

Care of your fistula



This booklet compliments the patient information booklet you should have received before you had your fistula created which gives details on why you need a fistula and how a fistula is made.

What is a fistula?

An arteriovenous fistula or AVF is a vessel that is formed by joining a vein to an artery in your arm during an operation to form an accessible blood vessel that gives increased flows of blood that are adequate for dialysis. The process of joining the vein to artery allows for an increase in size of the vein as well as flow in it, and this segment of the vein is called the 'fistula'.

To carry out dialysis two needles are inserted into the fistula by yourself or by the nurse, whichever you prefer, and after dialysis the needles are removed.

A fistula is the best vascular access for dialysis because it tends to have fewer

problems and last longer than other types of dialysis access.



How should I take care of my fistula?

There are a number of things you should do to protect your fistula. We often call your fistula your 'lifeline' because it is so important in enabling a good dialysis.

- Keep your fistula clean - although infections are less likely with a fistula they can still happen. Once it is healed following surgery, wash your arm with soap and water daily and always wash it before dialysis.
- Check your fistula daily - the nurse will show you how to check for a pulse or vibration through your fistula (called a thrill) or a sound (called a bruit). If you can't feel it you must contact your unit or renal ward the same day.
- Do not let anything obstruct the blood flow in your arm- do not allow your blood pressure to be taken on your fistula arm and do not wear constricting clothes or jewellery. Do not carry heavy shopping bags on your fistula arm. Avoid sleeping on your fistula arm.

- Generally you should avoid allowing anyone to take blood from your fistula arm when you are not on dialysis. However, if blood sampling is very difficult from your other veins it is permissible for an experienced phlebotomist to take blood from a mature fistula which is in regular use for dialysis
- Never allow a cannula to be inserted into your fistula for administration of drugs or IV fluids
- Try not to scratch your fistula or do anything which can cause an injury to it. If you suffer from itching let your doctor know such that medication can be considered to relieve the itching.

Cannulating your fistula

Nurses will support you in inserting your own needles if you wish. Many patients who are nervous of needles find it causes less anxiety to self-needle their fistula.

Your dialysis unit can give you a prescription for an anaesthetic cream to use before the needles are placed if you wish.

Wash your arm on entering the unit and then either the nurse, yourself or a carer (after training) can clean your arm with chlorhexidine prior to the needles being inserted.

There are different techniques of inserting needles but if nurses are needling you they will usually use a method called 'rope ladder'. This means they try to needle a different place each time to allow your fistula to heal and prevent weakened areas developing. If you needle yourself or you have one person needling you a different method called buttonhole needling can be used. A separate leaflet called 'Understanding Buttonhole Needling' is available and explains this.

After dialysis the nurse (or yourself/carer if you have received training) will remove your needles and will encourage you to apply pressure on the needle puncture site to stop

it from bleeding. It is important that your hands are clean and a clean dressing or plaster is used. The fistula will usually stop bleeding within ten minutes if you apply pressure using two fingers over the hole where the needle was removed.

Signs to look out for

Although a fistula is the best sort of access and is least likely to develop problems, you do need to be aware of problems that can occur so they can be acted upon quickly.

- Bruising and swelling - if blood leaks out of the vessels and into the surrounding tissue it can cause bruising and the localised area to swell. This is usually caused by a needle coming out of the vessel into the tissue (called 'bumping') or by not pressing firmly when your needle is removed. Bruising and swelling can also occur if you move your arm around during dialysis, however bruising

and swelling is much less likely to occur as the fistula matures.

- Redness or heat - although infection is less likely to develop in a fistula this can still happen. Please contact your renal unit or renal ward immediately if you experience pain, redness, swelling at your fistula site; a raised temperature or if your fistula feels hot or looks infected.
- Aneurysm - this is a swollen area which develops as a result of the vessel becoming weakened, usually because needles are repeatedly inserted in the same area. You may see aneurysms on fistulas that have been established for a long time. Aneurysms are less likely to develop if your needle sites are changed each dialysis (rope ladder) or if buttonhole needling is used. If the skin becomes thin and shiny in an aneurysmal

area and you can see the fistula clearly pulsing under, the skin please notify your dialysis staff .

- Steal syndrome - this is the result of your fistula depriving the area below it of blood, it can cause your hand and fingers to feel cold and painful or numb. Occasionally, this can lead to more severe symptoms such as ulceration and inability to use the hand due to pain. If Steal syndrome is going to occur it usually develops soon after your fistula has been created. Sometimes, this may reveal itself once dialysis is commenced. Please make your dialysis nurses and doctor aware if this occurs so it can be treated if necessary.
- Reduction in fistula flow - check daily for the flow in your fistula by checking the 'bruit' and 'thrill'. If either appears reduced or

absent contact your renal unit or ward immediately. This can happen because of a narrowing in the vessel or because of a blood clot and will need to be treated quickly to try and keep your fistula working.

