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CT angiography - arms and legs

CT angiography combines a CT scan with the injection of dye. This technique is able to create pictures of the blood vessels in the arms or legs. CT stands for computed tomography.

How the Test is Performed

You will lie on a narrow table that slides into the center of the CT scanner.

When you are inside the scanner, the machine's x-ray beam rotates around you. Modern "spiral" scanners can perform the exam without stopping.

A computer makes multiple images of the body area, called slices. These images can be stored, viewed on a monitor, or printed on film. Models of the body area in three-dimension can be created by adding the slices together.

You must stay still during the exam, because movement blurs the pictures. You may have to hold your breath for short periods of time.

The scan should take only about 5 minutes.

How to Prepare for the Test

Some exams require a special dye, called contrast, to be injected into your body before the test. Contrast helps certain areas show up better on the x-rays.

- Contrast can be given through a vein (IV) in your hand or forearm. If contrast is used, you also may be asked not to eat or drink anything for 4 to 6 hours before the test.
- Let your health care provider know if you have ever had a reaction to contrast. You may need to take medicines before the test to avoid this problem.
- Before receiving the contrast, tell your provider if you take the diabetes medicine metformin (Glucophage). You may need to take extra steps if you are taking this medicine.

The contrast can worsen kidney function problems in people with poorly functioning kidneys. Talk to your provider if you have a history of kidney problems.

Too much weight can cause damage to the scanner's working parts. If you weigh more than 300 pounds (135 kilograms), talk to your provider about the weight limit before the test.

You will need to remove jewelry and wear a hospital gown during the CT exam.

How the Test will Feel

Some people may be uncomfortable lying on the hard table.

Contrast given through an IV may cause a:

- Slight burning feeling
- Metallic taste in your mouth
- Warm flushing of your body

These feelings are normal and usually go away within a few seconds.

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:

- Abnormal widening or ballooning of part of an artery (aneurysm)
- Bleeding
- Swelling or inflammation of the blood vessels (vasculitis)
- Leg pain during walking or exercise (claudication)

Normal Results

Results are considered normal if no problems are seen.

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 in the artery walls.

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

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

Abnormal results may also be due to:

- Inflammation of the blood vessels
- Injury to the blood vessels
- Buerger disease (thromboangiitis obliterans), a rare disease in which blood vessels of the hands and feet become blocked

Risks

Risks of CT scans include:

- Exposure to radiation
- Allergy to contrast dye
- Damage to the kidneys from the contrast dye

CT scans give off more radiation than regular x-rays. Having many x-rays or CT scans over time may increase your risk for cancer. However, the risk from any one scan is small. You and your provider should discuss this risk compared with the value of an accurate diagnosis for the problem. Most modern scanners use techniques to use less radiation.

Let your provider know if you have ever had an allergic reaction to injected contrast dye.

- The most common type of contrast contains iodine. If you have an iodine allergy, you may have nausea or vomiting, sneezing, itching, or hives if you get this type of contrast.
- If you need to have this kind of contrast, your provider may give you antihistamines (such as Benadryl) or steroids before the test.
- The kidneys help remove iodine out of the body. You may need extra fluids after the test to help rid your body of the iodine if you have kidney disease or diabetes.

Rarely, the dye may cause a serious allergic response called anaphylaxis. This can be life-threatening. Notify the scanner operator right away if you have any trouble breathing during the test. Scanners have an intercom and speakers so the operator can hear you at all times.

Alternative Names

Computed tomography angiography - peripheral; CTA - peripheral; CTA - Runoff; PAD - CT angiography; Peripheral artery disease - CT angiography; PVD - CT angiography

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