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Peripheral Arterial Disease

Also called: PAD

Peripheral arterial disease (PAD) happens when there is a narrowing of the blood vessels outside of your heart. The cause of PAD is **atherosclerosis** [<https://medlineplus.gov/atherosclerosis.html>] . This happens when plaque builds up on the walls of the arteries that supply blood to the arms and legs. Plaque is a substance made up of fat and cholesterol. It causes the arteries to narrow or become blocked. This can reduce or stop blood flow, usually to the legs. If severe enough, blocked blood flow can cause tissue death and can sometimes lead to amputation of the foot or leg.

The main risk factor for PAD is smoking. Other risk factors include older age and diseases like diabetes, high blood cholesterol, high blood pressure, heart disease, and stroke.

Many people who have PAD don't have any symptoms. If you have symptoms, they may include:


- Pain, numbness, achiness, or heaviness in the leg muscles. This happens when walking or climbing stairs.
- Weak or absent pulses in the legs or feet
- Sores or wounds on the toes, feet, or legs that heal slowly, poorly, or not at all
- A pale or bluish color to the skin
- A lower temperature in one leg than the other leg
- Poor nail growth on the toes and decreased hair growth on the legs
- Erectile dysfunction, especially among men who have diabetes

PAD can increase your risk of heart attack [<https://medlineplus.gov/heartattack.html>] , stroke [<https://medlineplus.gov/stroke.html>] , and transient ischemic attack [<https://medlineplus.gov/transientischemicattack.html>] .

Doctors diagnose PAD with a physical exam and heart and imaging tests. Treatments include lifestyle changes, medicines, and sometimes surgery. Lifestyle changes include dietary changes, exercise, and efforts to lower high cholesterol [<https://medlineplus.gov/cholesterol.html>] levels and high blood pressure [<https://medlineplus.gov/highbloodpressure.html>] .

NIH: National Heart, Lung, and Blood Institute

Start Here

- About Peripheral Artery Disease (PAD) [<https://www.heart.org/en/health-topics/peripheral-artery-disease/about-peripheral-artery-disease-pad>] (American Heart Association)
- Peripheral Artery Disease (PAD) [<https://www.radiologyinfo.org/en/info/pad>] (American College of Radiology; Radiological Society of North America)
Also in Spanish [<https://www.radiologyinfo.org/es/info/pad>]
- What Is Peripheral Artery Disease? [<https://www.nhlbi.nih.gov/health/peripheral-artery-disease>]  (National Heart, Lung, and Blood Institute)
Also in Spanish [<https://www.nhlbi.nih.gov/es/salud/arteriopatia-periferica>]



Diagnosis and Tests

- Ankle-Brachial Index [<https://www.mayoclinic.org/tests-procedures/ankle-brachial-index/about/pac-20392934?p=1>] (Mayo Foundation for Medical Education and Research)
Also in Spanish [<https://www.mayoclinic.org/es/tests-procedures/ankle-brachial-index/about/pac-20392934?p=1>]
- CT Angiography (CTA) [<https://www.radiologyinfo.org/en/info/angiact>]  (American College of Radiology; Radiological Society of North America)
Also in Spanish [<https://www.radiologyinfo.org/es/info/angiact>]
- Doppler Ultrasound [<https://medlineplus.gov/lab-tests/doppler-ultrasound/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/ecografia-doppler/>]
- MR Angiography (MRA) [<https://www.radiologyinfo.org/en/info/angiomr>]  (American College of Radiology; Radiological Society of North America)
Also in Spanish [<https://www.radiologyinfo.org/es/info/angiomr>]
- Peripheral Angiography [<https://www.heart.org/en/health-topics/peripheral-artery-disease/diagnosing-pad/peripheral-angiogram>] (American Heart Association)
- Screening for Peripheral Artery Disease [<https://www.ahajournals.org/doi/10.1161/CIRCULATIONAHA.111.069211>] (American Heart Association)
- Ultrasound -- Vascular [<https://www.radiologyinfo.org/en/info/vascularus>] (American College of Radiology; Radiological Society of North America)
Also in Spanish [<https://www.radiologyinfo.org/es/info/vascularus>]

Prevention and Risk Factors

- Understand Your Risk for PAD [<https://www.heart.org/en/health-topics/peripheral-artery-disease/understand-your-risk-for-pad>] (American Heart Association)

