduced. Some people call this *poor circulation*.

P.A.D. occurs most often in the arteries in the legs, but it also can affect other arteries that carry blood **outside** the heart. This includes arteries that go to the aorta, the brain, the arms, the kidneys and the stomach. When arteries that **supply** the heart are hardened or narrowed, it is called *coronary artery disease* or *cardiovascular disease*.

The **good news** is that like other diseases related to the arteries, P.A.D. can be treated by making lifestyle changes, by taking medicines, or by undergoing leg artery angioplasty or vascular surgery, if needed. And you can live well with P.A.D.

Is P.A.D. serious?

P.A.D. is a serious disease commonly affecting Americans over the age of 50. The hardened arteries found in people with P.A.D. are a sign that they are likely to have hardened and narrowed arteries to the heart and the brain. That is why people with P.A.D. have a two- to six-times greater chance of death from a heart attack or a stroke.

When the blood flow to the legs is greatly (or severely) reduced, people with P.A.D. may have pain when walking. P.A.D. may cause other problems that can lead to amputation of a toe, foot or a leg. People with P.A.D. may become disabled and not be able to go to work. As time goes on, they may have a very poor quality of life.

Who is at risk for P.A.D.?

The chance of having P.A.D. increases as you get older. People over age 50 have a higher risk for P.A.D., but the risk is increased if you:

- Smoke, or used to smoke
- Have diabetes
- Have high blood pressure
- Have abnormal blood cholesterol levels
- Are of African American ethnicity
- Have had heart disease, a heart attack or a stroke
- Have a family history of P.A.D., heart attack or stroke.

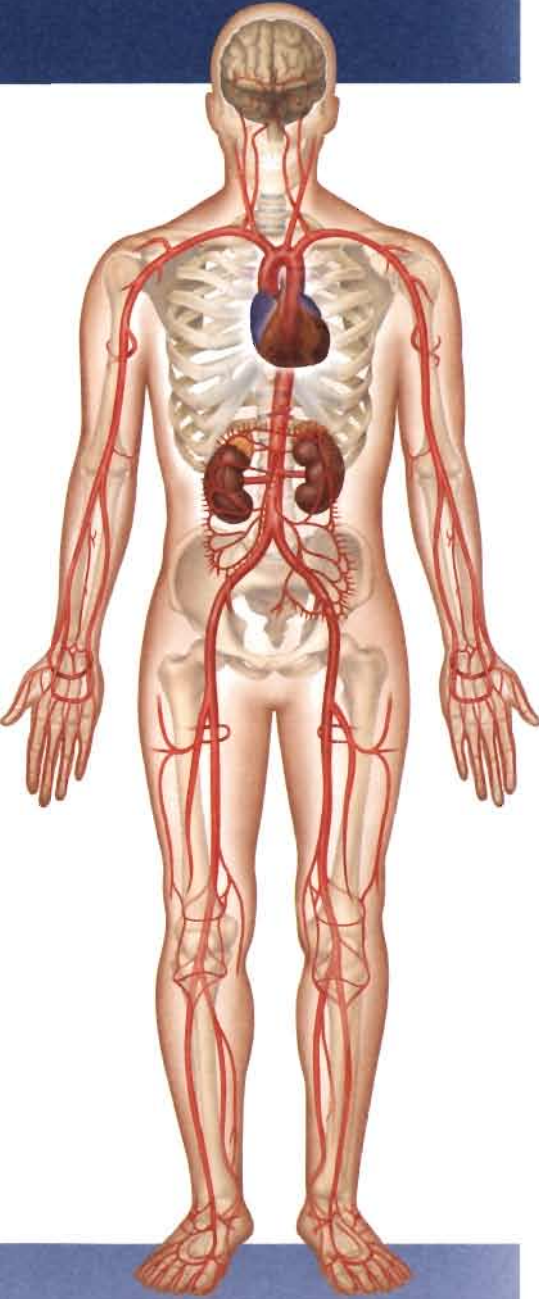
What are the warning signs or symptoms of P.A.D.?

