

Kidney Health Information

Continuous Ambulatory Peritoneal Dialysis

What is peritoneal dialysis?

The principal role of the kidneys is the filtration and removal of waste products and excess fluid from the blood. Dialysis is a way of replacing kidney function in people whose kidneys have failed. There are two main forms of dialysis: in haemodialysis, blood is taken from the patient's circulation, passed through an artificial kidney, and returned to the patient; in peritoneal dialysis, the internal lining of the abdomen acts as the artificial kidney.

The abdomen is lined by a thin membrane called the peritoneum, which has a rich supply of tiny blood vessels (capillaries). If the peritoneal membrane is bathed in fluid, waste products can pass from the capillary blood vessels into that fluid, which removes them from the blood. During peritoneal dialysis, fluid is drained into the peritoneal cavity, allowed to sit there for several hours whilst it absorbs waste products, and then drained out. This process, repeated several times a day, can effectively replace kidney function and – because it is a continuous process which allows you to carry on with normal activities – it is known as continuous ambulatory peritoneal dialysis (CAPD).

How does CAPD work?

A permanent soft flexible plastic tube (catheter) is inserted in the abdomen under local or general anaesthetic. You may be required to stay in hospital for 24–48 hours following this procedure and may have some dialysis during your stay. About a week to ten days after your discharge, a nurse will take out your stitches and you will be shown how to keep the area around your catheter (known as the “exit site”) clean and how to put on a new dressing. The exit site dressing will need to be changed regularly. Two or three weeks later, the catheter will be ready for use and CAPD can commence.

One to three litres of dialysis fluid are run via the catheter into the peritoneal cavity (Figure 1), and remain in the cavity for several hours before being drained out into an empty bag by gravity. This is called an exchange procedure. The waste products normally removed by the kidney are contained in the drained fluid, which is disposed of into the toilet.

A new bag of fluid is then drained into the peritoneal cavity. The exchange procedure is usually performed four times a day, every day, and takes about 30–45 minutes.

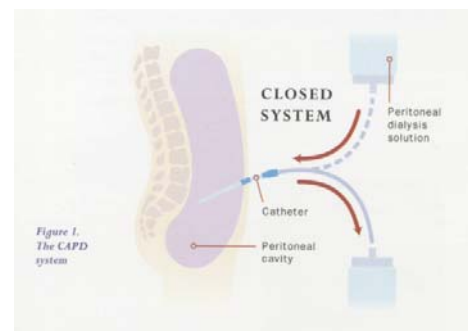


Figure 1. The CAPD system

Can I do CAPD myself?

Yes. You will be taught how to perform the exchange procedure and how to cope with any problems. The training usually takes several days, during

which the nurse will use a variety of teaching aids which may include videos, computer programs and practice equipment. Information will be available in some foreign languages if needed, and teaching material has also been adapted for blind or disabled patients.

How will I feel?

It is sometimes difficult to cope with learning that you need dialysis and getting to grips with CAPD, which can appear complicated and time-consuming.

The changes can play havoc with your situation at home and at work, as well as with your emotions. Initially, as well as feeling physically unwell, many patients feel bad tempered, depressed, angry or frightened. Try not to bottle up your feelings; it is better for your peace of mind to talk to someone about what is happening. Finding out more about your condition and treatment can relieve fears too, and sharing your feelings may help. You will be visited at home by a Community Dialysis Sister who is there to listen to your worries as well as to help you with the practical side of dialysis. You can also talk to your doctor or nurse at the CAPD clinic.

Are there any problems with CAPD?

The most common complication is infection (peritonitis or infection of the exit site). It is important to try to avoid infection by following the exchange

procedure and exit site care as it is taught to you during your CAPD training. If these problems occur, you *must* contact the CAPD unit straightaway. The sooner the infection is treated, the less likely it is to affect your CAPD or require your admission to hospital.

Where will I do it at home?

You do not need a special room at home for CAPD, although it must be done in a clean environment. A lot of patients use their own bedrooms, although you will need to wash your hands before you do an exchange so it is better if your room is located near the bathroom or a wash basin. There should not be people passing through the room at the time of doing the exchange and all windows should be closed and your pets kept out.

Do I need to provide any equipment?