Treatments and Therapies

- Angioplasty and Vascular Stenting [<https://www.radiologyinfo.org/en/info/angioplasty>]  (American College of Radiology; Radiological Society of North America)
Also in Spanish [<https://www.radiologyinfo.org/es/info/angioplasty>]
- Angioplasty: MedlinePlus Health Topic [<https://medlineplus.gov/angioplasty.html>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/angioplasty.html>]

Related Issues

- Buerger's Disease [<https://www.hopkinsvasculitis.org/types-vasculitis/buergers-disease/>] (Johns Hopkins Vasculitis Center)
- Claudication [<https://www.mayoclinic.org/diseases-conditions/ Claudication/symptoms-causes/syc-20370952?p=1>] (Mayo Foundation for Medical Education and Research)
Also in Spanish [<https://www.mayoclinic.org/es/diseases-conditions/ Claudication/symptoms-causes/syc-20370952?p=1>]
- Peripheral Arterial Disease and Claudication [<https://familydoctor.org/condition/peripheral-arterial-disease-and-claudication/?adfree=true>] (American Academy of Family Physicians)
Also in Spanish [<https://es.familydoctor.org/condicion/enfermedad-arterial-periferica-y-claudicacion-es/?adfree=true>]
- Peripheral Artery Disease and Diabetes [<https://www.heart.org/en/health-topics/diabetes/diabetes-complications-and-risks/peripheral-artery-disease--diabetes>] (American Heart Association)

Specifics

- Occlusive Peripheral Arterial Disease [<https://www.merckmanuals.com/home/heart-and-blood-vessel-disorders/peripheral-arterial-disease/occlusive-peripheral-arterial-disease>] (Merck & Co., Inc.)
Also in Spanish [<https://www.merckmanuals.com/es-us/hogar/trastornos-del-coraz%C3%B3n-y-los-vasos-sangu%C3%ADneos/arteriopat%C3%ADa-perif%C3%A9rica/arteriopat%C3%ADa-perif%C3%A9rica-oclusiva>]

Overview of Functional Peripheral Arterial Disease [<https://www.merckmanuals.com/home/heart-and-blood-vessel-disorders/peripheral-arterial-disease/overview-of-functional-peripheral-arterial-disease>] (Merck & Co., Inc.)
Also in Spanish [<https://www.merckmanuals.com/es-us/hogar/trastornos-del-coraz%C3%B3n-y-los-vasos-sangu%C3%ADneos/arteriopat%C3%ADa-perif%C3%A9rica/introducci%C3%B3n-a-la-arteriopat%C3%ADa-perif%C3%A9rica-funcional>]

Images

- Arterial bypass leg - series -- Normal anatomy [https://medlineplus.gov/ency/presentations/100155_1.htm]
(Medical Encyclopedia)
Also in Spanish [https://medlineplus.gov/spanish/ency/esp_presentations/100155_1.htm]

Clinical Trials

- ClinicalTrials.gov: Intermittent Claudication [<https://clinicaltrials.gov/search?cond=%22Intermittent+Claudication%22&aggFilters=status:not%20rec>]  (National Institutes of Health)
- ClinicalTrials.gov: Peripheral Arterial Disease [<https://clinicaltrials.gov/search?cond=%22Peripheral+Arterial+Disease%22&aggFilters=status:not%20rec>]  (National Institutes of Health)
- ClinicalTrials.gov: Peripheral Vascular Diseases [<https://clinicaltrials.gov/search?cond=%22Peripheral+Vascular+Diseases%22&aggFilters=status:not%20rec>]  (National Institutes of Health)

Journal Articles


References and abstracts from MEDLINE/PubMed (National Library of Medicine)

- Article: Pain management and patient education interventions to increase physical activity in... [<https://www.ncbi.nlm.nih.gov/pubmed/40701603>]
- Article: A vein bypass first versus a best endovascular treatment first revascularization... [<https://www.ncbi.nlm.nih.gov/pubmed/40580059>]
- Article: Application and significance of precise computed tomography angiography (CTA) scanning technology... [<https://www.ncbi.nlm.nih.gov/pubmed/40403343>]
- Peripheral Arterial Disease -- see more articles [<https://pubmed.ncbi.nlm.nih.gov/?term=%22Peripheral+Arterial+Disease%22%5Bmajr%3Anoexp%5D+AND+humans%5Bmh%5D+AND+english%5Bla%5D+AND+%22last+1+Year%22+%5Bedat%5D+AND+%28patient+education+handout%5Bpt%5D+OR+guideline%5Bpt%5D+OR+clinical+trial%5Bpt%5D%29++NOT+%28letter%5Bpt%5D+OR+case+reports%5Bpt%5D+OR+editorial%5Bpt%5D+OR+comment%5Bpt%5D%29+AND+free+full+text%5Bsb%5D+>]

