Percutaneous Dialysis Fistula or Graft Treatment

What to expect

What is a dialysis fistula or graft?
Kidneys filter blood to balance fluid and electrolytes and remove waste products. The process called hemodialysis is used to filter blood for people who have chronic renal (kidney) failure. For hemodialysis, your surgeon creates a fistula (a connection of an artery and a vein) or places a graft (a man-made tube) between an artery and a vein.

Dialysis is done by placing 2 needles into the fistula or graft to draw blood out, filter it, and then return it to the body. When a fistula or graft is working well, it has a bruit (a rumbling sound that you can hear), a thrill (a rumbling sensation that you can feel), and good blood flow.

Why does my fistula or graft need to be evaluated and possibly 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 with special training in procedures that are guided with X-rays. A percutaneous procedure is often as effective as surgery and is usually safer.

**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 up 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, a material that dissolves clots is infused to break up the clot. Or, a device that breaks up clots may be used. 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 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 of your questions and concerns are addressed.
Before Your Procedure

- If you are an outpatient, a nurse coordinator will call you the afternoon before your procedure. If your procedure is on a Monday, the nurse will call you the Friday before. The nurse will give you final instructions and answer any questions you have.

- If you do not understand English well enough to understand these instructions or the details of the procedure, tell us as soon as possible. We will arrange for a hospital interpreter to assist you. A family member or friend may not interpret for you.

- You will need blood tests when you arrive for the procedure.

- If you have a history of allergy or bad reaction to contrast, please call our nurse coordinators at one of the phone numbers on the last page of this handout. You may need medicine for this allergy before the procedure.

- 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 the procedure. You will receive instructions about this.

- If you have diabetes and take insulin or metformin (Glucophage), you will receive instructions about holding or adjusting your dose for the day the procedure is planned.

Sedation

- When the procedure is done, you will be given a sedative medicine (similar to Valium and morphine) through your IV. This medicine will make you sleepy, help you relax, and lessen your discomfort. You will stay awake. This is called conscious sedation. You will still be sleepy for a while after the procedure.

- For some people, using conscious sedation is not safe. If this is true for you, you will need anesthesia (medicine to make you sleep during the procedure). 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 narcotic painkiller
  - Have severe heart or lung disease
  - Cannot lie flat for about 1 hour because of back or breathing problems
  - Have a hard time lying still during medical procedures
  - Weigh more than 300 pounds (136 kilograms)
Day Before Your Procedure

To prepare for sedation, follow these instructions closely:

- The day before your procedure, you may eat as usual.
- Starting 6 hours before your procedure, you may only have clear liquids (liquid you can see through such as water, Sprite, 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.
- You must have a responsible adult drive you home and stay with you the rest of the day. You may NOT drive yourself home or take a bus, taxi, or shuttle.

On the Day of Your Procedure

- Take all of your other usual medicines on the day of your procedure. Do not skip them unless your doctor or nurse tells you to.
- Bring a list of all the medicines you take with you.
- Please plan to spend most of the day in the hospital. Our hospital has many critically ill patients. If there is a delay in getting your procedure started, it is usually because we need to treat other people with unexpected and very urgent problems. Thank you for your patience if this occurs.
- Unless you are told otherwise:
  - If you are a patient at University of Washington Medical Center (UWMC), check in at Admitting on the 3rd (main) floor of the hospital. Admitting is to the right and behind the Information Desk in the lobby.
  - If you are a patient at Harborview Medical Center (HMC), check in at the Ambulatory Procedure Area (APA) on the 8th floor of the Maleng Building.
- A medical assistant will give you a hospital gown to put on and a bag for your belongings. 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 health assessment. Your family or friend can be with you there.
• 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 and ask you to sign a consent if that has not already been done. 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 table that allows the doctor to see into your body with X-rays.

• Wires will be placed on your body to help us monitor your heart rate.

• You will have a cuff around your arm. It will inflate from time to time to check your blood pressure.

• A radiology technologist will clean your skin around your arm with a special soap. Tell this person if you have any allergies. The technologist may need to shave some hair from the area where the doctor will be working.

• The entire medical team will ask you to confirm your name and will tell you what we plan to do. This is for your safety.

• Then, your nurse will give you medicine to make you feel drowsy and relaxed before we begin.

• If needed, an interpreter will be in the room or will be able to talk with you and hear you through an intercom.

• Before the catheters are inserted into your fistula or graft (see description on page 2), the doctor will inject a local anesthetic (numbing medicine). You will feel a burning sensation for about 5 to 10 seconds. After that, the area should be numb and you should feel only minor discomfort.

After Your Procedure
• We will watch you closely for a short time in the Radiology department.

• If you are an outpatient, you will then go to a short-stay unit in the hospital. A different nurse will monitor you there.

• Most times, you will be able to eat and drink, and your family may visit you.
• Sometimes, a temporary stitch or device is placed on the graft or fistula to help stop bleeding. This stitch or device will be removed before you leave the recovery area.

• When you are fully awake and are able to eat, use the restroom, and walk, you will be able to go home.

• Problems are rare after this procedure. If they occur, we may need to keep you in the hospital overnight so that we can keep watching you or treat you.

• Before you leave the hospital, your nurse will tell you what activities you can do, how to take care of your incision, and other important instructions.

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:
• Severe bleeding
• New numbness or weakness in your treated arm
• Loss of pulse or thrill in your fistula/graft
• Fever higher than 101°F (38.3°C) or chills
• Worsening shortness of breath
Questions?

Your questions are important. Call your doctor or health care provider if you have questions or concerns. UWMC clinic staff are also available to help.

Radiology/Imaging Services:
206-598-6200

Who to Call

University of Washington Medical Center (UWMC) Patients
Interventional Radiology nurse 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

Harborview Medical Center (HMC) Patients
Patient Care Coordinators ....................... 206-744-0112 or 206-744-0113

After hours (between 5 p.m. and 7 a.m.), and on weekends and holidays
Ask for the Interventional Radiology Fellow on call ............ 206-744-0147

If You Have an Emergency

Go directly to the nearest Emergency Room or call 9-1-1. Do not wait to contact one of our staff.