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Kidney Disease: Types of Vascular Access

Before you can start hemodialysis, your doctor will need to create a site 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 hemodialysis starts. It is important to get your access as soon as your doctor recommends it. This allows your access to heal before you use it.

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

Types of permanent vascular access

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.

There are two basic types of permanent vascular access: an arteriovenous (or AV) fistula and an AV graft.

- **AV fistula.** To make a fistula, your doctor will attach an artery to a vein, usually in your lower arm. Once the fistula heals and matures, the dialysis needles can be put directly 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.



- **AV graft.** To make a graft, your doctor will implant 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 week after placement.

If you need to start hemodialysis right away, your doctor may place a tube in a vein in your neck, chest, or arm. This is called a central vascular access device (CVAD). It can be used while your permanent access heals. CVADs have a higher rate of problems, so they are not the best choice for permanent access.

Pros and cons of fistulas and grafts

You might have a choice about what type of

vascular access (fistula or graft) you want. But, unless there is a medical reason for you to need a graft instead of a fistula, the AV fistula is the preferred one. Even if you do not

get to choose the type of access because of a medical reason, it may still help to understand the pros and cons of each type.

This information can help you understand the types of permanent vascular access and which type is best for you. By learning all you can, you'll be more able to take an active role in your treatment.

	AV fistula:	AV graft:
Pros	<ul style="list-style-type: none"> • Can last for many years. • Is less likely to clot or become infected than an AV graft. • Provides a good blood flow. 	<ul style="list-style-type: none"> • Is a choice if you have small blood vessels, which are often the result of age. • Can be used sooner than an AV fistula, usually in 1 to 3 weeks.
Cons	<ul style="list-style-type: none"> • Needs to be prepared at least several months ahead of use. • May not be an option if your veins are small or deep. • May require you to have a central vascular access device (CVAD) while you wait for the fistula to heal and mature. 	<ul style="list-style-type: none"> • Usually does not last as long as an AV fistula. • Can develop blood flow problems. • Is more likely to clot or become infected.

Emotional factors

Before you start hemodialysis, it may be helpful to visit the dialysis center. This can help you feel more at ease around the equipment and understand your choices better. It also lets you get acquainted with the nurses and technicians. They will be your partners in improving your health.

You may feel some fear about having a vascular access. You may be worried about having surgery. Or you may worry about infection. Usually the surgery is done on an outpatient basis, so you do not have to stay in

the hospital. You will be able to avoid infection by taking good care of your access. Your doctor and nurses will teach you how to care for your access. Some people have problems accepting the way their arm looks with a fistula. It may help to remember that a fistula is the best type of dialysis access. It may also help to talk to other people at the dialysis center who have fistulas.

It can be hard to make decisions when you feel very ill. Discuss your concerns with your loved ones and your doctor. Do not be afraid to ask questions or get help if you need it.



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