

Haemodialysis Access Options



Important Telephone Numbers

Dialysis Access Nurse Specialists: 029 218 43398 (*Mon to Fri 7-3pm*)

UHW Wards (*out of hours*)

Cardiff Transplant Unit (CTU): 029 218 42125

Ward B5: 029 218 45588



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PATIENT INFORMATION LEAFLET

Introduction

You have been given this haemodialysis access information booklet because your kidney doctor thinks it is time to plan for you to have some form of access created in readiness for when you need to start on dialysis.

This booklet will provide information on the different types of access available for haemodialysis and help you decide which would be the best access for you.

An access is a site from which blood can be safely removed and returned to your body during dialysis.

Don't worry if you don't understand everything immediately as you will be given a chance to ask questions and discuss any concerns when you meet with the access team.

Types of Haemodialysis Access

There are 3 main types of access for haemodialysis

1.
**Arteriovenous
Fistula**
(fistula/AVF)

2.
**Arteriovenous
Graft**
(graft/AVG)

3.
**Central Venous
Catheter**
(line/CVC)



Arteriovenous Fistula

The arteriovenous fistula or fistula involves a connection between an artery and a vein. You need a fistula for haemodialysis because the veins in your arm do not have enough blood flowing through them. Two needles are inserted in the vein that is made larger by the join.

One of the needles takes blood to the machine and the other returns blood to your bloodstream. A fistula needs to be made in a timely way before your treatment is needed. It is difficult to predict this therefore your kidney specialist has referred you for a fistula assessment so that the fistula can be created and has time to mature.

Please protect your veins in the arm intended for the fistula operation by ensuring no blood tests are taken from them.

The Fistula Operation

The operation involves making a connection between a vein and an artery in your arm. The connection is made underneath the skin. It is generally made in the arm you do not use for writing etc., and can be in the wrist, the forearm or the upper arm but this will be discussed with you before the surgery goes ahead. In most cases you will go home the same day.

The operation takes place using a numbing injection called local anaesthetic (*you will be awake*) and takes about one to one and half hours. Some patients, due to other reasons, require a general anaesthetic and have an overnight stay.

Benefits of a Fistula

- Can be planned in a timely way so that it is ready for when you need haemodialysis.
- Created from your own vein and artery.
- Involves no plastic tubes.
- Lower risk of infection than any other type of access.
- Lasts longer than other types of access.
- Provides a safer and more effective treatment for haemodialysis.

General Risks

As with any surgical operation there are always risks of complications. The risks will be discussed with you in the access clinic, general risks for fistulas and grafts are listed on page 7.



Arterio-venous Graft *(Graft)*

Arterio-venous graft *(or graft for short)*, is a synthetic tube, made of a special plastic, that connects between an artery and a vein.

Grafts are similar to fistulas but are used when the patient's own artery or vein is not suitable to make a fistula.

The surgeon will implant the graft under the skin in your arm or sometimes in the top of your leg. The graft provides a connection to an artery at one end and a vein at the other end and acts like a vein, allowing blood to flow through it.

The operation is done either whilst you are sleeping – general anaesthetic or under a regional anaesthetic *(this means that only your arm will be numbed and you will remain awake but sedation may be given to make you sleep)*. The operation takes 1 – 2 hours. Once awake you may experience some pain and swelling in the area over the graft site. You will be given some pain killing tablets and advice to help this.

Benefits of a Graft

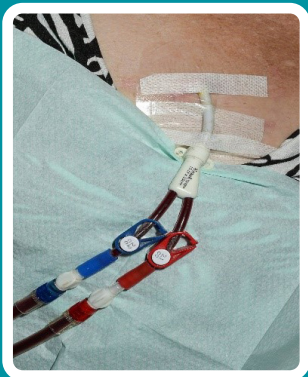
- May work in patients with poor veins.
- Cosmetically more acceptable.
- May be used 24 hours post insertion.

General Risks of Having a Graft / Fistula

As with any surgical operation there are always risks of complications. The risks will be discussed with you at the access clinic. These may include:

- Bleeding during or after the operation.
- Infection of the surgical site/graft requiring antibiotics or removal of infected part.
- Allergic reaction to the equipment, materials or medication. Inform your doctor of any allergies you have.
- Thrombosis (*clotting*) can happen anytime but more common in first 24hrs. The fistula will probably fail (*less than 3 in 10 in 1 year*).
- Narrowing (*stenosis*) or swelling (*aneurysm*) if it affects your dialysis may require further intervention.
- Steal syndrome-where the fistula causes less blood to flow to your hand (*risk 1 in 50*), causing pain and feeling of cold. Can also affect the nerves and muscles in your hand (*risk 1 in 200*), this may require a further operation. More likely in diabetic patients.
- Swelling in your arm if veins get blocked (*risk 1 in 50*) previous lines for dialysis can increase this risk.

