Introduction

This leaflet provides brief information and background about dialysis. It may provide the answers to all your questions. Your doctor or nurse will discuss your dialysis with you and will be happy to answer any questions you may have.

Advanced kidney failure results in gradual accumulation of waste products and extra fluid in the body that healthy kidneys would normally remove. When your kidney function falls to around 10% of that of a healthy kidney, you may start experiencing the symptoms of kidney failure. These are non-specific symptoms and may present in the form of:

- tiredness
- weakness
- insomnia (not being able to sleep) or needing more sleep,
- swelling
- passing less urine than you normally would.

Each patient is different and so there may be variation in the symptoms experienced by each individual patient. Initially, symptoms can be controlled with drugs in the form of tablets or an injection. As your kidney function declines and your symptoms worsen and become more pronounced, you will require either dialysis or a kidney transplant.

Dialysis removes excess waste products and excess fluid from your body. It also replaces certain substances in your body to a limited extent, balancing or normalising the levels of certain minerals also known as electrolytes. Dialysis also performs the important function of regulating your blood acidity, or pH level.

Principals of dialysis

Dialysis involves exchange of substances between your blood and the dialysis fluid via a special semi permeable membrane (= a filter).

The diagram below shows the basics of what happens during dialysis.
The membrane for haemodialysis is the dialyser membrane and for peritoneal dialysis it is the peritoneal membrane in your abdomen.

Which type of dialysis is right for me?

There are 2 main types of dialysis. Throughout the UK, approximately equal numbers of patients are having haemodialysis or peritoneal dialysis. There is no survival advantage of one type over the other.

So which dialysis option is the best?

Neither, as different treatment options suit different individuals based on a host of factor, including medical and social circumstances as well as personal preference.

How long will I need to continue on dialysis?

There is no cure for kidney failure and once you are past a certain stage, that is once your kidney function declines far enough, the condition is permanent.

The only alternative to dialysis is transplantation. Once dialysis has started, it is usually needed for the rest of your life unless you receive a transplant. However, if there is an improvement in kidney function, 1 in 200 patients are able to temporarily suspend dialysis for a few months. Your survival is generally at best up to 2 or 3 weeks after dialysis has stopped. Patients who may not be suitable for dialysis and transplantation or choose not to start dialysis can survive for a few days to several months depending upon the status of their kidneys. For further details please seek information on “Conservative Management of Kidney Failure”.

How well does dialysis replace the job of my kidneys?

Dialysis treatment will relieve many of your symptoms of kidney failure, but unfortunately this is not a total substitute for your kidneys.

Your kidneys work 24 hours a day, 7 days a week. There is no promise that you will feel 100% fit on dialysis and there will be dietary and fluid restrictions as well as medication that you must take. You will be advised on the restrictions by your doctor and renal dietitian. Your dietary restrictions will also include a low potassium diet and/or a low phosphate diet. Further dietary advice will be given by the renal dietitian and an appropriate leaflet will be provided when required.

Commonly prescribed drugs specific for dialysis patients with kidney failure are blood pressure tablets, phosphate binders i.e. Adcal, Phosex, Sevelamor or Lanthanum Carbonate and also vitamin D supplements i.e. One Alphacalcidol and also Erythropoietin injections for anaemia. Further information is available from the “You and your Medicines (Please ask a member of staff for Ref: 409)” leaflet.

Can I continue my job or studies?

Depending upon your general well being, we encourage the continuation of your job or studies. There may be a need to adjust your working hours or workload and you may feel like you need to find a less strenuous job once you have started dialysis.

Can I still go on holiday?

You may still travel when having haemodialysis. However, you will need to make contacts well in advance to the dialysis unit at the holiday place you are visiting so they
are aware of your requirements. Information regarding the details of places will be available from your unit.

**Social support and coping with dialysis**

Dialysis or transplant will become part of your life. Knowledge about your treatment is key to you making the best of your new life. You will have to learn about your condition and what it means to be on dialysis. You will need to learn to eat and drink the right things and to take the right drugs. If you learn and use your knowledge you will be able to control your illness rather than the illness dominating your life.

