

# What I tell my patients about haemodialysis.

**It is important that, as a patient approaching end-stage renal failure who will require some form of renal replacement therapy, you are gradually introduced to the concept of dialysis. This can be a major change in your life.**

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**Unfortunately, very often patients present with end-stage renal failure, requiring urgent or emergency dialysis, before they have had an opportunity to learn about dialysis**

**itself and the different methods of treatment available. It is important, then, that you are given increasing amounts of information on a number of occasions (Figure 1). In this way we can address any fears you may have at the prospect of dialysis.**

All patients, and ideally their close relatives, should be informed about the choice of treatment of either haemodialysis or peritoneal dialysis (chronic intermittent haemodialysis; CAPD - continuous ambulatory peritoneal dialysis; or APD - automated peritoneal dialysis). You should also be told about the advantages and disadvantages of these treatments for each individual, and about the hope, in due course, of potential transplantation - cadaveric, live related donor or non-related donor.

In Norwich, patients approaching end-stage renal failure are usually referred to the CKD (Chronic Kidney Disease) Nurse who would visit you in hospital, in the outpatient clinic, or, preferably, in your own home to discuss the subject of dialysis. You and your family are

invited to a Renal Information Evening to hear presentations about the modes of renal replacement therapy with contributions from the community dialysis sister, haemodialysis and CAPD nurses, dietitian, social worker, pharmacist, and counsellor, as well as from patients undergoing both types of treatment, who outline their personal experiences. Adequate time is given for questions and discussion as well as a tour of the unit itself. If required, you may be seen again in your own home to discuss the subject of dialysis further. Many of our patients choose to attend the evening session more than once.

The amount of information given depends on the needs and requests of the individual patient.

## What is haemodialysis?

Haemodialysis is a proven method of removing waste products and extra fluid, which build up in the blood when the kidneys are no longer able to function properly. To accomplish haemodialysis it is necessary to have direct access to the blood vessels. This is because treatment is required up to three times a week.

## Catheters

Access can be achieved temporarily by placing a catheter (artificial tube) in one of the large veins in the neck or in the groin to enable dialysis to be undertaken on the same day. This method is not without problems, especially a tendency towards clotting, rendering the catheter ineffective, and the development of infection, necessitating removal of the catheter and placement of a further tunneled catheter in another major vein. There are patients for whom this form of access is their only 'lifeline' and the catheters might, with careful handling, last several months or even years. They are a little unsightly and restrictive but many patients tolerate them well.

## Fistulas

An alternative and more permanent means of access to the circulation is by use of a fistula (Figures 2a and 2b). In general, flow through the superficial veins of the body is somewhat slow and low in volume yet, for dialysis, at least 200 ml of blood needs to be removed every minute for treatment. To achieve this





Figure 2a. Fistula needles in position

Figure 2b. A developed fistula used regularly for dialysis

fistula is constructed. A fistula is an artificial communication between an artery and a vein. The arteries in the body tend to be deep and need to be brought nearer to the surface and a connection is made between the artery and the vein that increases the blood flow through the vein. As the vein is exposed to the higher pressure from the artery, the walls of the vein become thickened and more capable to withstand being accessed three times a week for treatment.

The fistula is usually placed at the wrist or inner part of the elbow, depending on the size of the blood vessels, in the non-dominant arm so that when dialysis is undertaken you have the ability to perform other activities.

The construction of the fistula is undertaken in an operating theatre, usually under a local anaesthetic. However, there are occasions when you may require a general anaesthetic. After the fistula has been constructed it begins to mature. This usually takes between six and eight weeks depending on the size of the initial blood vessels. The fistula will become swollen and prominent on the surface of the skin. Even before the fistula becomes slightly distended, the rush of blood through its new path can be felt. This sensation is called a 'thrill'. It is a rippling or buzzing sensation that is felt when the soft pads of the fingers are placed over the skin. The fistula should be felt daily and if there is no 'thrill' you should immediately contact the renal unit.

