

Angiography: Carotid Angiogram

How to prepare and what to expect

This handout explains how a carotid angiogram works, how it is done, how to prepare, what to expect during the exam, and how to get your results.

What is a carotid angiogram?

An *angiogram* is an X-ray picture of the inside of your blood vessels. A *carotid angiogram* is a study of the inside of your *carotid arteries*.

Carotid arteries are large blood vessels in your neck. They carry oxygen-rich blood from your heart to your brain.

A carotid angiogram is used to diagnose problems in the carotid arteries such as:

- *Carotid stenosis* (narrowing of the carotid artery)
- *Atherosclerosis* (a buildup of a sticky substance called *plaque* that narrows the artery)

Symptoms of these problems include dizziness, confusion, or stroke.

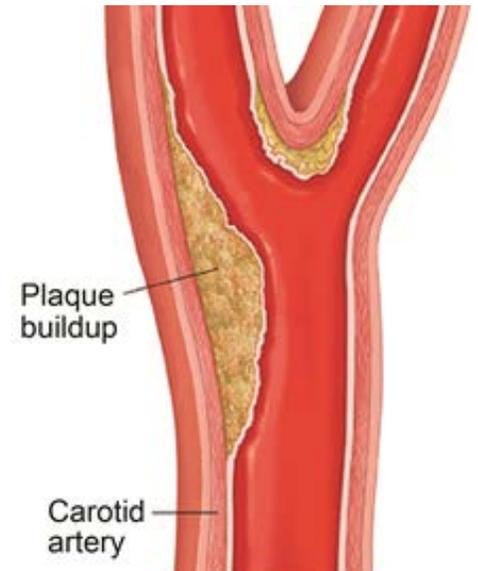
How are these problems treated?

This procedure is done by an *interventional radiologist*, a doctor who specializes in using X-rays to guide procedures.

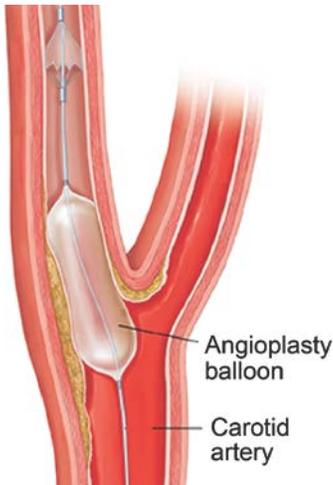
If the carotid angiogram shows narrowing in your arteries, treatments (*interventions*) may include:

- *Angioplasty* (using a tiny balloon to stretch the inside of the artery)
- A *stent* (mesh-metal tube) placed in the artery to hold it open

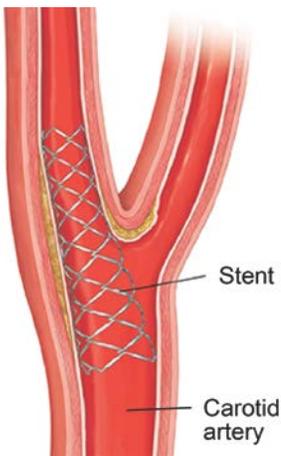
One or both of these interventions may be done at the same time as your carotid angiogram (see drawings on page 2).



Your angiogram will show if plaque buildup is causing your symptoms.



Angioplasty uses a tiny balloon to stretch the artery.



A stent can be placed in the artery to hold it open.

How do I prepare?

- **Allergies.** Tell your healthcare provider if you have ever had any reactions to *contrast* (X-ray dye), seafood, or other items that contain iodine. If you do have severe reactions to these items, your provider will prescribe medicine for you to take before the procedure.
- **Kidney function.** Tell your provider if you have any history of abnormal kidney function.
- **Changes to diabetes medicines.** If you have diabetes and take insulin or an oral diabetes medicine, we will give you instructions about holding or adjusting your dose for the day of your procedure.
- **Blood-thinning medicines.** If you take any blood thinners such as Lovenox, Coumadin, or Plavix, you may need to stop taking the medicine for 2 to 7 days before your procedure. The length of time depends on which medicine you are taking. If you have not been told what to do, contact your primary doctor or the clinic that prescribes the medicine for instructions about when to stop taking your medicines.

IMPORTANT: If you have ever had a heart stent, a prosthetic heart valve, a *pulmonary embolism*, or have *atrial fibrillation* with a history of a stroke, you **must** contact the provider who prescribes your blood-thinning medicine. Ask what to do about your dose in the days before your procedure.

- **Overnight stay.** It is a good idea to plan for staying overnight at the hospital. You may be admitted to the hospital for observation after your procedure.

Day Before Your Procedure

- The day before your procedure, you may eat as usual.
- Make plans for a responsible adult to drive you home after your procedure and stay with you the rest of the day. **You may NOT drive yourself home or take a bus, taxi, or shuttle on your own.** If you need to take a bus, taxi, or shuttle, the responsible adult **must** ride with you.

Procedure Day

- Take your usual medicines on the day of the procedure, unless the doctor or a nurse tells you not to.
- Starting **6 hours** before your procedure, **stop eating solid foods.** You may only have *clear liquids* (liquid you can see through), such as water, broth, cranberry juice, or weak tea.

