An official website of the United States government Here's how you know

National Institutes of Health / National Library of Medicine

MedlinePlus Trusted Health Information for You 25 YEARS of health information

Extremity angiography

Extremity angiography is a test used to see the arteries in the hands, arms, feet, or legs. It is also called peripheral angiography.

Angiography uses x-rays and a special dye to see the insides of the arteries. Arteries are blood vessels that carry blood away from the heart.

How the Test is Performed

This test is done in a hospital or specialized procedure unit. You will lie on an x-ray table. You may ask for some medicine to make you sleep and relax (sedative).

- During the test, your blood pressure, heart rate, and breathing will be checked.
- The health care provider will shave and clean an area, most often in the groin.
- A numbing medicine (anesthetic) is injected into the skin over an artery.
- A needle is placed into that artery.
- A thin plastic tube called a catheter is passed through the needle into the artery. The doctor (usually a radiologist with special training in this technique) moves it into the area of the body being studied. The doctor can see live images of the area on a TV-like monitor, and uses them as a guide.
- Dye flows through the catheter and into the arteries.
- X-ray images of the arteries are taken.

Certain treatments can be done during this procedure. These treatments include:

- Dissolving a blood clot with medicine
- Opening a partially blocked artery with a balloon
- Placing a small tube called a stent into an artery to help hold it open

After the x-rays or treatments are finished, the catheter is removed. Pressure is applied to the puncture site for 20 to 45 minutes to stop the bleeding. After that time, the area is checked and a tight bandage is applied. The arm or leg where the needle was placed is most often kept straight for another 6 hours after the procedure. You should avoid strenuous activity, such as heavy lifting, for 24 to 48 hours.

How to Prepare for the Test

You should not eat or drink anything for 6 to 8 hours before the test.

You may be told to stop taking certain medicines, such as aspirin or other blood thinners for a short while before the test. Never stop taking any medicines unless told to do so by your provider.

Make sure your provider knows about all the medicines you take, including those you bought without a prescription. This includes herbs and supplements.

Tell your provider if you:

- Are pregnant
- Are allergic to any medicines
- Have ever had an allergic reaction to x-ray contrast material, shellfish, or iodine substances
- Have ever had any bleeding problems

How the Test will Feel

The x-ray table is hard and cold. You may want to ask for a blanket or pillow. You may feel some stinging when the numbing medicine is injected. You may also feel some pressure as the catheter is moved.

The dye can cause a feeling of warmth and flushing. This is normal and most often goes away in a few seconds.

You may have tenderness and bruising at the site of the catheter insertion after the test. Seek immediate medical help if you have:

- Swelling
- Bleeding that doesn't go away
- Severe pain in an arm or leg

Why the Test is Performed

You may need this test if you have symptoms of a narrowed or blocked blood vessel in the arms, hands, legs, or feet.

The test may also be done to diagnose:

- Internal bleeding
- Swelling or inflammation of the blood vessels (vasculitis)

Normal Results

The x-ray shows normal structures for your age.

What Abnormal Results Mean

An abnormal result is commonly due to narrowing and hardening of the arteries in the arms or legs from plaque buildup (hardening of the arteries) in the artery walls.

The x-ray may show a blockage in the vessels caused by:

- Aneurysms (abnormal widening or ballooning of part of an artery)
- Blood clots
- Other diseases of the arteries

Abnormal results may also be due to:

- Inflammation of the blood vessels
- Injury to the blood vessels
- Thromboangiitis obliterans (Buerger disease)
- Takayasu disease

Risks

Complications may include:

- Allergic reaction to the contrast dye
- Damage to the blood vessel as the needle and catheter are inserted
- Excessive bleeding or a blood clot where the catheter is inserted, which can reduce blood flow to the leg
- Heart attack or stroke
- Hematoma, a collection of blood at the site of the needle puncture
- Injury to the nerves at the needle puncture site
- Kidney damage from the dye
- Injury to the blood vessels being tested
- Limb loss from problems with the procedure

There is low-level radiation exposure. However, most experts feel that the risk for most x-rays is low compared with benefits. Pregnant women and children are more sensitive to the risks for the x-ray.

Alternative Names

Angiography of the extremity; Peripheral angiography; Lower extremity angiogram; Peripheral angiogram; Arteriography of the extremity; PAD - angiography; Peripheral artery disease - angiography

References

American Heart Association website. Peripheral angiography. www.heart.org/en/health-topics/peripheral-artery-disease/diagnosing-pad/peripheral-angiogram [https://www.heart.org/en/health-topics/peripheral-artery-disease/diagnosing-pad/peripheral-angiogram] . Updated October 15, 2024. Accessed November 5, 2024.

Harisinghani MG, Chen JW, Weissleder R. Vascular imaging. In: Harisinghani MG, Chen JW, Weissleder R, eds. *Primer of Diagnostic Imaging.* 6th ed. Philadelphia, PA: Elsevier; 2019:chap 8.

Mcquinn CW, Orion KC. Endovascular diagnostic technique. In: Sidawy AN, Perler BA, eds. *Rutherford's Vascular Surgery and Endovascular Therapy.* 10th ed. Philadelphia, PA: Elsevier; 2023:chap 62.

Reekers JA. Angiography: principles, techniques and complications. In: Adam A, Dixon AK, Gillard JH, Schaefer-Prokop CM, eds. *Grainger & Allison's Diagnostic Radiology.* 7th ed. Philadelphia, PA: Elsevier Limited; 2021:chap 78.

Review Date 10/23/2024

Updated by: Deepak Sudheendra, MD, MHCI, RPVI, FSIR, Founder and CEO, 360 Vascular Institute, with an expertise in Vascular Interventional Radiology & Surgical Critical Care, Columbus, OH. Review provided by VeriMed Healthcare Network. Also reviewed by David C. Dugdale, MD, Medical Director, Brenda Conaway, Editorial Director, and the A.D.A.M. Editorial team.

Learn how to cite this page

CERTIFIED
Health Content Provider
06/01/2028

A.D.A.M., Inc. is accredited by URAC, for Health Content Provider (www.urac.org). URAC's accreditation program is an independent audit to verify that A.D.A.M. follows rigorous standards of quality and accountability. A.D.A.M. is among the first to achieve this important distinction for online health information and services. Learn more about A.D.A.M.'s editorial policy, editorial process, and privacy policy.

The information provided herein should not be used during any medical emergency or for the diagnosis or treatment of any medical condition. A licensed medical professional should be consulted for diagnosis and treatment of any and all medical conditions. Links to other sites are provided for information only – they do not constitute endorsements of those other sites. No warranty of any kind, either expressed or implied, is made as to the accuracy, reliability, timeliness, or correctness of any translations made by a third-party service of the information provided herein into any other language. © 1997-2025 A.D.A.M., a business unit of Ebix, Inc. Any duplication or distribution of the information contained herein is strictly prohibited.

ADAM

National Library of Medicine 8600 Rockville Pike, Bethesda, MD 20894 U.S. Department of Health and Human Services
National Institutes of Health