Kidney Health® Australia

Access for dialysis

Most people are born with two kidneys, located near the middle of your back on either side of your backbone. Your kidneys are bean shaped and are about the size of your fists. Your kidneys are the unsung heroes of your body.

They are responsible for a number of important roles such as:

- **removing excess fluid to make urine (wee)**
- **controlling your blood pressure**
- **filtering waste products from your blood.**

If your kidneys stop working, you will need treatment to replace their function. Options include dialysis, preparing for a kidney transplant, or choosing comprehensive conservative care.

Dialysis is the most common treatment for kidney failure. Dialysis will clean your blood when your kidneys are no longer working.

There are two types of dialysis - haemodialysis and peritoneal dialysis.

→ **Peritoneal dialysis (PD)** allows your blood to be cleaned inside your body.

→ **Haemodialysis (HD)** is a treatment that uses a machine to filter your blood.

There are two types of dialysis - **haemodialysis** and **peritoneal dialysis**.

Access for peritoneal dialysis

What does 'access for dialysis' mean?

Both haemodialysis and peritoneal dialysis need an entry point, called 'access', to clean the excess water and waste products from your blood. The type of access is different for the two types of dialysis.

Access for peritoneal dialysis (PD)

Peritoneal dialysis uses your natural peritoneal membrane to filter wastes and extra fluid from your blood. The peritoneal membrane lines your abdominal (peritoneal) cavity and covers organs like your spleen, stomach, and intestines.

Your catheter stays in place for as long as you need PD.

PD works by allowing **waste and excess fluid to pass from your bloodstream**, through the peritoneal membrane, and into special fluid that is used to fill the space. This fluid is called dialysis fluid or dialysate.

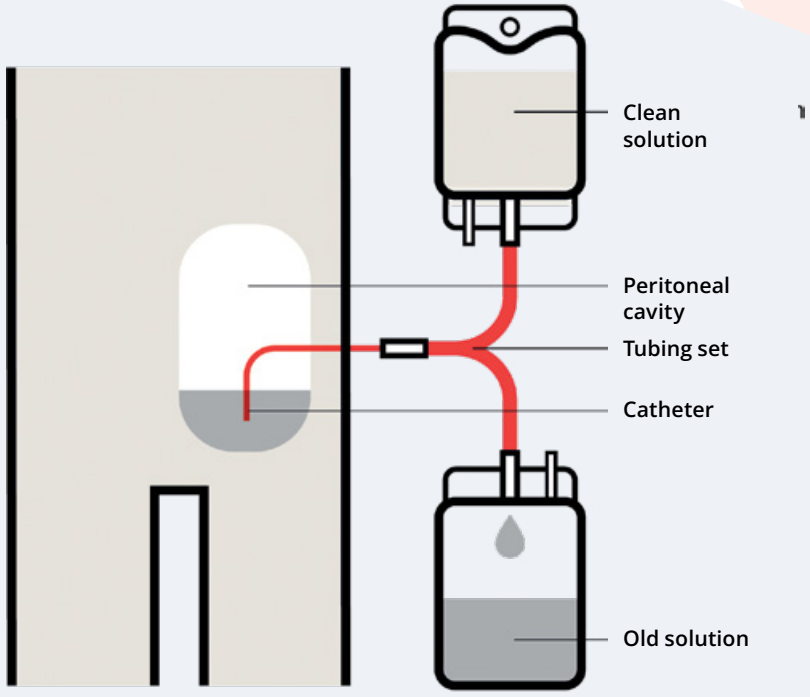
For PD to work, you'll need access to your peritoneal cavity through a soft tube called a peritoneal catheter. This is a small tube that's placed in your abdomen. This catheter, which is about 0.5 cm wide and 30 cm long, provides access to your peritoneal cavity so that dialysis solution (dialysate) can flow in and out of your body.

A surgeon inserts through a small cut on your tummy. This surgery requires a short hospital admission. The catheter remains in your body for as long as PD is needed. Some of the tube stays outside your abdomen, near one side of your belly button. Where the tube exits your skin is called the "exit site."

You and your health care team will decide on the best location for your exit site. It is important to keep this site clean; your health care team will give you more information on caring for your peritoneal catheter.

The catheter provides a way for dialysis solution (dialysate) to enter your peritoneal cavity. PD works when your body's wastes pass from your bloodstream, across the peritoneal membrane, and into the dialysate.