The fistula is used for haemodialysis by placing two needles in different places. Needling of the fistula might be painful. To lessen the discomfort, local anaesthetic is used to numb the area where the dialysis needles are to be inserted. Most describe the sensation of the local anaesthetic inserted with a fine needle as a 'stinging' or 'burning' sensation which lasts only a couple of seconds. After that it usually does not hurt all. If you have a severe needle phobia an anaesthetic ointment can be placed over the fistula needle site a few hours before treatment to help alleviate some of the fear and pain.

Following insertion of the needles special tubing is attached, which is then connected to the artificial kidney. Blood flows out of the fistula through one needle to the artificial kidney and then back to the fistula through another tube and needle.

It is necessary to sit or lie down while you are attached to the machine for treatment (Figure 3, overleaf) but you may read, sleep, eat, watch television, etc, as you wish. During dialysis there is no abnormal sensation. Many patients ask whether they will be aware of the blood outside the body but the answer is 'no' - the amount of blood in the kidney and tubing is minimal.

There are guidelines you must follow in order to take care of the fistula:

- Do not allow your blood pressure to be measured on the fistula arm.
- Do not allow blood to be drawn or a drip installed in the fistula arm.
- Do not wear a watch or tight clothing with elastic or restrictive bands.
- Do not sleep on top of the fistula arm.
- Be careful when using any sharp object or equipment.

With proper care and attention a fistula can last for many years and is one of the safest forms of access.

### What are the advantages of haemodialysis?

1. Treatment takes place at the hospital and is carried out by trained nursing staff. Patients feel safe in the knowledge that the responsibility of their dialysis is undertaken by someone else. This is often an attractive proposition especially for the elderly patient.
2. No treatment between sessions. As haemodialysis only takes place up to three times a week for three to four hours on each occasion, the intervening days allow a certain amount of freedom when normal daily activities can take place.
3. Low risk of infection from fistulas.

### What are the disadvantages?

1. Travelling back and forth to hospital up to three times a week on designated days can be tiring.



Figure 3. Patient on dialysis

2. A more rigid diet and fluid restriction, as dialysis is taking place intermittently.
3. Needle phobia. For some, having injections several times a week can be a horrifying thought. However, hopefully, this is reduced by the use of local anaesthetics.
4. Body image. After a period of time, fistulas, as a result of repeated needling, can become enlarged and, for some, unsightly.
5. Holidays. As with any holiday, it can take some organising and this is more so for a renal patient. Dialysis has to continue; therefore a unit has to be found that is willing to dialyse you. Most UK units find it difficult to offer holiday dialysis facilities, although it is possible in other European countries.

### How often is treatment required?

Ideally treatment should be undertaken three times a week for approximately three to four hours. Often when you first start dialysis you may have a small amount of your own kidney function still working (albeit not sufficient to sustain life without dialysis), and so treatment may be undertaken only twice a week. In time, usually three to six months after starting dialysis, treatment is required more frequently. From time to time various blood tests are taken to determine whether the frequency and duration of treatment are adequate and adjustments may be made on the basis of these measurements. Every effort is made to ensure that your dialysis treatment is individually tailored to meet your needs.

### Is there a special diet?

Most, if not all, patients on haemodialysis need to adjust their diet. The major change in diet is usually a reduction in foods high in potassium, and sodium (salt). The dietitian will give you individual

guidance about how restrictive such a diet needs to be. Assessment of dietary intake, especially protein, is monitored from time to time to ensure an adequate protein and calorie intake, which is an important part of maintaining a good quality of life. However, if you are overweight, an attempt to achieve an ideal body weight may be undertaken working within the restrictions of a renal diet.

One of the major restrictions that you may find difficult is your fluid intake. In the early stages of commencing haemodialysis you may pass a great deal of urine but, as time progresses, the volume will decrease. In between dialysis sessions a high intake of fluid may not be removed by the kidneys and will tend to accumulate, causing ankle swelling and, if severe, shortness of breath. Over prolonged periods this is not beneficial to your wellbeing. Fluid intake is assessed for each individual patient. However, in general, the rough guide for fluid intake is half a litre (500 ml) of fluid on top of the volume of urine that is passed on a daily basis.

Measurements of urine output will be made in order to assess your fluid allowance on a regular basis. When and if changes are required, the dietitian or renal nurse will discuss these with you.