Reference Desk

- Glossary (Vascular Diseases) [<https://www.vascularcures.org/patients/glossary/>] (Vascular Cures)

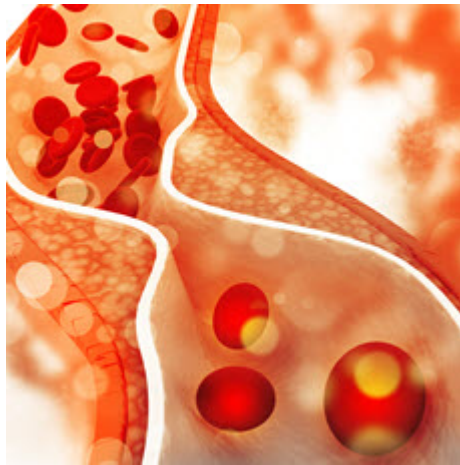
Find an Expert

- American Heart Association [<https://www.heart.org/en/>]
- National Heart, Lung, and Blood Institute [<https://www.nhlbi.nih.gov/>] 

Patient Handouts

- Angioplasty and stent placement - peripheral arteries [<https://medlineplus.gov/ency/article/007393.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/007393.htm>]
- Angioplasty and stent placement - peripheral arteries - discharge [<https://medlineplus.gov/ency/patientinstructions/000234.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000234.htm>]
- Doppler ultrasound exam of an arm or leg [<https://medlineplus.gov/ency/article/003775.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003775.htm>]
- Extremity angiography [<https://medlineplus.gov/ency/article/003772.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/003772.htm>]

- Ischemic ulcers - self-care [<https://medlineplus.gov/ency/patientinstructions/000742.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000742.htm>]
- Peripheral artery bypass - leg [<https://medlineplus.gov/ency/article/007394.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/007394.htm>]
- Peripheral artery disease - legs [<https://medlineplus.gov/ency/article/000170.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000170.htm>]
- Peripheral artery disease of the legs - self-care [<https://medlineplus.gov/ency/patientinstructions/000577.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000577.htm>]



MEDICAL ENCYCLOPEDIA

Angioplasty and stent placement - peripheral arteries [<https://medlineplus.gov/ency/article/007393.htm>]

Angioplasty and stent placement - peripheral arteries - discharge
[<https://medlineplus.gov/ency/patientinstructions/000234.htm>]

Arterial bypass leg - series -- Normal anatomy [https://medlineplus.gov/ency/presentations/100155_1.htm]

Arteriogram [<https://medlineplus.gov/ency/article/003327.htm>]

Atheroembolic renal disease [<https://medlineplus.gov/ency/article/000480.htm>]

Doppler ultrasound exam of an arm or leg [<https://medlineplus.gov/ency/article/003775.htm>]

Duplex ultrasound [<https://medlineplus.gov/ency/article/003433.htm>]

Extremity angiography [<https://medlineplus.gov/ency/article/003772.htm>]

Ischemic ulcers - self-care [<https://medlineplus.gov/ency/patientinstructions/000742.htm>]

Limb plethysmography [<https://medlineplus.gov/ency/article/007288.htm>]

Magnetic resonance angiography [<https://medlineplus.gov/ency/article/007269.htm>]

Peripheral artery bypass - leg [<https://medlineplus.gov/ency/article/007394.htm>]

Peripheral artery bypass - leg - discharge [<https://medlineplus.gov/ency/patientinstructions/000239.htm>]

Peripheral artery disease - legs [<https://medlineplus.gov/ency/article/000170.htm>]

Peripheral artery disease of the legs - self-care [<https://medlineplus.gov/ency/patientinstructions/000577.htm>]

Renovascular hypertension [<https://medlineplus.gov/ency/article/000204.htm>]

Thromboangiitis obliterans [<https://medlineplus.gov/ency/article/000172.htm>]

Related Health Topics

- Atherosclerosis [<https://medlineplus.gov/atherosclerosis.html>]
- Gangrene [<https://medlineplus.gov/gangrene.html>]
- Vascular Diseases [<https://medlineplus.gov/vascular diseases.html>]

National Institutes of Health

The primary NIH organization for research on *Peripheral Arterial Disease* is the National Heart, Lung, and Blood Institute [<http://www.nhlbi.nih.gov/>]

Other Languages

Find health information in languages other than English [<https://medlineplus.gov/languages/peripheralarterialdisease.html>] on *Peripheral Arterial Disease*

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