

WHAT IS DIALYSIS?

Dialysis or a kidney transplant is needed when your kidneys have stopped working. A sudden drop in kidney function is called Acute Kidney Failure. It is often short lived and seldom leads to lasting kidney damage. More often kidney function worsens over a number of years until it fails altogether.

Dialysis removes waste from your blood when the kidneys fail. There are two forms of dialysis - haemodialysis and peritoneal dialysis. During haemodialysis, a machine acting as an artificial kidney cleans your blood. Peritoneal dialysis allows the blood to be cleaned inside your body. See Peritoneal Dialysis and Haemodialysis fact sheets for more information.

WHAT IS A VASCULAR ACCESS POINT FOR HAEMODIALYSIS?

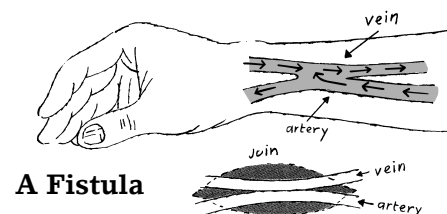
Haemodialysis means 'cleaning the blood'. For haemodialysis to be carried out effectively, there needs to be access to a large blood vessel with a fast blood flow. Unfortunately there are no large blood vessels located where they can be easily used so a 'vascular access' point is made during surgery. 'Vascular' refers to your blood vessels, e.g. arteries and veins.

There are three types of access:

- An Arterio - Venous fistula, which is permanent
- A prosthetic or artificial graft, which is also permanent
- A special catheter, which can be long-term but is usually temporary until a fistula or graft is ready for use

WHAT IS A FISTULA?

An Arterio-Venous Fistula (AVF) is a vascular access point for haemodialysis made from your blood vessels. It is called an Arterio-Venous Fistula as an artery and vein are joined to create it. It is usually located in your upper or lower arm but sometimes the upper leg is used.



A fistula is created during a small operation under anaesthetic by a surgeon. Arteries carry blood at high speed and have strong walls. Veins have lower blood flow and weak walls that may collapse if used repeatedly for dialysis. After a fistula is made, the blood from your artery flows into your vein. Over time this makes your vein larger and stronger so it can be used for dialysis.

A fistula is created a number of weeks or months before dialysis is needed. This gives the blood vessel time to grow and strengthen. The cut to make a

fistula is about 4 - 8 cm. Your arm can be used normally after the operation although a few general rules need to be followed - see care tips below.

A fistula usually has fewer complications than the other types of access. Needle punctures heal well so infection is less common. There are fewer problems with blood clotting and a fistula often has longer 'life', lasting for many years if well cared for.

There is a 'buzzing' feel as the blood moves from the artery into the vein. This feels like a cat purring and is called the 'thrill'. The buzzing means the fistula is working well. If the buzzing stops or slows, contact your renal unit or doctor immediately as the fistula may be blocked.

WHAT IS A PROSTHETIC (ARTIFICIAL) GRAFT?

Another type of vascular access for haemodialysis is an artificial graft. It is used if your own blood vessels cannot be used to make a fistula. During surgery your artery and vein are joined together by soft tubing, which can be punctured repeatedly. The graft is usually put in your arm but can also be in your thigh. Grafts are more difficult to make but are a good solution if you have small, weak or damaged veins.

HOW DO YOU CARE FOR A FISTULA OR GRAFT?

Your fistula/graft is routinely checked by machine readings and blood tests usually done while you are receiving haemodialysis. Sometimes other tests, such as a Doppler or a special X-ray called a Fistulogram, are also needed to check that your fistula or graft is working well.

Your doctor and dialysis nurse will explain how to look after your fistula/graft. It is very important information as your access point acts as a lifeline for treatment for kidney failure. You will be taught how to look after your fistula/graft during dialysis as well as when you are not dialysing.

Here are some tips about everyday care of your fistula or graft and how to prevent problems:

- Don't allow anyone to take blood pressure readings or blood samples from your fistula/graft arm or put in an intravenous drip (IV) except the nurses and doctors in your dialysis unit.
- Check the blood flow over your fistula/graft at least twice a day. Some people like to check their fistula/graft in the morning when rising and /or at nighttime on settling. When you put your finger lightly over your fistula you should be able to feel a 'buzz'. Your health care team will teach you what to feel for. If you have an artificial graft, you may not be able to feel a 'buzz' so you will learn another way to check that it is working by listening to your graft to hear a 'bruit' – a whooshing noise.
- Check for redness, swelling or a warmer feeling than normal as this may indicate infection.
- Avoid wearing tight clothing around your fistula/graft arm i.e. elasticised bands/cuffs.

- Get into the habit of not wearing a watch, jewellery or hospital name band on your fistula /graft arm.
- Don't carry anything heavy over your fistula or graft arm i.e. heavy plastic shopping bags or do anything that would create a heavy pressure.
- Protect your fistula or graft from heavy bumps and cover your fistula /graft arm if you are working around something sharp.
- Try not to sleep on your arm with the fistula/graft.
- Keep the area around your fistula/graft clean and dry.
- Take care not to scratch the area around your fistula /graft if you get a rash. Always tell your health care team and if it is caused by surgical tape, you may be able to use a different type.
- Carry an extra dressing with you after a haemodialysis treatment in case an old needle sites starts to bleed. Your dialysis nurse will teach you what to do if this was to happen.

