



Your Vascular Access

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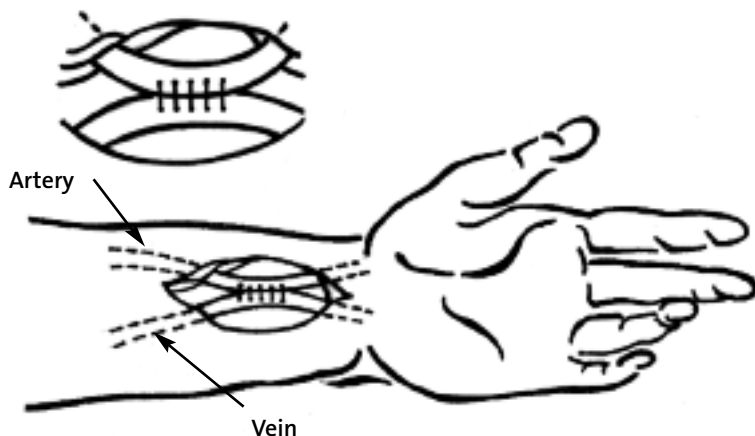
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What is vascular access?

To receive hemodialysis you need a reliable way to access your blood over and over again. The term *vascular access* or just access is how your health care team describes your fistula (sometimes called an AVF or arterio-venous fistula), graft or dialysis catheter.

Understanding your vascular access and knowing how to look after your access is important to the long-term success of your hemodialysis treatments.

What is a fistula?



A *fistula* is a type of vascular access that uses your own arteries and veins. A surgeon makes small incisions and then works underneath the skin to join an artery to a vein. The blood flow in your arteries is strong and joining the artery and vein together causes a turbulent blood flow. You can picture it like two rivers merging together. This new vein/artery is called a fistula. Because of the strong turbulent blood flow the fistula gets larger. The two needles required for dialysis are inserted into this enlarged area — your fistula.



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What can I expect from my surgery?

In many situations the surgery required for creating a fistula is done as a day procedure. This means you don't spend a night in the hospital.

Usually the surgeon will create the fistula in the forearm of your non-dominant arm. This is the arm that you use the least, so if you are right-handed the fistula is usually created in your left arm. However everyone is different, so there are times when the location of a fistula will be in a different place than described here.

Why is a fistula the best access?

A fistula is the preferred vascular access because fistulas are made of your own tissue so they have lower rates of infection and they don't clot as easily as other types of vascular accesses. Research shows they also last longer than other types of vascular accesses.

How long does it take before I can use my fistula?

It takes at least 6–8 weeks for a fistula to heal and grow in size before it can be used for dialysis. You may be asked to do some simple exercises like squeezing a ball to help your fistula mature as quickly as possible.

Taking care of a new fistula

1. **Look, listen and feel.** Check your fistula every morning and at bedtime:

- **Look** for bruising, discoloration or other skin problems.
Look for redness, swelling, pain, drainage, or if you have a fever.
These can be signs of **infection**.
- **Listen** to your fistula with your ear to make sure you can hear a swishing sound.
- **Feel** for a bruit (a buzzing sensation). If you don't feel this, or if you have pain or difficulty moving your fingers or arm, call your training nurse or home hemodialysis clinic right away.

2. Avoid pressure on your fistula. Unwanted pressure can lead to clotting of your fistula. Some simple things to remember include:

- Avoid sleeping on top of your access arm
- Avoid wearing tight bands (like watch straps), clothing or jewelry over your fistula

