

Percutaneous Dialysis Fistula or Graft Treatment

How to prepare and what to expect

This handout explains what to expect when your doctor needs to work on your dialysis fistula or graft.



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What is dialysis or graft?

Kidneys filter blood to balance fluids and remove waste products. *Hemodialysis* is a process used to filter blood for people who have *renal* (kidney) failure. For hemodialysis, your surgeon creates a *fistula* (a connection of an artery and a vein) or places a *graft* (a synthetic tube) between an artery and a vein.

During dialysis we will place 2 needles into the fistula or graft to draw blood out. Your blood is filtered and then returned to the body.

When a fistula or graft is working well, it has:

- A *bruit*, which is a rumbling sound that you can hear
- A *thrill*, which is a rumbling sensation that you can feel
- Good blood flow

Why does my fistula or graft need to be evaluated and repaired?

Over time, problems usually occur with all fistulas and grafts. The most common problems are:

- The flow in the graft slows down, making dialysis less efficient. This slowing may occur because vein blockages hamper blood drainage or because the flow from the artery into the fistula is reduced.
- The graft or fistula becomes completely blocked with blood clots and no longer works at all.
- There is swelling or pain in your arm, or your hand feels numb or cool.

Your doctor may recommend an *angiogram* to find the reasons for these problems. An angiogram uses *catheters* (thin plastic tubes) to study your blood vessels. When the cause is found, it can often be fixed right away using a *percutaneous* (through the skin) method.

An angiogram and percutaneous procedures are done by an *interventional radiologist*, a doctor or advanced practice provider with special training in procedures that are guided by X-rays. A percutaneous procedure is often as effective as surgery and is usually safer.



Talk with your provider if you have any questions about your procedure.

How is this procedure done?

The procedure usually takes about 1 to 2 hours. During this procedure:

- Your doctor will insert 1 or 2 catheters into your fistula or graft. This is a lot like having dialysis needles placed.
- *Contrast* (X-ray dye) is then injected through the catheter while X-rays are taken. These X-ray images will show where the problem is.
- If there are narrowed areas, those sites may be opened with a balloon catheter (angioplasty).
- Sometimes, a *stent* must be placed. A stent is a metal tube that helps keep the blockage open.
- If the fistula or graft is completely clotted, your doctor will inject a material that dissolves clots, or use a device that breaks up clots. Any areas of narrowing are then treated in the same way.

What are the side effects or risks?

Angiography of your fistula or graft is usually very safe. After the procedure, you may have a slight bruise and tenderness over the site where the catheters were placed.

The most common problems after angiography are:

- A growing hematoma (a blood clot under your skin)
- Bleeding out of your skin

Less common problems include:

- Complete clotting of your fistula or graft
- Infection

Your doctor will talk with you about these risks before your procedure. Please make sure all your questions and concerns are answered.

Sedation

Before your procedure, you may be given a *sedative* (medicine to make you relax) through an *intravenous line* (IV) in one of your arm veins. This is called *moderate sedation*. You will stay awake but feel sleepy. You will still feel sleepy for a while after the procedure.

For some people, using moderate sedation is not safe. If this is true for you, you will need general *anesthesia* (medicine to make you sleep).

Let us know **right away** if you:

- Have needed anesthesia for basic procedures in the past
- Have *sleep apnea* or chronic breathing problems (you might use a CPAP or BiPAP device while sleeping)

- Use high doses of an *opioid* pain medicine
- Have severe heart, lung, or kidney disease
- Have back or breathing problems that make it hard to lie flat for about 1 hour
- Have a hard time lying still during medical procedures
- Weigh more than 300 pounds (136 kilograms)

If you have any of these health issues, we may need to give you different medicines. Instead of a sedative, you might receive:

- Only a *local anesthetic* (numbing medicine), such as lidocaine.
- A local anesthetic and a single pain or anxiety medicine. This is called *minimal sedation*.
- *General anesthesia* (medicine to make you sleep). This medicine is given by an anesthesia provider.

Before Your Procedure

A nurse will call you within 5 days of your procedure. They will give you important instructions and answer any questions you have.