It is also important to check the circulation of your fistula/graft each day by noting its colour, temperature and feel. If there is a problem with your fistula/graft, you may notice a change in the temperature or colour of your fingers. It is important to report any changes to your health care team.

Being informed and taking an active part in the care of your vascular access can reduce the risk of complications. It is very important to discuss these suggestions with your health care team.

WHAT IS A VASCULAR ACCESS CATHETER?

A vascular access or a central venous catheter is a special tube, which can be used for haemodialysis. It is important to remember that catheters are usually a temporary access until a fistula or graft is ready to be used. A catheter is usually put into a large vein in your neck or placed near your collarbone. It is also occasionally located in a large vein in the groin (top of your leg).

A catheter is a small piece of tubing with two 'lumens' or separate channels. One channel takes blood to the dialysis machine and the other returns cleaned blood. Small operations are required to insert the special tube then remove it when it is no longer needed. Caps, which securely seal off the catheter, are unscrewed to connect for a dialysis treatment. You will learn about your catheter from the dialysis nurses, who will clean and dress it after dialysis.

WHAT ARE SOME COMMON ACCESS PROBLEMS?

It is important to immediately report any changes to your access to your health professional team. When the blood flow in an access is not moving properly then there is a chance the access may stop working and require urgent surgery. Even if you are very careful, sometimes problems such as a blood clots or an infection can occur. Always seek advice from your doctor or dialysis staff, as the problem will not go away by itself.

- Blood Clots

A blood clot can cause serious problems if it forms inside a vascular access as it reduces the blood flow. Blood clots can sometimes be dissolved using medication but surgery may be required.

Common causes of blood clots include:

- Low blood pressure
- Injury to the access
- Technical problem when the access is constructed
- Narrowing of the access after extended usage or of the vein above the access point
- Dehydration: Talk to your health care team about your fluid intake, as it is also important not to become dehydrated or have fluid overload.

- Infections

An infection in your access is another cause for concern. Antibiotics are usually used to treat infection. If this treatment is not successful, surgical removal of part or all of the access may be needed.

Common signs of infection include:

- Fever
- Unusual pain in your access site, eg if it feels sore, hot or swollen
- Red skin around your access
- Pus or discoloured fluid weeping from old needle sites /holes or surgical cuts

- Aneurysms

An aneurysm occurs when a weak spot in your access develops causing a bulge in the blood vessel wall. Large aneurysms are dangerous because if they rupture, serious bleeding can occur. Aneurysms may require urgent surgery to repair.

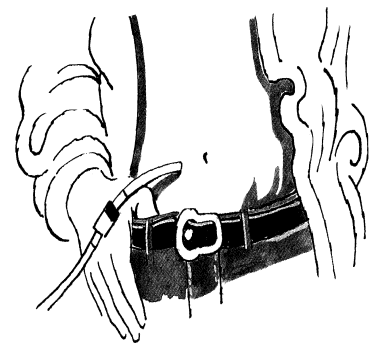
It is important to be a non-smoker because smoking can be particularly harmful if you have a fistula, graft or catheter. Smoking:

- reduces your body's healing powers
- increases the risk of hardening or narrowing of your arteries
- increases the risk of blood clots forming and blocking your access

WHAT IS A PERITONEAL DIALYSIS (PD) CATHETER?

A PD catheter is a soft plastic tube about 0.5 cm in diameter inserted into your body during surgery. It stays in your body for as long as PD is needed. Some of the catheter is on the outside of your abdomen (belly). This allows dialysis fluid, a special fluid that helps to clean your blood, to be moved in and out of your body painlessly. The catheter may seem strange at first but most people become used to them quickly.

The tube is usually put below and to one side of your navel. This is called the 'exit site'. You and your health care team will decide on the best location. The tubing can be worn comfortably and easily hidden under clothing.



Exit site

HOW DO YOU LOOK AFTER YOUR PD CATHETER?

Following your surgery, a dialysis nurse does any dressing changes to your catheter. Once the exit site has healed, you will learn how to look after it and care of the catheter as part of your daily routine. This is important information as having a catheter increases the risk of infection. You will get lots of handy hints to guide you, such as:

- Making sure your hands and fingernails are clean by thoroughly washing them before you perform exit-site care.
- Examining your catheter exit site each day to check for redness and swelling. Tell your health care team immediately if you notice any changes or the exit site feels sore.
- Checking your catheter tubing for cracks or holes.
- Fastening your catheter to your skin using tape so that it does not move around.
- Advice from your health care team about going swimming or having a bath

A fistula is often created at the same time as your PD catheter is inserted. This allows the fistula time to mature and provides another option for dialysis.

**For more information about kidney health or this topic, please contact
Kidney Health Australia:
Kidney Information Line (freecall) on 1800 682 531 or visit website
www.kidney.org.au**

This is intended as a general introduction to this topic and is not meant to substitute for your doctor's or Health Professional's advice. All care is taken to ensure that the information is relevant to the reader and applicable to each state in Australia. It should be noted that Kidney Health Australia recognises that each person's experience is individual and that variations do occur in treatment and management due to personal circumstances, the health professional and the state one lives in. Should you require further information always consult your doctor or health professional.

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