TEST

Arteriogram

An arteriogram uses contrast and X-rays to show blood flow inside arteries.

WHAT IT MEASURES
Blood flow and narrowing inside arteries using contrast X-rays

SAMPLE
None; X-ray imaging

FASTING NEEDED?
Sometimes, especially when sedation is planned

HOW LONG IT TAKES
Usually 1-3 hours, plus recovery

RESULTS IN
Often same day; final timing varies by laboratory

USED FOR
Diagnosis, treatment planning, and sometimes treatment

MAIN LIMITATION
Shows artery shape, not always how narrowing affects blood flow

Overview

An arteriogram is an imaging test that shows the inside of your arteries. Arteries carry oxygen-rich blood from your heart to the rest of your body.

During the test, a clinician places a thin, flexible tube called a catheter into an artery, usually through the wrist or groin. Contrast material is injected through the catheter. This makes the arteries visible on moving X-ray images called fluoroscopy.

An arteriogram can examine arteries in different areas, including the heart, brain, kidneys, abdomen, arms, or legs. The exact procedure and recovery time depend on which arteries are being studied.

In some cases, treatment can happen during the same procedure. For example, a narrowed artery may be widened with a balloon or supported with a small mesh tube called a stent. Your care team should explain beforehand whether treatment is a possibility.

Why the test is ordered

An arteriogram provides detailed pictures of the channel through which blood flows. It may be ordered to look for:

It may also be used to plan surgery or another procedure. In an emergency, it can help locate internal bleeding or a blocked artery so treatment can begin through the catheter.

Less invasive tests, such as ultrasound, CT angiography, or MR angiography, are often used first. A catheter arteriogram may be chosen when those tests do not answer the clinical question, when especially detailed images are needed, or when treatment may be performed immediately.

- Narrowing or blockage caused by plaque or a blood clot
- An aneurysm, which is a weakened, widened area of an artery
- Abnormal connections between arteries and veins
- Bleeding from a damaged blood vessel
- Artery damage after an injury
- The blood supply to a tumour or organ

Who should have the test

An arteriogram may be appropriate when your symptoms, examination, or earlier imaging suggest a significant artery problem and the result could change your care.

It is not generally used as a routine screening test for people without a specific reason. Because it involves entering an artery, radiation, and contrast material, its possible benefits are weighed against its risks.

Tell the team before the procedure if you are or may be pregnant. Also tell them if you have kidney disease, a bleeding disorder, a previous reaction to contrast, or a planned operation. These factors do not always prevent the test, but they may change how it is performed.

How to prepare

Follow the instructions from the facility performing your test. Preparation differs according to the artery being examined, the planned sedation, and whether treatment might be needed.

You may be asked not to eat for several hours. Rules about water and other clear drinks differ, so do not assume they are allowed unless your instructions say so.

Give the team an up-to-date list of medicines, supplements, and allergies. In particular,

mention:

Do not stop a prescribed medicine on your own. The team will tell you if any medicine needs to be paused or adjusted.

You may need blood tests beforehand to check kidney function and how well your blood clots. If sedation is planned, arrange transportation home and follow the facility's instructions about having someone stay with you.

- Blood thinners and medicines that affect platelets
- Diabetes medicines
- Previous reactions to iodinated contrast
- Kidney problems or recent kidney test results
- Pregnancy or the possibility of pregnancy

What happens during the test

You will change into a gown and lie on an X-ray table. Monitoring equipment may be attached to check your heart rate, blood pressure, and oxygen level. An intravenous line may be placed for fluids or sedation.

The skin over the access site, commonly the wrist or groin, is cleaned and numbed with local anaesthetic. You may feel a brief sting. A clinician then enters the artery with a needle and guides a catheter through the blood vessels using live X-ray images.

You should not usually feel the catheter moving inside your arteries. When contrast is injected, you may briefly feel warmth, flushing, or an urge to urinate. These feelings normally pass quickly.

You may be asked to keep still or hold your breath for a few seconds while images are taken. If treatment is needed and was agreed beforehand, it may be performed through the same catheter.

Afterward, the catheter is removed. Pressure or a closure device is used to seal the artery. You will be monitored for bleeding and other problems. If the groin was used, you may need to lie flat for a period. Some people go home the same day, while others need a longer stay.

Understanding your results

The report describes where blood flows normally and where an artery appears narrowed,

blocked, widened, leaking, or unusually connected to another vessel.

Narrowing may be described as a percentage, but there is no single percentage that has the same meaning in every artery or every person. Interpretation depends on the artery involved, your symptoms, blood flow, previous treatment, and the reason for testing.