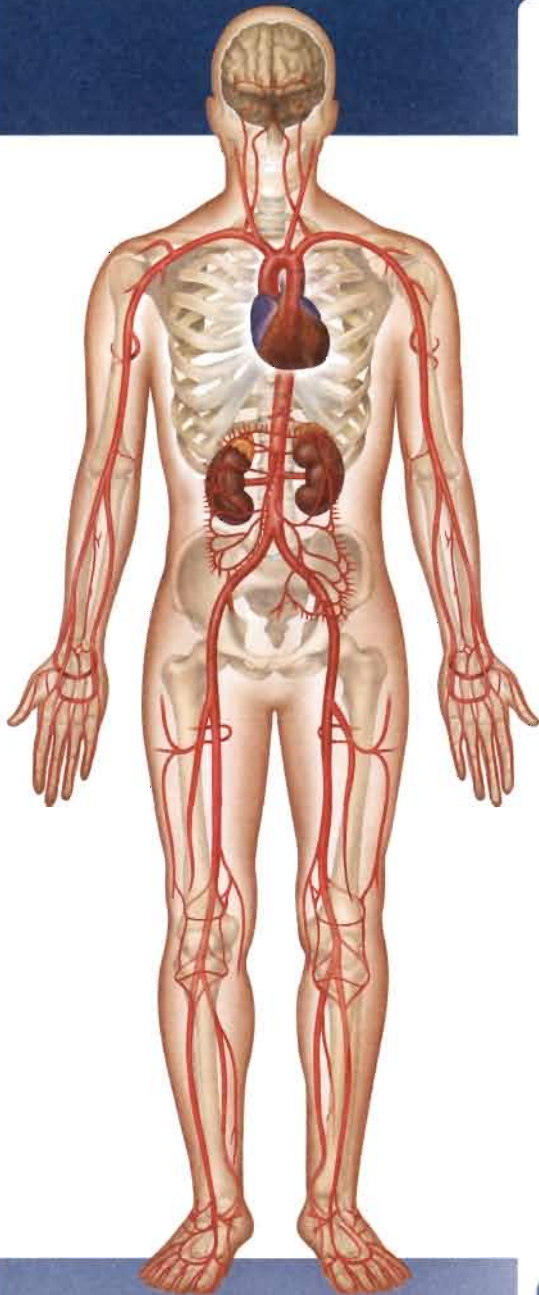
P.A.D. develops slowly over many years. In the early stages, most people with P.A.D. have no symptoms. Only about one out of four people with P.A.D. actually feel typical symptoms of P.A.D. in their leg muscles (known as "claudication", defined below). By that time, their arteries may be so clogged or hardened that they are not getting enough oxygen to supply their leg muscles.

The most common signs of P.A.D. include one or more of these problems:

- Cramps, tiredness or pain in your legs, thighs or buttocks that always happens when you walk but that goes away when you rest. This is called *claudication* (pronounced "claw-di-kay'-shun").
- Foot or toe pain at rest that often disturbs your sleep.
- Skin wounds or ulcers on your feet or toes that are slow to heal, or that do not heal.

Sometimes, people ignore their leg pain and think it is just a sign that they are getting older. As a result, many people with P.A.D. do not know they have it and do not get treatment. It is important to **discuss any leg or thigh pain you may be having with your health care provider** since it may be a warning sign of a serious disease such as P.A.D.





How do I find out if I have P.A.D.?

If you think you have P.A.D., see your health care provider and talk about any symptoms you are having and go over your medical history and your risk factors for P.A.D. Your provider will examine the pulses in your feet and legs. If your provider finds those pulses are weak and thinks you may have P.A.D., your provider may order a test called the ABI, which stands for *ankle-brachial index* (pronounced "an'-kel-bray'-key-el in'-dex").

The ABI is the best test for finding out if you have P.A.D.

It uses sound waves to find out if there is reduced blood flow in the arteries. It also compares the blood pressure in your ankles with the blood pressure in your arms. P.A.D. also can be diagnosed by other tests that measure blood pressures in the leg (segmental pressure), toe pressures (toe-brachial index or TBI) or artery blood flow (with ultrasound).

