

What is Haemodialysis?

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Haemodialysis literally means 'blood filtering'. Haemodialysis does the job that the kidneys would normally do by removing waste products and excess water. It is done by pumping your blood through a special filter called a dialyser (or artificial kidney) and returning the cleansed blood to your body. (For the scientists amongst you it works using osmosis and diffusion, across a semi-permeable membrane.) Treatment is carried out whilst you are sitting or reclining in a chair. It is not painful and should cause you minimal discomfort.

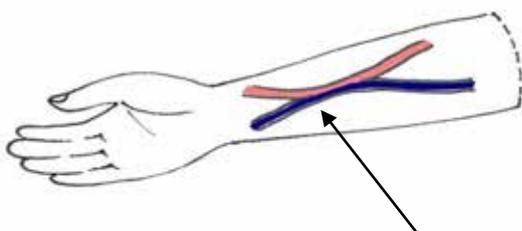
How do we get to your blood stream?

Before you can start haemodialysis we need to have access to your blood stream. This can be done in two ways:

Arteriovenous fistula

Ideally you will start haemodialysis treatment with an AVF (or arterio-venous fistula). A fistula is when a connection is made between an artery and a vein in your arm either at wrist or elbow. This will involve a small operation which is carried out at the Churchill Hospital in Oxford. As a result of this, the veins in your fistula arm grow larger and stronger as the artery causes more blood to flow into the vein. Once this heals you will have nothing on the outside of your arm and you will be able to get it wet in the bath or shower (usually 1-2 weeks).

It usually takes about six weeks for the fistula to mature and be ready to use for dialysis once your blood results or symptoms indicate to the doctors you need to start. When mature, your fistula is used at each dialysis treatment by inserting two needles. One needle will take blood away from you and into the machine and the other returns your blood cleaned. A local anaesthetic may be used at insertion of the needles. Following each treatment, the needles are removed and a small plaster is used to cover the puncture site. If a fistula is required, you will be given a full information sheet.



Artery joined to vein

The diagram shows how a fistula is made in the wrist area.

Alternatives to an AV Fistula

All haemodialysis patients should have an AV fistula if at all possible, as it has less risk of infection.

A dialysis line may be necessary for dialysis if a fistula is not ready to use, if dialysis is required as an emergency or is unforeseen.

If a dialysis line is needed for more than a few days, we will insert a semi-permanent catheter called a Tunnelled line. This is a pair of soft plastic tubes (rather like a cannula you may have had for a drip), which are inserted into a large vein in your neck under local anaesthetic and tunneled under the skin to come out below the collarbone on the chest. A doctor carries out the procedure in the X-ray department at the Royal Berkshire Hospital. The Tunnelled line may be used for dialysis treatment the following day. If a Tunnelled line is required, you will be given a full information sheet.

A temporary catheter or “Vas cath” may be used for dialysis if haemodialysis is needed as an emergency. It is rarely left in place for more than a week and often you remain as an inpatient. This type of catheter may be placed in the neck or groin.

Treatment management

Haemodialysis takes place in either of the Haemodialysis Units at the Royal Berkshire Hospital, in the Windsor Dialysis Centre on the Maidenhead Road, in the Enborne Dialysis Unit at West Berkshire Community Hospital in Thatcham or the Bracknell Dialysis Unit at Brants Bridge. You will normally dialyse in the unit that is the closest to your home. You will need to attend the Haemodialysis Unit three times every week. The average treatment time is four hours, but this will vary according to the individual, depending on the amount of waste products to be removed and how much work your own kidneys are still doing. Your blood and urine results will be checked regularly and the doctors may vary your treatment time to keep you in the best possible health. It is very important that you don't miss a treatment session, even if you feel unwell and don't feel like attending.

