

Learning About Hemodialysis and Vascular Access Surgery

What are hemodialysis and vascular access?

Hemodialysis is a way to remove wastes from the blood when your kidneys can no longer do the job. It is a lifesaving treatment when you have kidney failure. Hemodialysis is often called dialysis.

Before you can start dialysis, your doctor will need to create a place where the blood can flow in and out of your body during your dialysis sessions. This site is called the vascular access. Your doctor will prepare the vascular access weeks to months before dialysis starts. It is important to get your access as soon as your doctor says to. This allows your access to heal before you use it.

For dialysis to work best, the access needs to have a good, steady blood flow. It also must be sturdy since it will be used often, usually 3 times every week.

Learning about vascular access and dialysis can help you take an active role in your treatment. Dialysis does not cure kidney disease, but it can help you live longer and feel better. You will need to follow your diet and treatment schedule carefully.

How is vascular access surgery done?

The vascular access is where the needles are put that draw the blood from your body and send it through tubes to the dialysis machine. This access is also used to return the clean blood that is sent back into your body. There are two basic types of permanent vascular access:

- **AV fistula.** To make a fistula, your doctor will connect an artery to a vein in your arm. After the fistula heals, the dialysis needles can be put into it. Fistulas tend to be stronger and less likely to get infected than grafts. But they need to be prepared at least several months ahead of time. They are the best type of vascular access, but they are harder to create.
- **AV graft.** To make a graft, your doctor will put a tube under the skin in your arm. The tube, or graft, connects an artery and a vein. The dialysis needles can then be put into the graft for hemodialysis. A graft is a good choice if you have small veins or other problems. A graft can sometimes be used as soon as 1 to 3 weeks after placement.

You will be asleep or get medicine to feel relaxed during the surgery. You will not feel pain. Your doctor will make a cut (incision) on the arm you use the least. If you are right-handed, the fistula or graft will probably be put in your left arm. If you are left-handed, it will probably be put in your right arm. Your doctor will close the incision with stitches. The incision will leave a scar that fades with time.

If you need to start hemodialysis right away, your doctor may place a tube in a vein in your neck, chest, or leg. This is called a central venous catheter. The catheter can be used while your permanent access heals. Catheters have more problems than an AV fistula or AV graft, so they are not the best choice for permanent access.

If you get an AV fistula, you will probably go home the same day as the surgery. If you get an AV graft, you may spend 1 night at the hospital. You will probably need to take 1 or 2 days off from work.

How is dialysis done?

Hemodialysis uses a man-made membrane called a dialyzer to clean your blood. You are connected to the dialyzer by tubes attached to your blood vessels through your vascular access.

- Dialysis is done mainly by trained health workers who can watch for any problems.
- It allows you to be in contact with other people having dialysis. This can help provide emotional support.
- You can schedule your treatments in the evenings so you can keep working.
- You may be able to do home dialysis, which gives you more control over your schedule.
- You will need dialysis on a regular basis, usually 3 times a week. You will have to arrange your schedule to have these treatments.
- Dialysis can cause side effects. The most common side effects are low blood pressure and muscle cramps. These can often be treated easily.
- Dialysis requires needle sticks, which bother some people. Others get used to it and even do the needle sticks themselves.

What can you expect after you start dialysis?

- Be sure to go to all of your dialysis sessions. Do not try to shorten or skip your sessions. You have a better chance of a longer and healthier life by getting your full treatment.
- Your doctor or health care team will show you the steps you need to go through each day before, during, and after dialysis. Be sure to follow these steps. If you do not understand a step, talk to your team.
- Your doctor and dietitian will help you design menus that follow your diet. Be sure to follow your diet guidelines.
 - You will need to limit fluids and certain foods, such as salt (sodium), potassium, and phosphorus.
 - You may need to follow a heart-healthy diet to keep the fat (cholesterol) in your blood under control.
 - Ask your doctor how much protein you can have each day. Most people with chronic kidney disease need to limit protein. But you still need some protein to stay healthy.
- Your doctor may recommend certain vitamins. But do not take any other medicine, including over-the-counter medicines, vitamins, and herbal products, without talking to your doctor first.
- Do not smoke. Smoking raises your risk of many health problems, including more kidney damage. If you need help quitting, talk to your doctor about stop-smoking programs and medicines. These can increase your chances of quitting for good.
- Do not take ibuprofen (Advil, Motrin) or naproxen (Aleve), or similar medicines, unless your doctor tells you to. They may make chronic kidney disease worse. You may be able to take acetaminophen (Tylenol).

Follow-up care is a key part of your treatment and safety. Be sure to make and go to all appointments, and call your doctor if you are having problems. It's also a good idea to know your test results and keep a list of the medicines you take.



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