

Q. What are the risks of having an angiogram?

A. With modern techniques, angiography is safe and complications are infrequent. However, because the examination includes the use of catheters in your arteries and the use of contrast injection, there is some risk.

Placing a catheter in your artery can damage the artery and may result in bleeding. Even when the artery has not been damaged, you may have a bruise or small lump where the catheter was inserted. The bruise or lump may be sore, but will go away in a few days to a week.

A few patients may get ill from contrast injection. Patients with diabetes, kidney disease or asthma, and those who have had a previous allergic reaction to contrast, tend to get sick more often. If you have kidney disease or are diabetic, asthmatic, or allergic to contrast, let your interventional radiologist know before your procedure begins.

Other complications can occur depending on what artery is being studied. The exact risks of your angiogram will be discussed with you in more detail by a member of your interventional radiology team before your procedure begins.

Q. What is the benefit of having angiography?

A. Angiography can give your doctors exact information about your arteries and help them plan the best treatment for you.

Q. What is an interventional radiologist?

A. Interventional radiologists are doctors who specialize in minimally invasive, targeted treatments performed using guided imaging. They use their expertise in reading x-rays, ultrasound, MRI, and other diagnostic imaging equipment to guide tiny instruments, such as catheters, through blood vessels or through the skin to treat diseases without surgery. Interventional radiologists are board certified radiologists that are fellowship trained in nonsurgical interventions using guided imaging. Their specialized training is certified by the American Board of Medical Specialities. Your interventional radiologist will work closely with your primary care or other physician to be sure you receive the best possible care.

You or a member of your family has been referred to an interventional radiologist for an angiogram. This brochure will answer some of the questions you may have about how and why angiography is used.

For more information on interventional radiology, please contact the Society of Interventional Radiology at 1-800-488-7284 or visit our Web site at www.SIRweb.org

INTERVENTIONAL RADIOLOGY Angiography



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Questions and Answers about Angiography

Q. What is angiography?

A. Angiography is an X-ray examination of your arteries and can be used to look at arteries throughout the body. This procedure is performed by an interventional radiologist, a physician who specializes in minimally-invasive, targeted treatments using imaging guidance. During the angiogram, the interventional radiologist inserts a thin tube (a catheter) into one of your arteries through a very small incision in the skin, about the size of a pencil tip. Contrast (X-ray dye) is then injected into the artery while X-rays are taken of the area. The contrast makes the artery visible on the X-rays. The angiogram helps your interventional radiologist and other doctors plan the best treatment for you.

Q. Why do I need an angiogram?

A. One of the most common reasons for an angiogram is to find out if a blocked artery is causing your symptoms. For example, a blocked artery in the leg may cause pain in your leg when you walk; in the kidney may cause high blood pressure and; and in the brain may cause vision problems and weakness. An angiogram can determine exactly where the artery is obstructed, how severe the blockage is, and what is causing it. The two most common causes of blocked arteries are a blood clot in the artery and atherosclerosis (hardening of the arteries caused by a build up of plaque). Another common reason for an angiogram is to see if you have an aneurysm, which is an area of an artery that has ballooned out. Although other medical tests, such as physical examination, ultrasound, computed tomography (CT) scan, or magnetic resonance (MR) can detect an aneurysm, an angiogram may be necessary to see it in detail and to plan treatment.

Angiograms also are used to diagnose difficult problems not resolved by other tests. They are also sometimes used by physicians to help choose the best procedure for you. Before your angiogram begins, a member of the interventional radiology team — the doctor, nurse, or technologist — will talk with you about the procedure in detail and answer any questions you have.



In an angiogram, contrast is injected to help the interventional radiologist view the blood vessels.

Q. What is an angiogram like? Does it hurt?

A. An angiogram has three major steps: insertion of a small catheter into your body, injection of contrast into an artery while X-ray images are obtained, and removal of the catheter.

