

## Angiography: Kidney Exam

### *How to prepare and what to expect*

*This handout explains how to prepare and what to expect when having a kidney exam using angiography.*

### What is angiography?

*Angiography uses live X-rays (fluoroscopy) to study parts of the body. A renal angiogram is a study of the kidney. This exam is done by an interventional radiologist who is skilled in diagnostic imaging.*

### Why do I need this exam?

Renal angiograms are often done for someone who:

- Has high blood pressure at a very young age
- Is taking 3 or more blood pressure medicines
- Has very bad side effects when taking blood pressure medicine

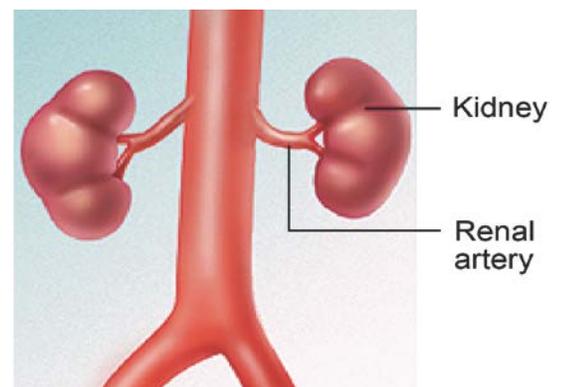
These symptoms may be caused by problems with blood flow to the kidneys. Your angiogram will show if there is narrowing, a block, or other problems in your *renal arteries* (blood vessels that supply blood to your kidneys).

### What happens during the exam?

The radiologist uses fluoroscopy to guide a tiny tube (*catheter*) through your *femoral artery* (the blood vessel in your groin) to one of your renal arteries. X-rays are taken while *contrast* (X-ray dye) is injected into the catheter. Contrast helps blood flow show more clearly on the X-rays. The radiologist uses these X-rays to help move the catheter to the right area in the renal artery.

This process may then be repeated with the other renal artery, if needed.

If the X-rays show that one or both of your renal arteries has narrowing, the radiologist may also treat that problem at the same time. Treatment (an *intervention*) may be done using one or both of these procedures:



*Renal arteries carry blood to the kidneys.*

- *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

Most patients who have an intervention are admitted to the hospital for an overnight stay. If you do not need treatment, you will go home after you have rested and you can get up and walk.

## How do I prepare for the angiogram?

- **Allergies.** Tell your healthcare provider if you have had any reactions to contrast, seafood, or other items that contain iodine. If you 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 related to your existing kidney disease.
- **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 angiogram.
- **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, ask your primary provider or the clinic that prescribes the medicine for instructions about when to stop taking them.

**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** ask the provider who writes your blood-thinning prescription what to do to prepare for your angiogram.

### Day Before Your Angiogram

- The day before your procedure, you may eat as usual.
- Plan for a responsible adult to take 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.** The responsible adult may either drive or ride the bus, taxi, or shuttle with you.

### Day of Your Angiogram

- Take your usual medicines on the day of the procedure, unless the doctor or a nurse tells you otherwise.
- 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 a list with you of all the medicines you take.
- Plan to spend most of the day in the hospital for the procedure. If there is a delay in getting started, it is usually because we need to treat other people with unexpected and urgent problems. Thank you for your patience if this occurs.
- Some patients may need to stay overnight after their intervention. Ask your radiologist if there is a chance that you will stay in the hospital the night after your procedure.

### **What should I expect 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 received instructions to go to the **Outpatient Lab** for a blood draw. The lab is behind the Cascade elevators, next to the 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 friend can be with you.
  - A nurse will ask you some health questions, take your vital signs (such as heart rate), 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 on a flat exam table.
- X-rays will be taken during the procedure to help your doctor see exactly where to place the catheter.
- These devices will be used to help us 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 provide oxygen and a probe on one of your fingers will show us how well you are breathing the oxygen

## How does the exam work?

### Angiogram

- The nurse will stay with you during the procedure to watch your blood pressure, heart rate, breathing rate, and your comfort level.
- A radiology technologist will clean your skin with a special soap and may shave some hair to the right or left of your groin area.
- You will have an *intravenous line* (IV) placed in a vein in your arm. You will be given a sedative (drug to help you relax) through your IV to help you feel as comfortable as possible.
- The nurse may place a tube in your bladder to drain urine.
- To keep you from feeling pain when the catheter is inserted, you will be given a *local anesthetic* (numbing medicine) at your groin. A long, slim catheter will then be placed into a blood vessel in your groin.
- Contrast is then sent through the catheter. You may feel a warm or hot flush spread over your body as the contrast enters your artery. 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 the blood flow through your kidneys while the contrast moves through your blood vessels. The X-rays show where an artery might be blocked, narrowed, leaking, or enlarged.
- The radiologist will measure the pressure of the blood flowing through your kidneys. This measurement helps the radiologist know if a narrowing is reducing blood flow to the kidney.
- If an intervention can be done, it will be done at this time.

## **Intervention**

- During an intervention, it is normal to feel pressure or slight pain at the site that is being worked on. Please tell your nurse if you are feeling pain.
- X-rays will be taken again to show the change in the blood flow.
- After the intervention, we will remove the catheter.
- Most times, the radiologist will use a device to close the opening in the artery. If a device is used, you must lie completely flat for 2 to 3 hours.
- If the radiologist cannot close the artery with a device, we will apply manual pressure to the site for 20 to 30 minutes to stop bleeding. If this occurs, you must lie completely flat for 6 hours.

## **What can I expect after my procedure?**

- You will be watched closely for a short time in the Imaging Services/Radiology department.
- Most patients then go to a short-stay unit within the hospital, unless your referring doctor has made other plans. Your family member or driver may go with you to this area.
- Patients are usually monitored for 2 to 6 hours. During this time, you must remain flat in bed to reduce bleeding from the groin site. Plan to stay in the hospital for this length of time.
- 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 to follow at home.

## **When to Call**

Call us **right away** if you have:

- Severe bleeding or any bleeding that does not stop after you have applied pressure for about 15 minutes
- Fever higher than 101°F (38.3°C)
- Chills
- Shortness of breath that is getting worse
- New chest pain
- Dizziness
- Vomiting

## Who to Call

UWMC Radiology Patient 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 talk with 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

UWMC Interventional  
Radiology/Angiography:  
206.598.6209