The Haemodialysis Units are open six days a week, Monday to Saturday. Opening times vary, most are open by 7am but some close in the evenings on certain days. Currently Bracknell does not open in the evening. You will be given the same set appointment time on either:

- Monday, Wednesday and Friday **or** Tuesday, Thursday and Saturday

On each of these days there are three different shifts of patients dialysed, beginning first thing in the morning, around lunchtime and early evening. It is important that you attend at the time given so that the patients due to be dialysed after you are not delayed. You may not be able to choose the days or time you to attend for treatment, we will do our best to meet your preference but it may mean you changing to your preferred choice when a space becomes available. You will be offered tea and biscuits on dialysis but you may like to also bring a sandwich.

Transport to the Unit

If you are unable to make your own way to the Unit, staff can arrange hospital transport for you. While this is a free service (by minibus, taxi or ambulance), it is likely to be serving several people and may take some time or be subject to delays. The Unit staff and Patient Transport Service work very hard to ensure waiting times are kept to a minimum.

What to expect on haemodialysis

The nurse will insert your needles, if you have a fistula, and connect you to the machine. The needles may hurt a little when they go in - you can choose to have a local anaesthetic spray or injection. Once you are on dialysis it is painless. It is quite common that you may experience some bruising on your fistula initially. Once it has been used regularly this doesn't seem to be a problem. If you have a tunnelled dialysis catheter then the nurse will join up the tubes from the machine directly to your catheter. If you have a tunnelled dialysis catheter the nurse will ask you to wear a mask, to help prevent infection, and if necessary preserve your privacy and modesty by drawing the curtains. All units have men and women dialysing at the same time, if you have concerns about this please talk to the sister.

The machine monitors what is going on and records all the information which is then stored on the computer. It may 'bleep' and alarms may sound, the staff will quickly attend to it.

For your first few dialysis sessions you may feel very tired and sometimes your blood pressure may drop during treatment. Your blood pressure will be taken regularly throughout your dialysis, usually every 20 to 30 minutes. If you feel light headed during dialysis let one of the nurses know and they will attend to you. You may experience headaches and possibly nausea. These symptoms will pass as you get used to dialysis.

Possible side effects of haemodialysis

Once your dialysis routine is established, problems during the session are uncommon. However, if you have a lot of fluid to remove during the treatment, you may experience some of the following symptoms:

- Cramp
- Nausea (feeling sick)
- Dizziness
- Headache

All these symptoms can be relieved by a few simple measures. Some people may feel tired after the dialysis treatment and may want to have a short nap on returning home. This is entirely normal.

Possible complications

We advise you to protect one arm from blood tests and blood pressures as soon as you know that you are likely to need dialysis. This protects the blood vessels to assist in the formation of a fistula. If your blood vessels are fragile because of your age, smoking, diabetes or other causes then creating a fistula may still be difficult and may not work on the first attempt. Whilst some fistulas work well for many years, after time some people notice that the veins may become very prominent or that the fistula no longer works and another may be required.

Haemodialysis treatment involves having access into your blood stream and therefore there is a risk of infection. Every care is taken to ensure that all procedures involved in connecting and disconnecting patients are carried out as a sterile technique. Patients with lines are at a greater risk as these are “foreign objects” in your blood vessels and therefore more susceptible to infection.

We try to ensure that everyone likely to need dialysis is vaccinated against Hepatitis B. Everyone having dialysis is tested every 3 months for blood borne viruses including Hepatitis B, C and HIV. Whilst all haemodialysis tubing and dialysers are only used for one person and then thrown away and dialysis machines are heat disinfected to clean them between each patient, there is a very small risk of contracting a blood borne virus.

Holidays

Everyone enjoys a holiday and there is no reason why you cannot have a break in the UK or abroad, provided you give enough notice, as extra planning will be required. Dialysis treatment would have to be arranged at a local hospital or holiday dialysis centre. This treatment is available free at NHS hospitals within the UK (for up to three weeks a year) and also in the European Union where reciprocal arrangements exist. If you go outside of Europe then you will have to pay for your own treatment, which starts from about £250 per session. You will need to check with the nurses if your destination is considered to be ‘a high risk area’ (such as Africa and Asia). Return from a high-risk area requires two months isolation dialysis and you will need to ensure that such a space will be available for you, before you go. You will require blood tests and swabs to be taken and results sent to your holiday dialysis centre.