An apparently severe narrowing may not always reduce blood flow enough to explain symptoms. A more modest narrowing can sometimes matter if it affects an important location. Additional pressure measurements, ultrasound from inside the artery, or other imaging may be needed.

Results and interpretation vary by laboratory, age, sex, pregnancy status, medicines, and clinical context. Your report should be considered alongside your symptoms and other test findings rather than in isolation.

What affects the results

An arteriogram produces images rather than a blood-test number, but several factors can make an artery look different from its usual state.

The catheter can occasionally trigger temporary tightening of an artery, called spasm. This may resemble a fixed narrowing. Medicines that widen arteries can help clinicians determine whether the change is temporary.

Movement, breathing, overlapping vessels, and an image taken from an unhelpful angle can hide or exaggerate a narrowing. Slow blood flow or poor timing of the contrast injection may prevent small branches from filling clearly.

A previous stent, bypass graft, surgery, or heavy calcium build-up can make images harder to interpret. Very small vessels may also be difficult to assess.

Kidney function does not usually change the artery itself, but it may limit how much iodinated contrast can safely be used. That can affect the number or quality of images obtained. Pregnancy mainly affects the decision to use radiation and contrast rather than making the images inaccurate.

Accuracy and limitations

Catheter arteriography gives highly detailed images and is often used when precise information about an artery's inner channel is needed. However, it is not correct in every case.

It can miss an eccentric narrowing that affects one side of the artery if too few viewing angles

are used. Small branches, slow-flow areas, or changes hidden by overlapping vessels may also be missed.

It can suggest narrowing when there is no fixed blockage. Temporary artery spasm, movement, vessel overlap, or shortening caused by the viewing angle can create this appearance. Estimating a percentage by eye can also differ between readers.

The test mainly shows the space through which blood travels. It does not fully show the artery wall or reliably prove whether a narrowing is reducing blood supply. Intravascular ultrasound, pressure-wire testing, CT angiography, MR angiography, or Doppler ultrasound may answer those questions better in some situations.

Risks and complications

A small bruise, tenderness, or mild swelling at the catheter site is common. Some people feel faint during needle or catheter procedures.

Less common complications include significant bleeding, infection, artery damage, a clot, or reduced blood flow beyond the access site. The exact risk differs according to the artery studied, your health, the access site, and whether treatment is performed.

Iodinated contrast can cause an allergic-like reaction. Most reactions are mild, but serious reactions can occur. Contrast can also worsen kidney function, particularly in people who already have significant kidney disease or other risk factors.

The procedure uses ionising radiation. The team aims to use the lowest amount needed to obtain useful images. Procedures that are complex or include treatment may require more radiation.

Rare but serious complications can include stroke, heart attack, major bleeding, or the need for urgent surgery. These risks are more relevant for some types of arteriogram than others.

What happens next

A clinician may discuss the main findings with you shortly after the procedure. A final report may follow after the images have been reviewed.

You will receive instructions about the access-site dressing, bathing, activity, medicines, and when to return to work. Follow the specific limits provided for lifting and exercise, especially after groin or wrist access.

A small, stable bruise and mild soreness can usually be discussed during routine follow-up.

Contact the procedure team promptly if the site becomes increasingly painful, red, warm, swollen, or starts draining fluid.

Seek emergency help for bleeding that does not stop with firm pressure, rapidly increasing swelling, fainting, chest pain, severe breathing difficulty, or signs of a stroke. Also get urgent help if the arm or leg beyond the access site becomes cold, pale, numb, weak, or severely painful.

Common questions

Can I drink coffee before an arteriogram?

Not if your instructions say to fast. Some facilities allow certain clear liquids, but coffee may not be permitted, particularly with milk or cream. Follow the instructions from the facility rather than assuming black coffee is allowed.

Does the time of day matter?

The time usually does not change what your arteries look like. Scheduling may affect how long you need to fast and how much recovery time remains before going home.

Can I exercise beforehand?

Ordinary activity does not usually alter the images. Avoid strenuous exercise if it worsens your symptoms or if the procedure team has told you to limit activity. After the test, lifting and exercise restrictions help protect the access site.

Will I be awake?

Many people remain awake with local anaesthetic and light sedation. Deeper sedation or general anaesthesia may be used for some procedures, depending on the location, complexity, and your health.

Can I drive myself home?

You will commonly need someone else to drive, especially if you receive sedation. Follow the facility's discharge rules even if you feel alert.

Does a shellfish allergy mean I cannot have contrast?

No. Shellfish allergy does not specifically predict a reaction to iodinated contrast. A previous reaction to contrast is more relevant, so describe what happened and how it was treated.

Sources



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