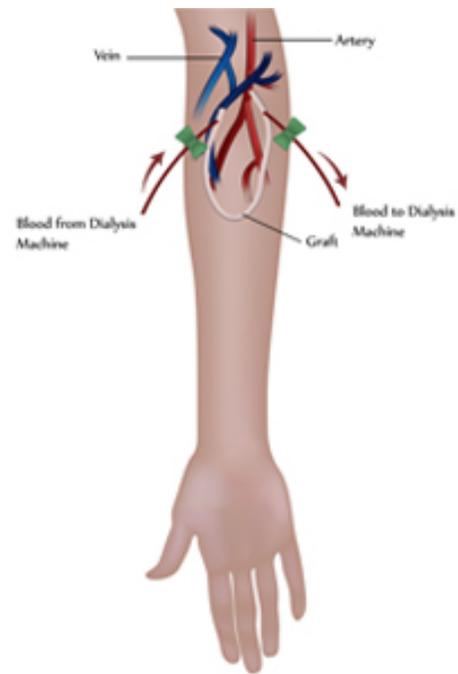


WHAT IS HEMODIALYSIS?

While healthy kidneys have several functions in the body, the most well-known job is to produce urine. When kidney function goes below 10% to 15% kidneys are no longer able to filter the blood and make urine. This causes toxins to build up in the body along with excess fluid. One type of renal replacement therapy — meaning a treatment that replaces kidney function — is hemodialysis. Hemodialysis is a therapy that filters waste, removes extra fluid and balances electrolytes (sodium, potassium, bicarbonate, chloride, calcium, magnesium and phosphate).

HOW IS HEMODIALYSIS DONE?

In hemodialysis, blood is removed from the body and filtered through a man-made membrane called a dialyzer, or artificial kidney, and then the filtered blood is returned to the body. To perform hemodialysis there needs to be an access created to get the blood from the body to the dialyzer and back to the body. There are three access types for hemodialysis: arteriovenous (AV) fistula, AV graft and central venous catheter. The AV fistula is the vascular access most recommended by the dialysis community; however, you and your doctor will decide which access is best for you.



VASCULAR ACCESS

Before beginning hemodialysis treatment, a person needs an access to their bloodstream, called a vascular access. The access allows the patient's blood to travel to and from the dialysis machine so that toxins, waste and extra fluid can be removed from the body.

There are two types of vascular access:

- 1.Arteriovenous (AV) fistula
- 2.Arteriovenous (AV) graft

The fistula and graft are permanent accesses placed under the skin. When patients find out they are in the advanced stages of chronic kidney disease and will need dialysis, their nephrologist will advise them to get a fistula or graft. Having the access in place well before beginning dialysis will give this lifeline time to "mature," so it can be ready to use.

When patients suddenly discover they have kidney failure, a catheter may be placed to allow for immediate dialysis treatment. The catheter will be used until a fistula or graft has time to mature.

AV FISTULA - An AV fistula is created by directly connecting a person's artery and vein, usually in the arm. This procedure may be performed as an outpatient operation using a local anesthetic. As blood flows to the vein from the newly connected artery, the vein grows bigger and stronger. The patient is taught to do exercises, such as squeezing a rubber ball, to help the fistula mature. This takes six weeks to four months. Once the fistula has matured, it can provide good blood flow for many years of hemodialysis. The benefits of a fistula compared to other access types include:

- Lower risk of infections
- Lower risk of forming clots
- Performs better
- Allows for greater blood flow
- Lasts longer, sometimes even for decades if well-cared for

Some of the drawbacks include:

- The appearance of bulging veins at the access site
- Taking several months for a new one to mature
- Not maturing (in some cases)

Not everyone may be able to have a fistula due to various conditions; discuss your access options with your doctor.

AV GRAFT - The AV graft is similar to a fistula, in that it connects the artery and vein under the skin, except that a man made tubing connects the artery and vein. It's about one-half inch in diameter and is made from a type of Teflon or Gore-Tex material. They're usually placed in the arm, but can also be placed in the thigh.

Grafts don't require as much time to mature as fistulas, because they don't need time to enlarge before using. Usually a graft can be used about two to six weeks after placement.

CARING FOR YOUR ACCESS

Keep your access area clean and free of any trauma. Look for signs of infection, including pain, tenderness, swelling or redness around your access area. Also, be aware of any fever and flu-like symptoms. If you do get an infection and catch it early, it can usually be treated with antibiotics.

Protect your access from any restriction or trauma by:

- Don't wear tight clothes, jewelry or anything that puts pressure on your access
- Don't sleep on top of or rest on your access area
- Don't carry bags or heavy items across your access area
- Request that blood be drawn from your non-access arm
- Request that blood pressure be taken from your non-access arm

Reference: Davita.com