Blood tests

In order for us to assess the adequacy of your dialysis treatment, regular blood tests are carried out and if you still pass urine you may be asked to carry out a 48-hour urine collection. The blood for these tests is taken directly from the bloodlines during your treatment session.

Taking care of yourself

Fluid balance - Healthy kidneys remove fluid from the body in the form of urine. After starting on haemodialysis you may find your urine output decreases, and go on to have no urine output at all. Dialysis cannot remove nearly as much fluid as normal kidneys, so as a general rule, a fluid allowance of one litre a day will prevent too much fluid building up in the body between haemodialysis treatments. You will be given a target “dry weight” to achieve at the end your dialysis treatment. This is your optimum weight when your blood pressure is normal, you have no breathlessness caused by fluid overload and you feel comfortable with your weight.

On arrival at the Unit you will be asked to weigh yourself and check your blood pressure. Try to ensure you weigh yourself with a similar weight of clothing on for each dialysis session. Accurate assessment of weight gain between each dialysis is very important. Each kilogram of extra weight is equivalent to a litre of fluid that your kidneys have failed to remove.

At the end of dialysis you will be asked to weigh again to check how much fluid has been removed during treatment. Your weight before and after treatment and blood pressure during the session will be carefully recorded at each visit to give us an accurate picture of your progress.

Diet and haemodialysis

Taking care with your diet is also important when you require haemodialysis. Dialysis will remove toxic waste products aswell as excess fluid from your blood. However, it is important that the levels of some waste products (derived from certain foods and drinks) do not build up between dialysis sessions. It is also important to keep well nourished by eating enough protein, enough calories and a good variety of foods to provide the correct range of nutrients.

The dietitian will be able to advise you on the right diet for you – but the following information outlines some of the important points to be considered.

Salt (sodium) - Salt and salty foods will cause you to feel thirsty making it more difficult to stick to your fluid limit. Too much salt in the diet is also linked to high blood pressure. It is wise to avoid added salt and salty/processed foods.

Protein - Required to keep your cells and tissues healthy and to help to fight off infections. Some examples of high protein foods are meat, fish and eggs. The dietitian will advise you how much protein you need in your diet.

Potassium - A mineral that is found in a wide range of foods and drinks. It may be necessary to limit some of these to prevent the level of potassium in the blood from becoming too high between dialysis sessions. Too much potassium in the blood can be a serious risk to your heart. Foods high in potassium include filter coffee, chocolate, fruit

juice, some alcoholic drinks, potatoes, fruit and vegetables. It is not necessary to exclude all of these foods from your diet – your dietitian will give you more advice.

Phosphate - Our bones consist mainly of the two minerals - calcium and phosphate. When your kidneys are not working, the level of phosphate in the blood can rise causing bone problems and possibly leaving chalky deposits in your blood vessels. Therefore, you may be advised to limit your intake of some foods that contain a high level of phosphate. High phosphate foods include cheese, milk, yoghurt, meat, fish and nuts.

And finally...

Any Haemodialysis Unit in the country is unique and Reading, Windsor, Thatcham and Bracknell are no exception. As you have set appointment times on the same days each week, you will become friends with fellow dialysis patients on your shift. You will get to know them and their families very well and will receive a huge amount of support from them. You are never alone as a renal patient!

Life on haemodialysis is not always easy but can still be very rewarding and fulfilling. We are here to offer you all the help and support we can.

Kidney Care Nurses 0118 322 7899 Victoria Ward 0118 322 7476

This document can be made available in other languages and formats upon request.

Renal Medicine, February 2019

Review due: February 2021