

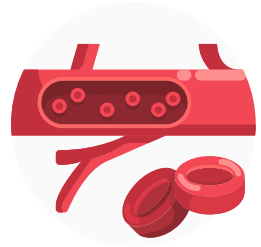


LIFE RENAL DIALYSIS

UNDERSTANDING VASCULAR ACCESS

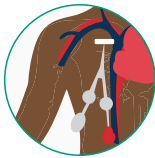
VASCULAR ACCESS FOR RENAL PATIENTS

Dialysis treatments can only be administered by means of creating or inserting a specialised access to your blood circulatory system. A dialysis access is a critical factor in enabling you to obtain the best dialysis treatment possible. Having an understanding of the four types of dialysis accesses will help you and your nephrologist determine which type of dialysis access is right for you.



Types of dialysis access

There are four different types of dialysis access used for hemodialysis, a process in which blood is transported from your body for cleaning:



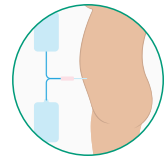
Central venous catheter (CVC)



Arteriovenous fistula (AV Fistula)



Arteriovenous graft (AV Graft)



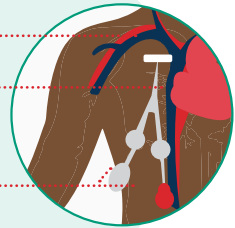
Peritoneal dialysis catheter (PD Catheter)

1 Central venous catheter (CVC)

A central venous catheter (CVC), is a flexible, long, plastic, y-shaped tube that is threaded through your skin into a central vein in your neck, chest or groin.

A CVC is not usually intended to be a permanent type of access.

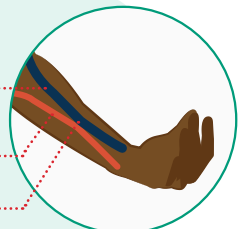
Internal jugular
Right atrium
External limbs of catheter



2 Arteriovenous fistula (AV Fistula)

An AV fistula, is an actual surgical connection made between an artery and a vein. An AV fistula is most often created in your non-dominant arm. An AV fistula allows a higher rate of blood to flow back and forth from your vein to a dialysis machine.

Vein expanded due to increased blood pressure
Artery
Arteriovenous fistula



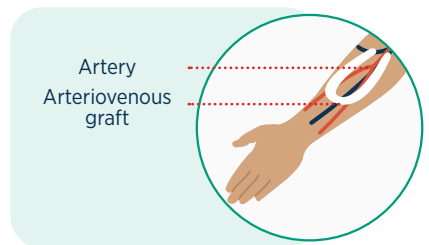
LIFE RENAL DIALYSIS

2 Arteriovenous fistula (AV Fistula) *continued*

Once the AV fistula is complete, you will need to wait a few months before it can be used so it can fully heal. The waiting period is dependent on the prescription of the vascular surgeon.

3 Arteriovenous graft (AV graft)

An AV graft, functions similarly to an AV fistula. If you have blocked or damaged veins, or veins that are too small for a fistula, you may be a candidate for an AV graft. AV graft placement is also a surgical procedure, but instead of connecting the artery directly to the vein, one end of a small hollow, synthetic tube will be connected to your vein, and the other end will be connected to your artery.

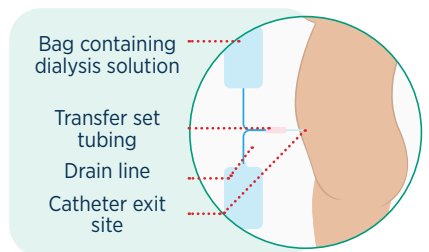


Once the AV graft is complete, you will need to wait before it can be used. This will allow the access to fully heal. The waiting period is dependent on the prescription of the vascular surgeon.

4 PD catheter

A PD catheter is used for peritoneal dialysis, which uses the lining of your belly and a dialysate solution to clean your blood.

This type of dialysis can be a desirable method for people who are always on the go. With a PD catheter, dialysis can be performed at home and takes less time to accomplish. Peritoneal dialysis can either be administered as a manual process CAPD or as an automated process APD.