Thousands of patients at some point have been through difficulties in the early stages of kidney failure. Most of your questions will be answered by your doctor, nursing staff or renal dietitian. You will have the opportunity to meet with a social worker or a clinical psychologist if required.

Aintree University Hospitals Nephrology Department have an established kidney patient association support group called AKPA (Aintree Kidney Patients’ Association) for kidney patients under the care of Aintree University Hospitals Nephrologists. The group holds regular educational and informative meetings as well as social events. There is also a patient support group in the Southport area (Southport Kidney Fund) which you can contact and join. Please ask member of staff for more information.

**Can I claim for Social Security benefits?**

Patients who dialyse at home at least twice per week can claim Disability Living Allowance (Attendance Allowance if you are over 65). Other benefits are assessed on individual medical and financial circumstances. If in doubt, contact your social worker, local welfare rights officer or Citizens’ Advice Bureau.

**Haemodialysis (HD)**

**How does it work?**

As seen in the above picture, blood from the body is taken via a needle inserted into a fistula, graft or dialysis line (please ask for a “Vascular access” leaflet) and is passed through a haemodialysis machine. The circuit has a filter containing a special permeable membrane called a dialysate (artificial kidney). Blood and dialysis fluids flow through on either side of the membrane to allow the exchange of substances. Blood returns to your body via a second needle.

Treatment usually requires dialysis three times a week at 4 hour sessions, usually on a Monday, Wednesday, Friday or on a Tuesday, Thursday and Saturday.

**Where will I have my haemodialysis?**

There are two options for maintenance haemodialysis treatment.

1. **Hospital haemodialysis**

   This is the more common option for maintenance haemodialysis and is carried out by specially trained nurses. You will be allocated a fixed time for dialysis (morning, afternoon or evening) depending on availability of slots. You will be allocated to a dialysis site, which will be as close to your home as is possible. However, this will depend on the availability of space at this site and on whether
you are medically fit enough to dialyse at a site away from the hospital.

In rare circumstances, you may need to dialyse at a unit elsewhere in the Mersey Region (at times of emergency or an unexpected increase in demand for dialysis services).

If you are well enough, you will be asked to manage your own transport, otherwise transport via ambulance will be organised to pick you up from home and drop you back.

2. Home haemodialysis

It is possible to have haemodialysis set up at home. This requires fulfilment of certain criteria i.e. preference, ability to dialyse yourself, support at home and installation of the machine and plumbing. You will require initial treatment and training at the hospital by nursing staff. Equipment and support will be provided by your Renal Unit.

**Advantages:** flexibility, independence and no need to travel to and from dialysis sessions. Dialysis sessions can be adapted to your lifestyle and it can be organised without interrupting your work schedule.

**Disadvantages:** you will be required to take responsibility for dialysis, limitations on space at home and also home support.

**What are the problems during HD?**

Maintenance haemodialysis normally does not give any problems. You can read, chat, watch television or just take a nap.

**Side Effects:** Sometimes you may feel sick, experience cramps or feel washed out after the treatment. This is usually common if too much fluid has been removed in a short time, which results in a drop in your blood pressure. The symptoms are usually relieved by tilting your chair back and decreasing the rate of fluid removal.

To avoid these symptoms, it is necessary to stick to your diet and fluid restrictions and take your prescribed drugs regularly.

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**Peritoneal Dialysis (PD)**

**What is PD?**

This type of dialysis takes place inside your body. The peritoneal membrane which lines your abdomen acts as a dialysis filter.

A tube (peritoneal catheter) is inserted into your abdomen through the skin. This catheter is left in-situ and is used for introducing dialysis fluids inside your abdomen.

**Am I suitable for PD?**

Most people are suitable for PD, but those with severe abdominal injuries or who have had previous abdominal surgery usually are not suitable for PD. Those patients who are blind or have arthritis can also go on P.D with the help of a special device and systems.

PD requires a lot of commitment from you and your family. You are responsible for your own dialysis at home, therefore PD may not be suitable for people who have no home support.

**Types of PD**

There are two main types of PD.