### What about medication?

Working in conjunction with haemodialysis and diet is drug treatment. Before dialysis is commenced you may be taking prescribed medications such as antihypertensive therapy (to lower your blood pressure), and diuretics (to encourage your kidneys to excrete more urine). A list of drugs explaining the reasons why and how they act is given out at the Information Evening. However, it is stressed that, as with the diet, your medication is individualised.

### How are work and personal life affected?

In the initial stages of starting treatment, a certain time period of adjustment is needed as many changes are taking place. Either before treatment or once your treatment has commenced, the renal social worker will be available to discuss with you how dialysis may affect various areas of your life - for example, work, finances, social and personal relationships.

If necessary, the social worker and community dialysis sister will (with your permission) talk to your employer about your treatment to help alleviate any concerns you may have, as well as those of your employer. The dialysis unit will do all they can to arrange your treatment times so that they fit in with your work schedules.

Financial worries can be discussed and, where applicable, certain benefits applied for, such as mobility and disability living allowance. The renal social worker also has access to certain kidney patient organisations that can provide assistance or act as a support group for you and family.

Dialysis places a considerable strain on personal relationships, often making communication between patients and partners difficult. This, in turn, may have a knock-on effect on those around you. The renal

counsellor is there to listen to your anxieties and to try to bring about an understanding of these feelings, reinforcing that it is perfectly normal to feel this way.

### What are the long-term considerations?

Many find that the travelling to a dialysis centre is both inconvenient and time-consuming. An alternative is to have a dialysis machine at home. In certain areas this is still an option. After a suitable period of training for both the patient and helper (spouse, relative or friend) and adaptations at home, dialysis can be undertaken. It provides an opportunity for those in full employment, or those travelling long distances, to dialyse in the evenings and/or at weekends. The patient therefore has more control of his/her treatment and has more independence.

### What about transplantation?

Kidney transplantation is an option for many but not for all. The possibility of transplantation will be discussed with you.

If you wish to proceed, a meeting is then arranged to see the transplant surgeon and coordinator from the centre where the transplant will eventually take place. This meeting allows the transplant surgeon to assess you and also inform you of the procedure, as well as the pros and cons

#### KEY POINTS

- Haemodialysis removes waste products and extra fluid, which build up in the blood when the kidneys are no longer able to function properly.
- One advantage of haemodialysis is that it takes place up to three times a week, therefore the intervening days allow a certain amount of freedom when normal daily activities can take place.
- Assessment of dietary intake is monitored from time to time to ensure an adequate protein and calorie intake, which is an important part of maintaining a good quality of life.
- As with your dialysis treatment, your suitability for transplantation will be reviewed regularly.
- Remember: you control the dialysis, it does not control you.

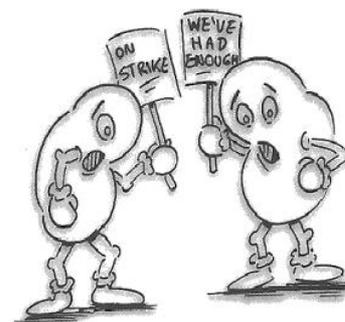
of transplantation and the possible likelihood of a live related or non-related donor. This information is reinforced by the transplant coordinator who will also invite you along to the transplant centre to enable you to familiarise

yourself with the surroundings and meet a patient who has had a transplant. As with your dialysis treatment, your suitability for transplantation will be reviewed regularly.



There are obvious advantages to having a kidney transplant since haemodialysis is no longer required and many associated problems disappear - for example, dietary restrictions, fluid overload and the overall feeling of being unwell. However, kidney transplants do not come with guarantees and might fail after a period of time. In those that do, dialysis is recommenced.

Where transplantation fails or is not an option, haemodialysis provides a safe and effective form of treatment. It is not all doom and gloom. Although there are restrictions, it is hoped that the problems that lie ahead may be overcome with the support of family, friends, and medical, nursing and unit staff.



Developing a positive attitude while adjusting to the new situation will enable you to lead a fulfilling life. You control the dialysis; it does not control you.

If you would like additional copies of this patient information feature, they are available from:



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