How is P.A.D. treated?

P.A.D. can be treated with lifestyle changes, medicines and surgery, if needed. Since people with P.A.D. are at high risk for heart attacks and stroke, they must take charge of controlling their risk factors related to cardiovascular disease.

These life-saving steps will help to prevent and control P.A.D.:

- **Get help to quit smoking** and set a quit date now.
- **Lower your blood pressure** to less than 140/90 mmHg or less than 130/80 mmHg if you have diabetes or chronic kidney disease.
- **Lower your LDL (bad) cholesterol** to less than 100 mg/dl or to less than 70 mg/dl if you are at very high risk for a heart attack or stroke (if you smoke, have diabetes or have chronic kidney disease).

- **Manage your blood glucose** to reach an A1C level of less than 7 and practice proper foot care if you have diabetes.
- **Talk to your doctor about taking antiplatelet medicines** such as aspirin or clopidogrel to prevent clotting.
- **Follow a healthy eating plan** to control your blood pressure, cholesterol and blood glucose (for diabetes).
- **Get regular exercise** such as walking for 30 minutes at least 3 or 4 times per week.

If you have pain or cramps in your legs, ask your health care provider about an exercise program that will help improve your symptoms. If possible, get a referral to a special P.A.D. exercise program.

For most people with P.A.D., these life-saving steps may be enough to slow down the disease and even improve any symptoms. If needed, your health care provider can refer you to a specialist for procedures or surgery to treat arteries that are severely blocked. These procedures often help people with P.A.D. to improve symptoms and to avoid losing a foot or leg.

Remember: Finding and treating P.A.D. early can help keep your legs healthy, lower your risk for heart attack or stroke, and save your life and limbs.

The P.A.D. Coalition has united over 50 medical and vascular organizations to work together to improve the health and health care of people with P.A.D.

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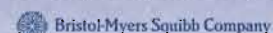
Reference

Hirsch AT, Haskal ZJ, Hertzler NR. ACC/AHA 2005 Guidelines for the Management of Patients With Peripheral Arterial Disease (Lower Extremity, Renal, Mesenteric, and Abdominal Aortic): A Collaborative Report from the American Association for Vascular Surgery/Society for Vascular Surgery, Society for Cardiovascular Angiography and Interventions, Society for Vascular Medicine and Biology, Society of Interventional Radiology, and the ACC/AHA Task Force on Practice Guidelines (Writing Committee to Develop Guidelines for the Management of Patients With Peripheral Arterial Disease). Available at: <http://www.acc.org/qualityandscience/clinical/guidelines/PAD/index.pdf>

To learn more, visit: www.PADcoalition.org

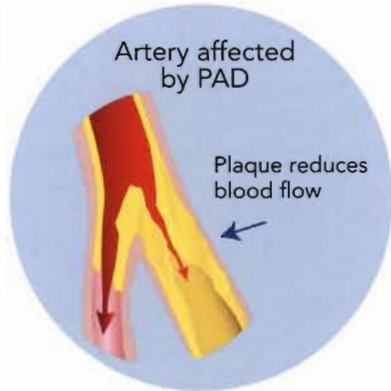


Supported by an educational grant from Bristol-Myers Squibb and Sanofi Pharmaceuticals Partnership. Bristol-Myers Squibb and Sanofi Pharmaceuticals Partnership were not involved in the development of this tear pad and in no way influenced its contents.



What is PAD?

Peripheral Artery Disease (PAD) occurs when there is a buildup of cholesterol and plaque in the arteries of the lower extremities, causing decreased blood flow to the legs and feet.



About arterial testing

Arterial testing with the non-invasive BioMedix® system can provide early detection of PAD when treatment options are broadest (including lifestyle changes as well as non-invasive and invasive therapeutic options). The system detects blockages in arteries and the quality of blood flow using Pulse Volume Recordings and segmental blood pressure measurements.

Blood pressures are recorded at the arms and ankles. The Ankle-Brachial Index (ABI) is determined by the ratio between these pressures. An ankle pressure that is 99% or lower than the arm pressure may be indicative of PAD. With severe narrowing, the ABI may be less than 50%.

