Preparing for Vascular Access Surgery

Information for patients and families

Read this booklet to learn:

- why you need vascular access for hemodialysis
- what an AV graft and an AV fistula is
- what to expect with this procedure
- who to call if you have any questions

Why do I need vascular access surgery?

If you need hemodialysis, you need a vein that is easy to find and use. Vascular access surgery makes an access site for the hemodialysis. This is called an arteriovenous (AV) access.

An AV access connects your artery directly to your vein. If this is not possible, a soft plastic tube will be used to connect your artery and vein.

How does my AV access work during hemodialysis?

Before hemodialysis (or dialysis), your nurse will put 2 needles into your AV access. One needle takes the blood from your body to the artificial kidney (dialyzer). This cleans your blood. The second needle returns the clean blood back to you.
Only a small amount of blood (about 1 cup) is removed from your body at one time. At the end, your nurse removes both needles and puts bandages where the needles were put in. You can take the bandages off the next day.

Your AV access will usually be in your forearm or upper arm. There are 2 types of AV access your surgeon could give you. One is an AV graft. The other is an AV fistula.

**AV Graft**

For an AV graft, your surgeon puts a small, man-made tube in your arm. It acts like a vein. Your surgeon connects one end of the tube to your artery. The other end is connected to your vein.

Your surgeon might also put an AV graft in as a straight tube instead of a “U” shaped loop. Your AV graft is ready for dialysis about 2 to 4 weeks after your surgery.

If you need dialysis sooner, your surgeon may be able to put in a special AV graft. It can be used 2 days after your surgery.
Av Fistula

For an AV fistula, your surgeon sews an artery and a vein together.

Your AV fistula is ready for dialysis about 1 to 4 months after surgery. It takes time for your fistula to become strong enough for dialysis.

For both AV graft and AV fistula:

We use your non-dominant arm whenever possible. For example, if you are right handed, we will put your access in your left arm. This leaves the arm you use most often free during dialysis.

How will I know which one I need?

Your surgeon will decide which one is best for you. They may do a “vein mapping.” This is an ultrasound of your arm veins.

If your veins and arteries are a good size, they will do an AV fistula. If they are too small, they will do an AV graft.
**What can I expect?**

Here are the steps you will go through:

1. **Your clinic appointment**

   At your clinic appointment, you will meet with your surgeon. You will:
   - find out what type of vascular access is best for you
   - talk about the procedure
   - ask any questions you might have
   - be asked to sign a consent form. The consent form gives us your permission to do the surgery at a later date.

   You will also meet with your Vascular Access Co-ordinator. Your co-ordinator will talk to you about:
   - what to expect before and after surgery
   - some possible complications (difficulties) during or after surgery
   - caring for your graft or fistula
   - arrange a follow up appointment for you

2. **Your Pre-Admission Visit**

   This appointment will be scheduled before your surgery date. At this appointment, you will:
   - have blood tests
   - have an electrocardiogram (ECG) to measure the electrical activity in your heart
   - talk to an endocrinologist (a specialist) if you have diabetes
   - talk to an anesthetist
Meeting with your anesthetist

Your anesthetist is a person specially trained to give you medicine to keep you comfortable during surgery. During your meeting, your anesthetist will ask you questions about your health. They will also talk to you about the anesthetic (medicine) that is best for you during your surgery.

During surgery, you could have:

- a general anesthetic (will make you sleep during surgery)
- or a local anesthetic (will freeze the surgery area only) and a sedative (a medicine to help you relax and stay comfortable)
- a regional anesthetic. This is also called a nerve block. A nerve block will make the part of your body that is operated on numb. In this case, your arm will be numb during the surgery and about 1 day after.

Please tell the anesthetist if you are taking Coumadin®

This medicine is a blood thinner. The anesthetist will tell you to stop taking it 4 days before surgery. This will prevent bleeding after surgery.

3. The night before your surgery

Please do not eat or drink anything after midnight, or your surgery will be cancelled.

You may take your pills in the morning with sips of water (except blood thinning medicine and insulin if you are diabetic).
4. **Day of the procedure**

Go to the Surgical Admission Unit (SAU) on the 2nd Floor North, Norman Urquhart Building, Room 310 at Toronto General Hospital. You can take the Eaton or Munk elevators to get there.

Please come to the SAU at this time: __________

Your operation will be done at this time: __________

If you wish, you may bring up to 2 family members with you to this area. They can stay with you until you go into surgery.

Just before the surgery, the nurses will:
- ask you to change into a hospital gown
- check your blood pressure
- take some blood to check your potassium count
- ask you a number of questions from their surgical checklist

**When can I go home?**

You will go home on the same day as your surgery. Please have someone pick you up and stay with you for the night. If this is not possible please call the Vascular Access Co-ordinator before your surgery date.

If you don’t arrange for someone to pick you up and take you home, your surgery will be cancelled.

Your family or friend may pick you up from the 6th floor Consolidated Short Stay Unit–6A, Peter Munk Building.

**Who can I call if I have questions?**

If you have any questions, you can call your Vascular Access Co-ordinator at 416 340 4800, extension 3518.