Catheter insertion. A member of the interventional radiology team will wash the skin where the catheter will be inserted. This area is usually at the top of the leg or on the upper arm. The doctor will then give you a local anesthetic to numb the skin and deeper tissues. After that, you will only feel pressure when the catheter is inserted into the artery through a tiny nick in the skin. The doctor will guide the catheter to the artery by viewing it on an X-ray screen. You will not feel the catheter moving through your arteries.

Contrast injection. When the catheter is in the correct position, contrast will be injected through it while X-ray pictures are taken. Sometimes you will feel warm inside when the contrast is injected, but that only lasts for a few seconds. In most cases, several contrast injections and several sets of X-rays are needed to complete the examination.

Catheter removal. After the examination is finished, a member of the interventional radiology team will remove the catheter from your artery, which does not hurt. Pressure will be applied to the place where the catheter was inserted for 10 minutes to 20 minutes. This pressure stops bleeding and stitches are not needed.

The angiogram usually takes one or two hours to complete. In some cases, it may take longer. In other cases, the interventional radiologist will do a second procedure, such as an angioplasty, at the same time as the angiogram, making the procedure longer.

Q. How do I prepare for my angiogram?

A. If you are already a patient in the hospital, your nurses and doctors will give you instructions on how to prepare for your angiogram.

If you are being admitted to the hospital on the morning of your angiogram, or if you are having your procedure done as an outpatient, follow these instructions, unless your doctor specifies otherwise:

- **Eating.** Do not eat any solid food after midnight on the night before your procedure. You may drink clear fluids.
- **Medication.** Most people can continue to take their prescribed medicines. If you are a diabetic and take insulin, ask your doctor about modifying your insulin dose for the day of your procedure. If you are taking the oral anti-diabetic medicine glucophage (Metformin), you will need to discontinue use for up to 48 hours prior to the procedure and 48 hours following the procedure. Consult with your doctor about blood sugar control during this period. If you take a blood thinner such as Coumadin, you must tell your doctor so that it can be stopped. Bring all your medications with you.
- **Allergies.** If you are allergic to contrast (X-ray dye) or iodine, let your doctor know as soon as possible. If possible, let the interventional radiologist know about your allergy a few days before your angiogram. Your doctors can then plan to take special precautions during the procedure or prescribe special medications prior to the procedure.
- **Smoking.** Do not smoke for at least 24 hours before your angiogram.

Blood tests are usually done the day before the angiogram. Before your procedure, you will dress in a hospital gown and an intravenous (IV) line will be placed in one of your veins. You may need to remove your jewelry, and any dentures or partials. The IV will be used to give you fluids and medicines during the procedure and will stay in place until after your angiogram is completed.

Q. What happens after my angiogram?

Can I go home?

A. The interventional radiologist will study the X-ray images and discuss the results with your other doctors. Your doctors will work with each other and you to provide you with the best treatment.

If you are already a patient in the hospital, or if you have been scheduled to be admitted to the hospital immediately after your angiogram, you will stay in the hospital after your study is completed. You will return to your hospital room, and the nursing staff will ensure you are all right and that you do not bleed where the catheter was inserted into your artery. They will let you know when you can eat and how long you need to stay in bed.

If you are returning home on the day of your angiogram, you will stay in the hospital for four to six hours after the angiogram is completed. After this observation period, you will be allowed to go home. Have someone drive you home after your procedure. You should not attempt to drive yourself.

After you go home:

- DO resume taking routine medicine except for glucophage.
- DO relax and take it easy for 24 hours.
- DO drink plenty of fluids.
- DO resume your regular diet.
- DO keep a bandage on the catheter insertion site for a day. Put on a dry, clean bandage after bathing.
- DO NOT drive or run machinery for at least 24 hours.
- DO NOT do any strenuous exercise or lifting for at least two days.
- DO NOT take a hot bath or shower for at least 12 hours.
- DO NOT smoke for at least 24 hours.

Call your doctors immediately if:

- you start to bleed where the catheter was inserted. If you begin to bleed, lie down flat and apply pressure on the bleeding area. Your doctor will tell you if you need to return to the hospital.
- there is any change in the color or temperature of the area where the catheter was inserted.
- there is a numbness, coolness, or change in color of the arm or leg, where the catheter was inserted.