Before your test

For this test, you will be asked to remove clothing that covers your arms and legs, keeping your undergarments on. You may be asked to remove your shoes and socks as well. A gown may be provided, or you may bring shorts and a short-sleeved shirt to wear. This test usually takes 15 to 20 minutes. Be sure to allow extra time to check in.

- Do not smoke or use tobacco 30 minutes prior to your PAD exam. Smoking constricts the peripheral arteries and can interfere with the exam.
- If you think you may not be able to tolerate lying flat on the exam table for the test, please share this with your care provider.

During your test

You will lie down on the exam table. Pressure cuffs will be wrapped snugly around your arms, above knees, calves and ankles. The technician will inflate the cuffs, and sensors in the machine will record the pulse volume waveforms that correspond to each beat of your heart.

You may be asked to exercise until symptoms are induced. After exercise, you will lie down on the exam table for additional arm and ankle tests.



After your test

You may return to your normal routine right after the test. Your care provider will let you know when the results are ready.

If your results appear to be abnormal, your care provider may recommend additional diagnostic tests.



Are you at risk?

Groups at risk for PAD

- Men and women ages 65 years or older¹
- Patients 50 years or older with a history of diabetes, high blood pressure, high cholesterol or smoking

Signs and symptoms

- Pain in the legs brought on by walking and relieved with rest
- Pain in the legs at rest due to poor circulation
- A poorly healing wound on lower extremity
- Injury to lower limb or foot involving blood vessels
- Discoloration of toes and feet

Source: Vascular Disease Foundation. (2012). Peripheral artery disease. Retrieved from: <http://vascular-disease.org/peripheral-artery-disease/>

1. Society for Cardiovascular Angiography and Interventions, et al. (2011). 2011 ACCF/AHA focused update of the guideline for the management of patients with peripheral artery disease (updating the 2005 guideline)... *J Am Coll Cardiol* 58(19), 5-6. doi:10.1016/j.jacc.2011.08.023.

My Appointment:

Date: _____

Time: _____

Place: _____

Phone: _____

Notes:

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ML-025 Rev D Jan 2013

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PAD Exam

A study of
your arteries



Do I Need a Test for PAD?

Peripheral Arterial Disease (PAD) is a serious circulatory problem in which the blood vessels that carry blood to your arms, legs, brain, or kidneys, become narrowed or clogged. It affects over 8 million Americans, most over the age of 50. It may result in leg discomfort with walking, poor healing of leg sores/ulcers, difficult to control blood pressure, or symptoms of stroke. People with PAD are at significantly increased risk for stroke and heart attack. Answers to these questions will determine if you are at risk for PAD and if a vascular exam will help us better assess your vascular health status.

Name: _____

Date: _____

Circle "Yes" or "No":

- | | | | Test for PAD |
|----|---|-----|-----------------------------|
| 1. | Do you have foot, calf, buttock, hip or thigh discomfort (aching, fatigue, tingling, cramping or pain) when you walk which is relieved by rest? | Yes | No <input type="checkbox"/> |
| 2. | Do you experience any pain at rest in your lower leg(s) or feet? | Yes | No <input type="checkbox"/> |
| 3. | Do you experience foot or toe pain that often disturbs your sleep? | Yes | No <input type="checkbox"/> |
| 4. | Are your toes or feet pale, discolored, or bluish? | Yes | No <input type="checkbox"/> |
| 5. | Do you have skin wounds or ulcers on your feet or toes that are slow to heal (8-12 weeks)? | Yes | No <input type="checkbox"/> |
| 6. | Has your doctor ever told you that you have diminished or absent pedal (foot) pulses? | Yes | No <input type="checkbox"/> |
| 7. | Have you suffered a severe injury to the leg(s) or feet? | Yes | No <input type="checkbox"/> |
| 8. | Do you have an infection of the leg(s) or feet that may be gangrenous (black skin tissue)? | Yes | No <input type="checkbox"/> |

Patient Signature: _____

Physician Signature: _____

Date: _____