If it is difficult to establish either a fistula or graft then the access team will discuss the next options with you.



Catheters (Lines)

Just like a fistula or graft they will allow access to your bloodstream. They are the third option of access for haemodialysis. They are most commonly used when a patient needs dialysis immediately and has no fistula or graft in place. They are also used as a temporary measure when a fistula or graft fails and a patient cannot delay haemodialysis treatment.

Some patients have to rely on these permanently as having a fistula or graft has been extremely difficult to acquire due to other factors.

A catheter insertion is generally done on the ward in a dedicated room by a senior kidney specialist. The more difficult insertions are performed in the X-ray department by a Senior Radiologist. Afterwards you will have an x-ray to ensure the line is inserted in the right area. The stitches and dressing will be taken care of by your dialysis nurse. You will be given advice on how to care for the line.

**The type of catheters commonly used are
Tunnelled and Non-tunnelled.**

These are inserted into a vein in the side of your neck (*see the picture at the top of the page*) the tip of the line sits in your heart. The non-tunnelled lines are used in an emergency situation should you require urgent dialysis. The tunnelled lines are used if you have no fistula in place at the time you require dialysis. There are several risks associated with these catheter lines in comparison to having a fistula or graft. They are discussed here:

Benefits of a Catheter Line

- Can be inserted for emergency haemodialysis on the ward.
- An option for a small majority of people when we fail to make a reliable access.

General Risks of a Catheter Line

There is a general risk when inserting these lines which will be discussed with you before the procedure.

- The risk of being admitted to hospital in the long term is high, usually due to either infections or poor function of the catheter.
- There is a risk of infection with all these lines which often ends with the line being removed. Every effort will be made by the staff to ensure they minimize the risk of infection. These infections can be serious and at times require a hospital admission.
- There is a moderate risk of poor blood flow from the line causing you to have a slower pump speed during the haemodialysis treatment and therefore less blood being filtered during your session. The staff will endeavour to maintain the blood flow by inserting a drug to help increase the blood flow. At times this works but often the line will need to be replaced in the hospital.
- There is a significant risk of the vein the catheter is inserted into, becoming damaged or narrowed due to the presence of the line in it. The longer the line is in the neck vein the higher the risk.
- There is a small risk the catheter line will fall out of the vein.

The Dialysis Access Team and The Clinics

The dialysis access team consists of vascular access clinical nurse specialists, vascular access surgeons with a special expertise in dialysis access, and medical physicists (*someone who specialises in scanning veins and arteries*).

There are two dialysis access clinics:

1. A one-stop dialysis access clinic to plan your access operation.
2. A nurse led follow up clinic 7 – 10 days after your operation.

One-Stop Dialysis Access Clinic

We have a one-stop dialysis access clinic in the University Hospital of Wales every Tuesday afternoon. We call this the one-stop access clinic as we hope to cover all aspects of your review/consultation on this one day.

On arrival to the clinic, you will be seen by the Medical Physicist who will scan both your arms to establish the size of the veins and arteries in your arms.

Once you have had your scan, you will be seen by a vascular access nurse specialist or surgeon to discuss the most appropriate dialysis access for you. Following this you may be given a date for your operation and a pre-operative assessment before leaving. The next time you have to come to hospital will be to have your operation.



Nurse-Led Follow Up Clinic

7 – 10 days after your operation you will be invited to see one of the vascular access nurse specialists.

If the operation has been successful you will also need to have another scan of your fistula 6 weeks (*2 weeks if it is a graft*) after the operation. This scan will measure the flow of blood through the fistula or graft and confirms if it will be ok to use (*when needed*).

In the event that the fistula or graft has been unsuccessful, we will discuss the next steps with you or we will arrange for you to attend the access clinic again to discuss your options further with the surgeon.

Further Information and Support

If you have any anxieties or questions, please feel free to ask any member of staff. If you wish to discuss any of the information from this booklet before or during your appointment please contact the vascular access team. The Dialysis Access webpage contains further information, useful videos on access creation and frequently asked questions from dialysis patients.

Type the link below into your web browser or alternatively scan the QR code.



[https://cavuhb.nhs.wales/
our-services/nephrology-and-
transplant-access-service/](https://cavuhb.nhs.wales/our-services/nephrology-and-transplant-access-service/)

Cardiff and Vale UHB is a teaching hospital and at times medical and nursing staff may be in attendance at the time of your consultation. If you want to opt out of this please inform your doctor/nurse.

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Approved by Access team Nephrology and Transplant Directorate UHW

Mae'r wybodaeth hon ar gael yn Gymraeg – gofynnwch am fwy o fanylion.



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