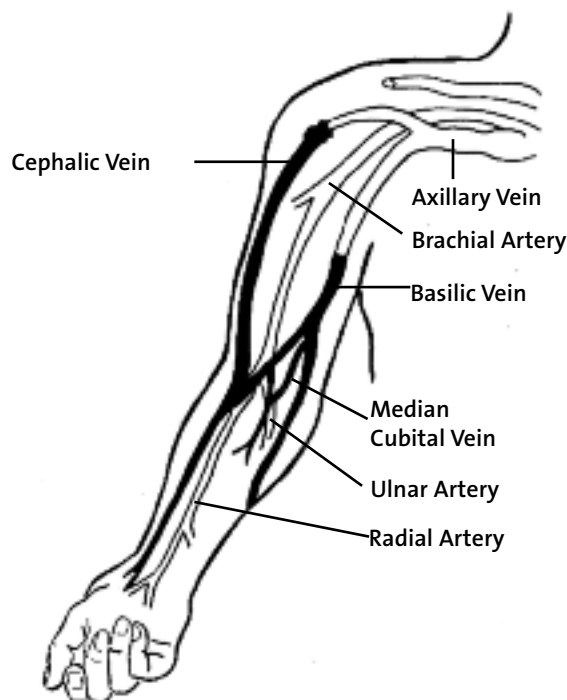


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- Carry your briefcase, purse or shopping bags with your hands and don't use your fistula forearm
 - Protect your fistula from being hit. Be careful with any contact sports or lifting weights that could affect the blood flow in the fistula.
3. Never allow anyone to insert intravenous needles (IVs) or have any blood tests taken from your fistula arm.
 4. Follow the routine taught to you during training. Wash your fistula with soap and warm water every time you get ready for hemodialysis.
 5. Good overall hygiene is important, so shower or take baths frequently. Wash your access arm every day.
 6. To prevent infection, avoid scratching or picking at your fistula, even if it becomes itchy or small scabs form over the sutures.
 7. Ensure sutures and/or staples are kept intact for 10–14 days. After this time a nurse will remove them for you.

If you notice any unusual changes to your fistula contact your nurse, nephrologist, vascular surgeon or your vascular access office immediately.

What is a graft?



A *graft* is a type of vascular access in which a piece of flexible tubing is placed under your skin and stitched to your artery to connect it to a vein. The two needles used for dialysis are inserted through your skin and into this tubing.

This type of surgery can be done as a day procedure, which means you don't have to spend a night in hospital.

The decision whether you should have a graft instead of a fistula is made by your surgeon and your nephrologist.

Grafts are usually placed in the forearm of your non-dominant arm. This is the arm that you use the least, so if you are right-handed the graft is usually in your left arm. Because every patient is different, there are



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times when a graft will be located in different place than described here. Grafts can either be straight or looped. This decision is made by your surgeon.

Unlike a fistula, grafts do not need extra time to mature and can be used very quickly after surgery — often within two or three weeks.

Taking care of a new graft

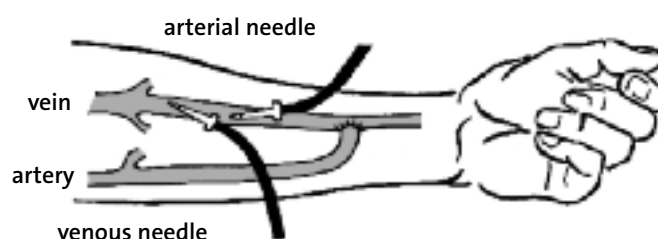
1. **Look, listen and feel.** Check your graft every morning and at bedtime:

- **Look** for bruising, discoloration or other skin problems. Watch for redness, swelling, pain, drainage, or if you have a fever. These can be signs of **infection**.
- **Listen** to your graft with your ear to make sure you can hear a swishing sound.
- **Feel** for a bruit (a buzzing sensation). If you don't feel this, or if you have pain or difficulty moving your fingers or arm, call your training nurse or home hemodialysis clinic right away.

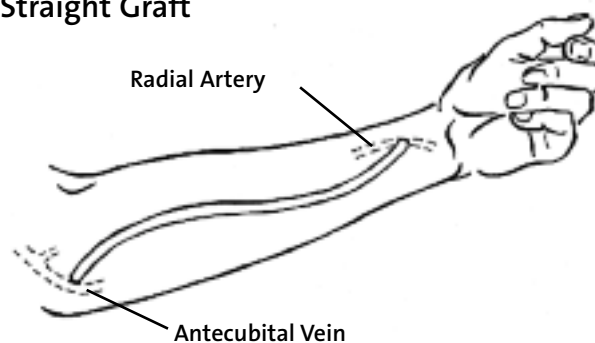
2. **Avoid pressure on your graft.** Unwanted pressure can lead to clotting. Simple things to keep in mind include:

- Avoid sleeping on top of your access arm
- Stay clear of wearing tight bands (like watch straps), clothing or jewelry over the graft
- Carry your briefcase, purse or shopping bags with your hands and don't use your graft forearm
- Protect your graft from blunt blows and hits. Be careful with any contact sports or lifting weights that would affect the blood flow in the graft

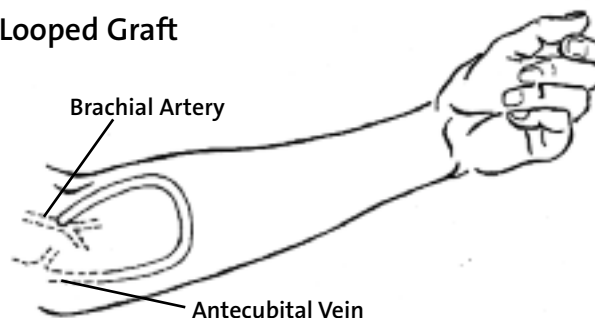
3. **Never allow anyone to insert intravenous needles (IVs) or have any blood tests taken from your graft arm.**