- Bleeding from your fistula- this can be an emergency situation if it occurs when you are not on dialysis (**if this occurs see last page**) but such emergencies are very uncommon. Other bleeding that you should look out for is blood oozing around your needles often on dialysis or taking a much longer time for bleeding to stop post dialysis. Bleeding after dialysis or oozing slightly from your fistula at other times can mean that your vessel has narrowed and is increasing the pressure within the vessel. This may also cause a raised venous pressure reading on your dialysis machine; your nurses will

explain where to look for this. Sometimes, the bleeding may be related to any “blood thinning” medication that you may be taking, such as warfarin. If you notice any of these signs please let your nurses and doctor know so they can investigate. Most problems of this nature can be resolved to ensure your fistula keeps healthy.

- Allergies - If your fistula becomes red, itchy and sore after applying the anaesthetic cream or any cleaning agent or chlorhexidine, let your nurses know so an alternative product can be used. Also let the nurse know if you have a reaction to the tape or plasters used.
- Scab or wound - let the nurses know if a scab or an unusual area develops on or around the fistula site that does not heal between dialysis sessions.

Tests and Investigations

Recirculation and Access flow monitoring

During dialysis the nurses will occasionally check the flow of blood in your fistula using either a transonic machine, Critline or the dialysis lines and blood temperature monitor. All of these work differently but your nurse will explain how if you want to understand more details.

However, all of the above estimate how well your fistula is working by assessing the blood flow rate through the fistula and whether there is any obstruction causing recirculation (when the dialysed blood from the venous or top needle flows back towards the arterial or lower needle). If this investigation raises any concerns, the nurse will explain this and you will be referred for further investigations of your fistula blood flow rates.

Ultrasound (often called Duplex or Doppler)

If a problem with your fistula performance has occurred you may be asked to have an ultrasound investigation. A handheld instrument (transducer) is run over your fistula and sound waves are used to assess the veins. The computer converts these to a readout giving detail of the blood flow rate and it shows if there is any narrowing (stenosis) or clots (thrombus).

Fistulogram/Fistuloplasty

A fistulogram is an x ray study of the blood vessel and this is done by injecting a dye which will show up on x-ray. A fistulogram is carried out by a radiologist. If a narrowing is seen a

small wire is passed into your fistula and a balloon catheter is passed along the wire to the narrowed area and then the balloon is inflated and deflated to open the vessel and reduce the narrowing.

Declotting of a fistula

A fistula can clot because of a narrowing by slowing the blood flow rate through the fistula. The clot can be removed and this is carried out by a radiologist who inserts a catheter along a small guide wire to the clot which delivers medication into the clot to break it up or a mechanical device is used to break the clot down. Alternatively, if radiological methods fail, the clot can occasionally be removed by surgery.

BLEEDING EMERGENCY

If your fistula begins bleeding profusely, as if your needles have just been removed, when you are not at the dialysis unit this is a MEDICAL EMERGENCY.

- Seek help immediately from anyone who is nearby – the blood flow can be very fast and make you feel faint so do not delay in alerting others.**
- Apply direct pressure immediately using anything that is available nearby – ideally you will use clean or sterile gauze or dressing, your unit will give you a small supply of this, but do not delay whilst you find this.**
- Always apply pressure directly over the bleeding site with your thumb or use an inverted bottle top to localise the pressure**

- **Do not use a large a dressing, for example a towel, as it may be difficult to find where the bleeding spot is and stop you putting enough pressure in the right place**
- **Dial 999. If possible get someone else to do this for you so that you do not release pressure to your fistula but do not delay in doing this, particularly if the bleeding is not completely controlled by you pressing on the fistula.**
- **If the bleeding is not completely under control (you cannot see any further bleeding) whilst you are pressing on it, lay down and ask someone to support you in raising your arm above your head, this can be tiring without help.**
- **Stay calm – bleeding can usually be stopped with enough pressure in the right place but be prepared to apply more pressure than usual if the bleeding is not easily controlled.**

Bleeding between dialysis sessions is very rare and there are almost always warning signs before this happens. Warning signs include:-

- **Infection of the fistula**
- **Bulging area, usually with shiny skin and obvious pulse**
- **Scab that does not heal**
- **Occasional small bleeds between dialysis sessions or bleeding around needles or long bleeding time after dialysis**

Let your dialysis team know if any of these occur.

Always tell nurses and dialysis doctor of any bleeds from your fistula of any size/description as acting on this may prevent a large fistula bleed occurring.