The extra wastes and fluid are filtered out through your drainage line.



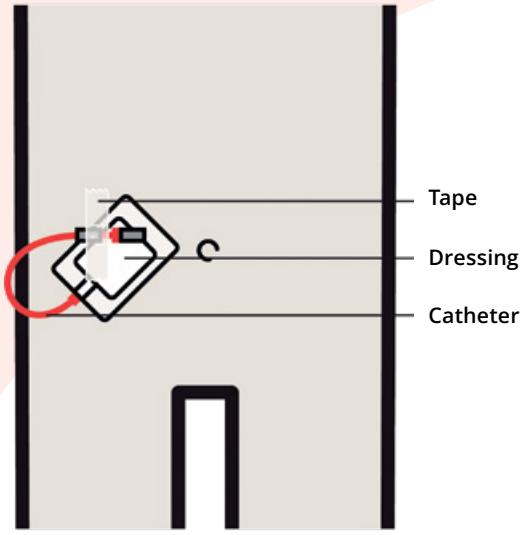
Placing the catheter for peritoneal dialysis

The PD catheter is inserted into your abdomen during a procedure, which is typically done in the hospital. The doctor makes a small cut on your tummy and inserts the tube into your peritoneal cavity.

The procedure is usually quick, as many people can go home the same day. After your surgery, you'll need to keep the exit site clean to prevent infection. Your body usually heals in 3-4 weeks, and then you can start using the catheter for PD.

If you need urgent PD, your kidney team and surgeon will decide if you can use your PD catheter early.

The catheter stays in your body for as long as PD is needed. The PD catheter may seem strange at first, but most people become used to it quickly. The tubing can be hidden by your clothing.



How do I look after my peritoneal dialysis catheter?

Once the catheter exit site has healed, you will learn how to care for the catheter as part of your daily routine. This is important because having a catheter increases your risk of infection.

Keep your catheter safe:

- Always wash your hands before touching your exit site.
- Check your exit site every day to check for redness and swelling. Tell your health care team immediately if you notice any changes or the exit site feels sore
- Check your catheter tubing for cracks or holes.
- Attach your catheter to your skin using tape so that it does not move around.
- Keep your access site covered and dry.
- Avoid tight fitting clothing or belts that wrap around the site and cause pressure.

Alert your doctor right away if you notice signs of infection from your catheter site. These include:

- smelly fluid or pus from the exit site
- redness and swelling around the catheter
- fever or chills
- severe pain or tenderness of the abdomen.

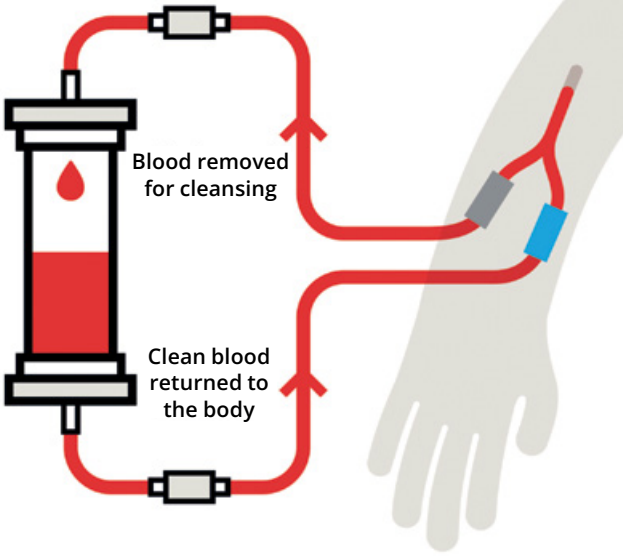
You'll need to look after your catheter when **playing sport or exercising** to make sure your peritoneal catheter is always protected. Be sure to ask your healthcare team before swimming and avoid contact with poor quality water.

Access for haemodialysis

Haemodialysis requires access that can reach your blood for dialysis. This is commonly called a vascular access.

During haemodialysis, your vascular access allows blood to flow from the access point through tubes to a dialysis machine. The dialysis filter or "dialyser" cleans the blood and then returns clean blood back to your body through the vascular access.

There are three types of vascular access for haemodialysis: a **fistula**, a **graft**, and a **haemodialysis catheter**.



Types of access for haemodialysis

Access with a fistula

A fistula is the name for joining an artery to a vein. An artery is a blood vessel that brings blood from your lungs and heart to the rest of your body.