- **CAPD (Continuous Ambulatory Peritoneal Dialysis)** - Fluid is inserted via tube, is left in the abdomen for a few hours and then is drained back out. Once it has been drained, another bag of fluid is inserted again. There are about 4 exchanges of fluid.
bags during 24 hours and the last exchange is usually before you go to bed. This is drained first thing in the morning for another exchange. This means that there will be fluid in your tummy all the time.

1. **Automated PD** – a machine runs the dialysis fluid in and out, usually overnight.

You will be given preference, depending on your suitability and requirements.

**What else is required for PD?**

You will require regular blood tests and PD tests to confirm your dialysis is working. The dialysis dosage may need changing depending upon your test results. You may feel unwell or tired if peritoneal dialysis is not adequate for you.

**What are the problems with PD?**

PD is not entirely free of problems. Some patients continue dialysis with no problems. Other patients have minor problems and some have recurrence of specific problems such as abdominal infections, which would require medical input. Some patients also suffer drainage problems and psychological problems as well as back pain.

**How long can I remain on PD?**

Some people have successfully stayed on PD for more than 10 years. Many patients change from PD to haemodialysis for various reasons and some patients may have a successful kidney transplant.

**Will I be able to live a normal life on PD?**

PD gives more flexibility compared to haemodialysis. There are restrictions due to need for exchanges on CAPD and the need to connect to the machine on APD, but most patients enjoy a good quality of life. There are some limitations on certain aspects of life, i.e. sports, work, family life and sexual relationships. Some people can cope more easily compared to others.

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**Diet and fluids in chronic kidney disease**

**Why is diet important?**

When your kidneys are not working well a build up of waste products and fluid can occur in your body.

By eating the right foods and following the advice in this leaflet it can help to prevent a build up of these waste products and help control your blood pressure.

**What are the main dietary points?**

In normal circumstances you do not need any diet or fluid restriction other than a usual healthy diet. Your doctor will advise you if you require specific restriction and you will be referred to the dietician for further advice.

**Weight**

Try to keep to a healthy weight or Body Mass Index (BMI – ideal 20-25kg/m²). If you are overweight this can increase your blood pressure.

**Salt**

Too much salt in your diet can increase your blood pressure. Salt can also make you thirsty. If you are on a fluid restriction this can make it harder for you to keep to your fluid allowance.

Try to use less salt in your diet and limit processing foods (high in salt)

Do not add salt when cooking
Do not add salt at the table
Do not use flavoured salts, e.g. garlic salt or rock salt.
Do not use salt substitutes e.g. LoSalt or Selora
Fluid

When your kidneys are not working well it can lead to an accumulation of fluid in your body for example your ankles, legs and chest. Your doctor may advise you to restrict your fluids and prescribe water tablets to help remove the extra fluid.

As well as tea, water and other drinks you will also need to count certain foods as part of your fluid allowance for example, jelly, ice cream, milk on cereal, porridge, milk puddings, soup, gravy and sauces.

If you have a high salt diet this can make you thirsty and make it harder to follow your fluid allowance.

Potassium

When your kidneys do not work properly they may not be able to get rid of potassium. This increases the level of potassium in your blood. Certain types of medications like some blood pressure tablets can also further increase the level of potassium in your blood. High levels of potassium can be dangerous to your heart.

If your blood tests show an increased potassium level your doctor will refer you to a dietician for advice on a low potassium diet.

Protein

Protein is an essential part of a well-balanced diet. When your body breaks down protein your kidneys deal with the waste products. It is important therefore, not to over eat protein foods, for example meat, fish, cheese, eggs, milk and nuts. Try to keep these foods to 2-3 portions per day in your diet.

Phosphate

Phosphate is a mineral found in your bones. Your kidneys normally get rid of excess phosphate. High blood levels can lead to thinning of your bones, joint pain and can damage your blood vessels. Phosphate levels may go up in the advanced stages of kidney disease. If your blood tests show a high phosphate level your doctor may prescribe you a drug called phosphate binder and refer you to a dietician for a low phosphate diet.
If you require a special edition of this leaflet

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