Straight Graft



Looped Graft



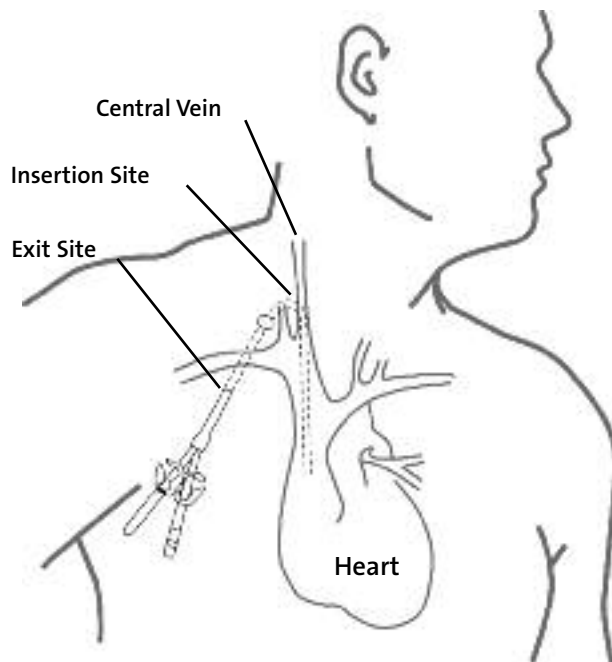


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4. Follow the routine taught to you during training for washing your graft arm with soap and warm water every time you get ready for hemodialysis.
5. Good overall hygiene is important, so shower or bath frequently. Wash your access arm everyday.
6. To prevent infection, avoid scratching or picking at your graft, even if it becomes itchy or small scabs form over the sutures.
7. Ensure sutures and/or staples are kept intact for 10–14 days. After this time a nurse will remove them for you.

What is a hemodialysis catheter?



Hemodialysis Catheter

A *hemodialysis catheter* is a soft hollow tube that can be placed within a large vein inside your neck or in your chest. To insert the catheter, a doctor uses a local anesthetic and makes a small incision, or opening, in your skin over the vein. The catheter is then threaded into the vein, and the doctor attaches the catheter to your skin with stitches, to hold it in place. The catheter then goes underneath the skin to an exit point on your chest. The two short arms of the catheter sit outside the chest. The outside catheter arms connect to the dialysis tubing — red for the arterial blood line that takes the blood to the dialyzer, and blue for the venous blood line which returns cleaned blood.

There are two types of catheters: a central venous catheter or CVC (sometimes called a permanent, cuffed catheter or perm cath) and a non-cuffed central line catheter or JVC.

Permanent catheters have two small cuffs under the skin that keep the catheter in place. After about 6–8 weeks your skin will grow around the catheter at the exit site and the sutures can be removed by a nurse.

Temporary catheters do not have these cuffs so sutures need to stay in place at all times.



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Catheters are generally used only for short periods. They are used when the preferred vascular access — a fistula or graft — can't be used, and in emergency situations for patients who need dialysis right away.

There are a few situations when catheters will be used for longer periods of time. This might occur when:

- A patient is likely to receive a kidney transplant within a few months
- All options for either a fistula or graft have been exhausted

In these situations a central venous catheter or CVC will be used.

Taking care of a new hemodialysis catheter (cvc)

1. Keep your catheter dressing dry. For bathing, take a sponge bath rather than a shower. If your dressing gets wet, take the wet covering off and apply a new dressing. Do not soak in a hot tub or go swimming.
2. Check your catheter exit site for any signs of infection. If you notice any redness, pain, swelling or drainage **OR** if you have a fever or chills, go straight to your nearest hospital emergency department.
3. Do not remove the sutures that keep the catheter in place. If you notice that the sutures are wearing thin, contact your nurse, tape the catheter in place and go to the nearest hospital. If your catheter falls out, apply firm pressure to it with clean gauze, call 911 and go to your nearest hospital emergency department.
4. Your catheter should never be used for anything other than hemodialysis. Do not allow any other health professional than a trained dialysis nurse to access this line.
5. Avoid tugging on the outside lumens of the catheter as this can cause skin irritation that may lead to infection. The dressing will help to reduce accidental tugging on the catheter.
6. When you no longer need your hemodialysis catheter, it will be removed by a doctor. A dressing is then applied and should be left on for 48 hours so the opening in your skin will heal.