Arteriovenous fistula
Information for patients and their families

What is an arteriovenous fistula?
A fistula is created under the skin by a surgeon. It is made by making a direct connection between a vein and an artery. This can be in the wrist, forearm or upper arm.

Blood flowing from the heart through the arm artery is directed into a vein. The extra blood flow through the vein makes the vein a little bigger and thicker. These changes are enough to allow two needles to be inserted into the vein to remove blood from the arm at the appropriate rate for haemodialysis.

In order to clean the blood by haemodialysis we need to withdraw blood from the arm and return it back again at a minimum rate of 250mls per minute. A normal vein would collapse if we tried to perform dialysis through it. Arteriovenous fistulas are preferred because they give better flow during haemodialysis. Fistulas have less risk for infection and are less likely to clot than plastic catheters.

The creation of a fistula will prepare you for your haemodialysis when and if the treatment is needed. The fistula is created early as it may take several months to develop before we can use it.

The best care of your vascular access is essential
Only a few sites on your body are suitable for a graft or fistula. It is therefore important to care for your access to ensure it last for as long as possible. Good effective dialysis relies on well functioning vascular access. It is important to check your fistula/graft everyday. Best practice would be three times a day. In the morning when rising, at midday before lunch and just before going to bed.

To check your access use the palm of your hand to feel over the fistula site. Feel for a vibration buzz or pulse often referred to as a thrill.

The sequence of events leading toward the creation of a fistula

1. Consultation by a nephrologist
   Here you will be referred to the vascular surgeon.

2. Consultation by vascular surgeon
   Discussing the creation of the fistula. With adequate time for your questions.

3. Ultrasound mapping
   This procedure can take an hour for each arm and is usually achieved over two bookings. The procedure is non-invasive and provides the vascular surgeon information and images of the veins and arteries in your arms. This information will assist the vascular surgeon in making decisions on the optimal fistula they can create for you.

4. Further consultation by the vascular surgeon
   Discussion on the fistula creation. With adequate time for your questions. If you agree to the surgical creation of an arteriovenous fistula we will then ask for your consent. This is done by signing a consent form.

5. Pre admission consult
   You will be interviewed by a nurse discussing your health and the procedure. A letter will then be posted to you with the surgical booking date and time.

6. Creation of an arteriovenous fistula
   You will need to be in hospital overnight so the fistula can be monitored by a nurse. On most occasions you will be able to go home the morning after the procedure.

7. Follow-up clinic and education
   You will be instructed how to monitor and look after your fistula. A follow-up vascular clinic review will be planned five to six weeks after the creation of your arteriovenous fistula.
Everyday check for:
Redness, swelling, pain, pus or open sore, numbness, warmth, fever ballooning of fistula.

If you cannot feel a buzz or pulsation it is essential to contact the renal dialysis centre as soon as possible. If the dialysis unit is closed, present to the emergency department of your nearest hospital.

Dressing the access site
Dressings will be applied post dialysis. The dressings should remain on for a minimum of four to six hours. If the site bleeds apply pressure using a dressing. If the site continues to bleed contact your dialysis unit or emergency unit.

Reminders for fistula care
• Never wear tight sleeves, watches, jewellery or the like over or around your fistula.
• Never carry heavy shopping bags or handbags on your access arm as this will stop blood flowing through the fistula.
• Never wear hospital identification band on your fistula/graft arm.
• Never allow anyone to collect blood, insert a cannula or take a blood pressure on your fistula/graft arm unless authorised by your nephrologist.
• Always keep your fistula arm warm in cool weather. Helps maintain blood circulation.

Mapping (ultrasound)
Left arm date....................
Right arm date..................

Vascular appointments
Date..............................
Date..............................
Date..............................

Pre-admissions clinic
Date..............................

Creation of fistula
Date..............................

Vascular appointment
Date..............................
Date..............................

Re-mapping
Date..............................
Date..............................

Fistula ready for use
Date..............................