The vein returns blood back to the heart. With a fistula, blood flows quickly from the artery into the joined vein, making the vein wider. This provides the good blood flow in your arm, which is needed for dialysis to work.

The fistula is usually created by a small surgery at the wrist area of your non-dominant forearm (the arm you don't write with). You'll have to wait a few months for the fistula to develop before it can be used for dialysis. Your health care team will check the fistula with an ultrasound to make sure its ready for use.

The fistula is where you put in the needles for the dialysis. Two needles are required, one to remove the blood and the other to return it. A fistula may take a few months to fully develop so that it can be used for dialysis.

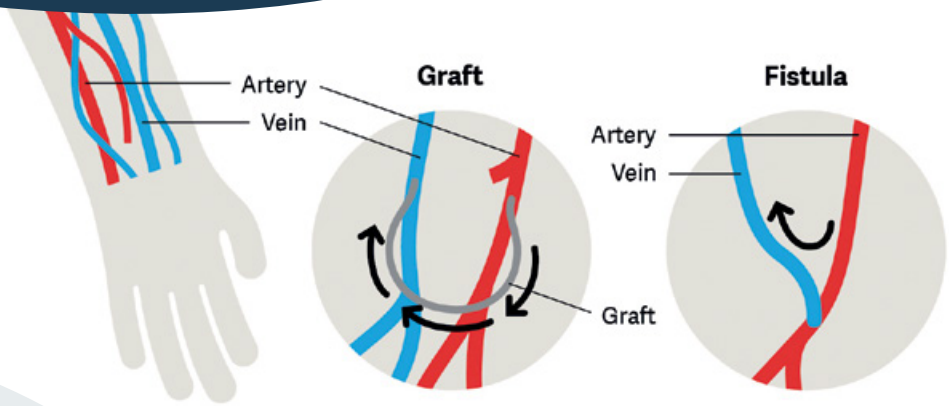
Checking your fistula

A 'thrill' or 'buzz' is like a vibration caused by blood flowing through your fistula and can be felt by placing your fingers just above your incision line. The 'thrill' indicates the fistula is working.

Check that you can feel a **'thrill'** over your fistula site every day. Check your fistula arm for any changes in colour, temperature, tingling, numbness, pain or swelling. If the buzzing stops or slows, or you have changes in your fistula, contact your healthcare team immediately as your fistula may be blocked.

Access with a graft

If your veins are too small or delicate for a fistula to work, then vascular access with a graft may be needed. Your doctor will perform an operation attaching a soft tube from one end of an artery to the other end of a vein. Once the graft is healed, your nurse will use a dialysis needle to gain access to the graft.



Surgery for a graft or fistula

To create a fistula or graft, the doctor will need to perform a small operation.

Usually, this procedure is done in one day. Some people may need to stay overnight.

After surgery, the fistula or graft will be covered with a protective dressing. It will be **important to keep the site clean**. Your health care team will provide you with specific instructions about caring for your access after your surgery.

The first six weeks are the most critical to forming a healthy, strong fistula or graft. If you need dialysis before your fistula is ready, your doctor may insert a temporary dialysis catheter.

Exercising your fistula arm before and after surgery may help **improve muscle tone** and make your vein larger and easier to needle.

Your doctor or nurse will tell you what sort of exercises to do and when to start them after your operation. One common exercise is squeezing a squash or stress ball.

Caring for your graft or fistula

You'll need to take good care of your vascular access to help prevent infection and ensure it continues to work properly.

- **Wash your hands** often and avoid touching the access area after surgery.
- Do not take your **blood pressure** from the vascular access arm.
- Avoid wearing **tight clothing** or applying pressure to the site.
- Do not wear a **watch** on the same arm as your access.
- Do not rest on your arm or **lift heavy items** like grocery bags on your access site.
- Do not allow **blood tests, armbands or IV drips** (cannulas) to be placed into the arm with your fistula.

Be sure to check your vascular access every day and let your doctor or nurse know of any changes, including:

- loss of the 'thrill' if you have a fistula
- bulging of your fistula or graft
- unusually hot or cold skin by your access site
- pain or swelling around the site
- bleeding that you cannot stop.

The first six weeks are the most critical to forming a healthy, strong fistula or graft.

After dialysis be prepared with an emergency kit of extra gauze pads, pressure pads, and tape. Make sure to have the phone numbers of your dialysis nurse, kidney doctor and emergency services (000) available.