- If you do not understand English well enough to understand the instructions from the nurse or the details of the procedure, tell us right away. We will arrange for a hospital interpreter to help you. A family member or friend **cannot** interpret for you.
- Most patients need blood tests done before this procedure. We may be able to do your blood tests when you arrive for your procedure. We will tell you if we need a blood sample before that day.
- If you take any blood-thinning medicines (such as Coumadin, Lovenox, Fragmin, or Plavix), you may need to stop taking the medicine for 3 to 9 days before your procedure. Do NOT stop these medicines unless your doctor or nurse has told you to do so. We will give you instructions as needed.
- You must arrange for a responsible adult to drive you home after your procedure and stay with you the rest of the day. You cannot drive yourself home or take a bus, taxi, or shuttle.

The Day of Your Procedure

To prepare for sedation, follow these instructions exactly. Starting at midnight, the night before your procedure:

- Do not eat or drink anything.
- Do not take any of the medicines that you were told to stop before this procedure.

- If you must take medicines, take them with only a sip of water. Do not skip them unless your doctor or nurse tells you to.
- Do not take vitamins or other supplements. They can upset an empty stomach.

Bring with you to the hospital a list of all the medicines you take.

Please plan to spend most of the day in the hospital. If there is a delay in getting your procedure started, it is usually because we need to treat other people who have unexpected and urgent health issues. Thank you for your patience if this occurs.

At the Hospital

A staff member will give you a hospital gown to put on and a bag to put your belongings in. You may use the restroom at that time.

A staff member will take you to a pre-procedure area. There, a nurse will do a pre-procedure assessment. A family member or friend can be with you in the pre-procedure area.

An *intravenous* (IV) line will be started. You will be given fluids and medicines through the IV.

An interventional radiology doctor will talk with you about the procedure, answer any questions you have, and ask you to sign a consent form, if you have not already done this.

After Your Procedure

You will be moved to a room on the short-stay unit on the hospital.

Once you are settled in to your room:

- Your family member or friend will be able to be with you.
- You will need to rest flat on your back for 2 to 6 hours to allow your puncture site to heal.
- You will be able to eat and drink.

Before you get up to walk, we will assess you to make sure you can walk safely. A staff member will help you get out of bed.

You will be able to go home the same day when:

- You can eat, drink, and use the restroom
- Your nausea and pain are under control
- Your vital signs are stable

When You Get Home

- Relax at home for the rest of the day. Make sure you have a family member, friend, or caregiver to help you. You may feel drowsy or have some short-term memory loss.

- For 24 hours, do not:
 - Drive a car or use machinery
 - Drink alcohol.
 - Make important personal decisions or sign legal documents.
 - Be responsible for the care of another person
- After 24 hours, you may shower or take a bath.
- There is usually only minor pain after dialysis fistula or graft treatment. If your doctor says it is OK for you to take acetaminophen (Tylenol), this should ease any discomfort you have. If your doctor expects you to have more severe pain, you will receive a prescription for a stronger pain medicine.
- Resume taking your usual medicines as soon as you start to eat. Take **only** the medicines that your doctors prescribed or approved.

When to Call

Call us right away if you have:

- Mild fever, pain, redness, swelling at the puncture site or dizziness
- Mild shortness of breath, chest tightness or chest pain
- Any other non-urgent questions or concerns

Call 911 and go to the nearest emergency department if you have:

- Severe bleeding that will not stop, even after you apply pressure to the puncture site
- Drainage from your incision
- Fever higher than 101°F (38.3°C) or chills
- Shortness of breath that is getting worse
- New chest pain
- Dizziness
- Vomiting

Who to Call

University of Washington Medical Center and Northwest Hospital

Weekdays from 8 a.m. to 4:30 p.m., call the Interventional Radiology Department:

- Montlake: 206.598.6209, option 2
- Northwest: 206.598.6209, option 3

Harborview Medical Center

Weekdays from 8 a.m. to 4:30 p.m., call the Interventional Radiology Department at 206.744.2857.

Questions?

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

UWMC – Montlake:
206.598.6209, option 2

UWMC – Northwest:
206.598.6209, option 3

Harborview Medical Center:
206.744.2857

After hours and on weekends and holidays:
Call 206.598.6190 and ask to page the Interventional Radiology resident on call.