- Starting **2 hours** before your procedure, take **nothing** at all by mouth.
 - If you must take medicines, take them with **only** a sip of water.
 - Do not take vitamins or other supplements. They can upset an empty stomach.
- Bring with you a list of all the medicines you take.
- If there is a delay in getting your procedure started, it is usually because we need to treat other people with unexpected and urgent problems. Thank you for your patience if this occurs.

At the Hospital

- Check in at Admitting on the 3rd floor (main level) of the hospital. Admitting is near the lobby, to the right and behind the Information Desk.
- You may have also been given instructions to go to the **Outpatient Lab** for a blood draw. The lab is behind the Cascade elevators, next to Outpatient Pharmacy. You can go to the lab either before or after you check in at Admitting.
- After checking in and having your blood drawn, take the Pacific elevators to the 2nd floor. Check in at the Radiology reception desk.
- A staff member will:
 - Take you to a pre-procedure area
 - Give you a hospital gown to put on
 - Give you a bag for your belongings.
- While you are in the pre-procedure area:
 - Your family or a friend can be with you.
 - A nurse will ask you some health questions, take your vital signs (such as heart rate, blood pressure), place an *intravenous* (IV) tube in your arm, and go over what to expect.
 - A radiologist or physician assistant will talk with you about the procedure. They will ask you to sign a consent form, if you have not already signed one.
 - You will be able to ask any questions you have.

Your Procedure

- The nurse will take you to the Radiology suite. This nurse will be with you for the entire procedure.
- You will lie flat on an exam table.

- We will use these devices to help monitor you during the procedure:
 - Wires on your chest will help us watch your heart
 - A cuff around your arm will let us check your blood pressure
 - Prongs in your nose will give you oxygen and a probe on one of your fingers will show us how well you are breathing the oxygen
- To keep you from feeling pain, you will be given a local *anesthetic* (numbing medicine) at the site in your groin where the procedure will be done. You will also be given a *sedative* (a drug to help you relax). The sedative will be given to you through your IV.
- The doctor will use X-rays to help place a long, thin tube (*catheter*) into a blood vessel in your groin. Although it seems like a long way from the groin area to the neck, the groin is the safest place to enter an artery.
- The doctor will use small wires to guide the catheter to your carotid artery. Contrast is then sent into the catheter. You may feel a warm or hot flush spreading all over your body when the contrast goes in. You may also feel like you have to urinate or have a bowel movement. These feelings are normal and should last only a few seconds.
- X-rays are taken of your head and neck while the contrast moves through your blood vessels. The X-rays show where an artery is blocked, narrowed, leaking, or enlarged.
- If your doctor decides that an intervention can repair the problem in your carotid artery:
 - An angioplasty will be done or a stent will be placed at this point. It is normal to feel pressure or slight pain at the site of these procedures.
 - X-rays will be taken again to show the change in the blood flow.
 - After the intervention, the catheter will be removed. A device will be used to close the opening in the artery. If the doctor cannot close the artery using a device, we will apply manual pressure to the site for 20 to 30 minutes to stop bleeding. If a device is used, you will have to lie flat on your back for 2 to 3 hours. If no device is used, you will have to lie flat on your back for 6 hours.
- An angiogram by itself takes about 1½ hours. If an intervention is done, the procedure will take more time. And, if no device is used to close the artery, the wait will be longer. People waiting for you should expect to wait at least 4 hours. This includes time to prepare you, do the procedure, and apply pressure at the puncture site.

Are there any risks from an angiogram?

You may have:

- An allergic reaction to the contrast (X-ray dye), such as:
 - Hives
 - Drop in blood pressure
 - Swelling of the skin
 - Loss of consciousness
- An allergic reaction to the local anesthetic
- Minor discomfort if the local anesthetic does not completely numb the area
- A kidney problem that is made worse by the contrast
- A blood clot that forms around the catheter insertion site or at the catheter tip that blocks your blood vessel
- An injury to the groin artery where the catheter is inserted, causing bleeding or a blockage of blood flow to the leg
- Surgery to correct damage caused by the procedure
- An infection from the puncture site

What can I expect after my procedure?

- We will watch you closely for a short time in the Radiology department.
- Most patients then go to a short-stay unit in the hospital, unless your referring doctor made other plans. Your family member or driver may go with you to this unit.
- Most patients are monitored for 2 to 6 hours. During this time, you must remain flat in bed to reduce bleeding from the groin site.
- You should be able to eat, drink, and take your normal medicines.
- If an intervention was done, you may need to stay overnight in the hospital so that we can monitor your recovery.
- Before you leave the hospital, a nurse will give you a written plan for you to follow at home.

How and when will I get my results?

Check with your referring doctor about when to expect your results. Your referring doctor will receive your results on the same day that you have your angiogram.

What warning signs should I watch for?

Call your provider **right away** if:

- Your leg or foot becomes cold or numb.
- The puncture site begins to bleed, swell, or becomes more painful.
- You have slurred speech, balance problems, or trouble using your arms.
- You get a skin rash.

Who to Call

UWMC Radiology Care Coordinator 206.598.6897

Procedure scheduling 206.598.6209

After hours (between 5 p.m. and 7 a.m.), and on weekends and holidays
Ask for the Interventional Radiology Fellow on call 206.598.6190

Urgent Care

If you need urgent care, go to the nearest Emergency Room or call 911 right away. Do not wait to contact one of our staff.

Questions?

Your questions are important. Call your doctor or healthcare provider if you have questions or concerns.

UWMC Imaging Services:
206.598.6200