- It is important to **immediately report any changes** in your access to your healthcare team.
- Even if you are very careful, sometimes **problems such as blood clots or infections** can occur.
- Always **seek advice** from your doctor or dialysis staff if you have any concerns about your fistula.

Access with a haemodialysis catheter

Sometimes it may not be possible to create a fistula or a graft, or dialysis may need to be started urgently. In these cases, your blood vessels can be accessed through a haemodialysis catheter.

A **haemodialysis catheter** is a flexible tube used for dialysis treatment. Your surgeon places the catheter in the blood vessel in your neck or upper chest. The catheter is threaded to the right side of the heart.

Haemodialysis catheters have two tubes inside - one half removes the blood from the body and flows to the dialysis machine; the other half returns the cleaned blood to the body.

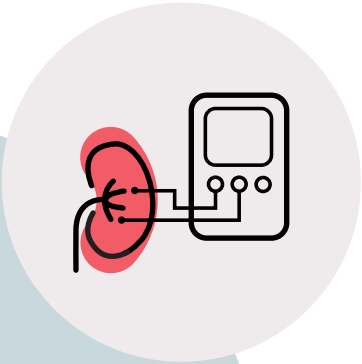
To insert a haemodialysis catheter, a small tunnel is made under the skin so the tube can be threaded through and positioned correctly.

The catheter has a cuff under the skin to help keep the catheter in place, prevent infection, and allow the catheter to remain in for an extended period of time.

Unlike a fistula or graft, a haemodialysis catheter can be used straight away. Your haemodialysis catheter may be temporary if your fistula or graft is healing or if there are problems accessing your fistula or graft.

Long-term use of a haemodialysis catheter is only used in special cases, like when your fistula or graft continues to fail or if you have problems with stiff blood vessels.

Haemodialysis catheters can work well, but they do have an increased risk of infection if not managed carefully. These catheters also have a risk of clotting.



Which type of access is best for you?

You and your doctor should discuss which type of haemodialysis access is best for you.

Consider these factors:

- **How long will you need dialysis for?** A haemodialysis catheter is normally used for short term haemodialysis. For a more permanent option, consider a fistula or graft.
- **How quickly do you need dialysis?** A fistula or graft requires surgery and time to heal, whereas a haemodialysis catheter can be used right away.
- **How well are your blood vessels working?** Stiff blood vessels or old age may affect your access choices.
- **Do you have any other serious illnesses?** A surgery for a fistula or graft may not be recommended for people who cannot handle the surgery or have a poor prognosis.
- **What are your preferences?** Carefully reviewing the risks and benefits of each type can help you decide what's right for you.

Know that your type of access may change over time. For example, you may start with a haemodialysis catheter while waiting for a fistula to heal.

Things to remember:

- ✓ **Dialysis requires an entry point, called ‘access’, to filter your blood of wastes and toxins.**
- ✓ **Peritoneal dialysis uses a catheter into your tummy for access. Haemodialysis uses a fistula, graft or catheter for access to your blood so that it can be filtered by the dialysis machine.**
- ✓ **Taking care of your access site can reduce your risk for infections or complications.**
- ✓ **It is important to immediately report any changes in your access to your health professional team.**

What does that word mean?

Artery – A blood vessel taking blood from the heart to other parts of the body.

Catheter – A plastic tube that is used to take fluid in or out of your body.

Central venous catheter – A special tube which is surgically inserted into your neck, collarbone or top of your leg to allow access for haemodialysis.

Dialysis – A treatment for kidney failure that removes waste products and excess fluid from your blood by filtering your blood through a special membrane.

Fistula – Produced when a vein and an artery in the arm or leg are joined together in an operation to make it easier to move blood in and out of your body during haemodialysis.

Graft – Another type of access for haemodialysis that is used if the blood vessels cannot be used for a fistula. During surgery, an artery and a vein are joined together by soft tubing.

Haemodialysis – A treatment for kidney failure. Your blood is pumped through special tubing to a haemodialysis machine. The machine acts like a kidney, filtering waste products from the blood before returning it to your body.

Nephrologist – A doctor who specialises in treating conditions of the kidney.

Peritoneal dialysis – Treatment for kidney failure during which dialysis fluid is moved in and out of your peritoneal cavity to remove wastes and fluid from the blood.

Kidney Health® Australia

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