Continuous ambulatory peritoneal dialysis (CAPD) – This is a manual treatment. During CAPD, a liquid called dialysate is put into your abdomen through a catheter (thin tube). The dialysate pulls wastes, chemicals, and extra fluid from your blood through the peritoneum.

Automated peritoneal dialysis (APD) - this method uses a machine (automated cycler) that performs multiple exchanges at night while you sleep. The cycler automatically fills your abdomen with dialysate, allows it to dwell there and then drains it to a sterile bag that you empty in the morning.

Advantages and disadvantages of the types of venous accesses:

	Advantages	Disadvantages
Central venous catheter (CVC)	<ul style="list-style-type: none"> ■ Quick to place and remove ■ May be used immediately for dialysis ■ CVC placement is an in-patient procedure 	<ul style="list-style-type: none"> ■ May damage central veins ■ May increase the length of the hemodialysis treatment ■ Bathing and swimming not recommended ■ Complications can include infection and catheter clotting
Arteriovenous fistula (AV Fistula)	<ul style="list-style-type: none"> ■ Can function for years ■ Not as likely as a catheter to become infected ■ Not as likely to clot ■ Takes only eight weeks to mature 	<ul style="list-style-type: none"> ■ May require another temporary type of access during the healing and maturation phase ■ Maturation may be delayed, or it may fail to mature ■ Needles are required to access the AV fistula for hemodialysis
Arteriovenous graft (AV Graft)	<ul style="list-style-type: none"> ■ Ready for use in three to four weeks ■ Easy to implant ■ Placement is an in-patient procedure 	<ul style="list-style-type: none"> ■ Doesn't last as long as an AV fistula ■ Needles still required to access the graft ■ Prone to clotting
Peritoneal dialysis catheter (PD Catheter)	<ul style="list-style-type: none"> ■ PD catheter placement is usually performed as an in-patient procedure ■ No need to use needles ■ Dialysis performed at home ■ No need for a temporary CVC 	<ul style="list-style-type: none"> ■ Bathing and swimming not recommended ■ Higher risk of clotting and infection

How should you take care of your vascular access?

- No intravenous infusions or blood samples should be allowed on the same arm as your access.
- Ensure that your healthcare provider checks the access for signs of infection or problems with blood flow before each hemodialysis treatment.
- Keep the access clean at all times.
- Use the access site only for dialysis.
- Be careful not to bump or cut the access.
- Check the thrill in the access every day. The thrill is the rhythmic vibration you will feel over the vascular access area.
- Watch out for and reporting signs of infection, including redness, tenderness, or pus.
- Do not let anyone put a blood pressure cuff on the access arm.
- A local anaesthetic cream or spray can be used to numb the AV fistula before it is needed.
- Do not wear jewelry or tight clothes over the access site.
- Do not sleep on top of your access arm – avoid weight on this arm.
- Do not lift heavy objects or put pressure on your access arm.

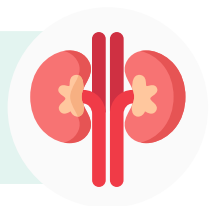
What to expect after surgery and actions that need to be taken:

For arterio-venous fistula (AVF) and arterio-venous graft (AVG)

1. **Swelling of your arm.**
 - Keep your arm elevated using a pillow.
2. **Tenderness, redness or oozing around the access site.**
 - Inform the overseeing nurse to note any abnormal signs and call the vascular surgeons if needed.
3. **It is normal to feel a tingle or vibration at the site of the access. This will be experienced due to a larger volume of blood passing through the newly created arterio-venous fistula (AVF) or graft (AVG).**

In the event an arterio-venous graft (AVG) was created, the tingle / vibration may seem a little fainter than in the case of an AVF. This is due to the thickness of the membrane used to support AVG creation.

If you can no longer feel the vibration or tingling sensation in your arm, immediately inform your overseeing nurse for further medical attention. The overseeing nurse will contact the vascular surgeons' rooms as needed.



References:

- <https://www.azuravascularcare.com/infodialysisaccess/types-of-dialysis-access/>
- <https://www.drugs.com/cg/continuous-ambulatory-peritoneal-dialysis.html>
- <https://www.mayoclinic.org/tests-procedures/peritoneal-dialysis/about/pac-20384725>

LIFE RENAL DIALYSIS

National spread of chronic renal units and mobile renal units

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