You will require the following:

- Surface for exchange procedure, which can be wet wiped – for example, melamine board or drawers, tea trolley, plastic tray/table
- Hook for hanging dialysis fluid bag
- Bathroom scales
- Bucket to place empty bag in, for draining out

What about supplies for dialysis fluid?

All the dialysis fluid, lines and equipment for exit site care and washing your hands will be delivered to your home every month. You will be taught how to work out what you need to order. This procedure is very simple. You will know in advance when the supplies are to be delivered so that you can make arrangements if you will not be at home.

Where will I store my supplies?

Supplies can be stored almost anywhere – in your bedroom, under the stairs, in cupboards, in the cellar, in the garage, etc.

Can I work while on CAPD?

CAPD patients are encouraged, if fit, to return to work. Those needing to do an exchange at lunch time will be given advice on how this can be achieved in a work situation. A member of the community nursing team will give your employer some information about dialysis and, if necessary, visit your place of work to discuss CAPD and offer advice. Most employers are very helpful and will allow extra time off or provide a suitable room in which to do an exchange. Heavy lifting is not permitted while on CAPD, so it may be necessary for you to do lighter duties if your work entails this.

Can I go on holiday?

The CAPD motto is “have bag, will travel!” – holidays and days out are definitely encouraged. An exchange can be performed in any clean location,

so that you can visit your family and friends and go on holiday. Your boxes of dialysis fluid can be delivered to your holiday destination, almost anywhere in the world, but some advance notice (1–3 months) will be required. You will be given some information booklets about holidays, and the dialysis administrator and your community nurse will help you order your supplies and advise on travel arrangements.

Will I need a special diet?

CAPD patients are allowed a fairly liberal diet. With CAPD, valuable proteins are lost in the fluid at each exchange, and these need to be replaced.

Proteins are responsible for growth, building muscles and repairing tissues and you will be encouraged to eat high-quality protein such as meat, poultry, fish and eggs.

- **Salt** may be restricted as too much of it can make high blood pressure worse, and cause thirst and fluid retention. Salt at the table should be avoided and processed foods should be used sparingly.
- Foods containing **potassium** – such as bananas, oranges and chocolates – are allowed in moderation.
- **Phosphorous** builds up in the body in renal failure and can cause bone problems. Phosphorous is a mineral found in milk, cheese, liver, nuts and protein foods, but some of these foods are encouraged, so it is impossible to eliminate phosphorus entirely.

Phosphate-binding medications may therefore be necessary for you to take with your meals if the phosphate level in your blood remains high.

If constipation occurs, it can affect your CAPD. You should include high-fibre foods in your diet such as bran, cereals and fresh fruit and vegetables. Fluid restriction may become necessary to maintain good fluid balance – the amount taken in must not exceed the amount put out in the form of urine and dialysis. The less urine you pass, the less fluid is usually allowed in your diet. Excess fluid in the body can cause heart problems and high blood pressure. The renal dietitian will advise you about diet at your clinic visits.

What medicine will I need to take?

Most patients on CAPD will need to take some of the following:

- Vitamins
- Iron
- Erythropoetin (EPO) by injection
- Phosphate binder (e.g. Calcichew)
- Blood pressure medications
- Insulin, if you have diabetes

It is important to take your medication as prescribed.

Will CAPD affect my family?

While you are coping with CAPD, your family will be experiencing changes as well. You may require some support in the early stages of treatment until CAPD is established and you are feeling physically better and more able to adapt to the routine of exchanges. Although some changes have to take place, it is important that family life goes on as before.

What about my sex life?

With changes in health and lifestyle it is sometimes difficult to find energy for a satisfactory sexual relationship with your partner. This can cause tension and a feeling that you are not as close as before. Many factors – physical and psychological – can contribute towards lowering sexual drive, these include tiredness, depression, medications and kidney-related conditions. Discuss these problems with your doctor or nurse so that the appropriate help can be given. It is important to maintain a close relationship with your partner.

Who will look after me at home?

A large team will support you at home, including your GP, District Nurse, home help/carers and, of course, your family. You will also attend clinics at the hospital at least every 3–4 months.

How long will I be on CAPD?

Once your kidneys have failed you will need dialysis indefinitely, unless you have a kidney transplant (you can discuss your eligibility for this with your

doctor at the clinic). Patients have been successfully managed on CAPD for over ten years. Most units can also offer peritoneal dialysis by machine if you need to increase the amount of dialysis you receive or if your home and work circumstances warrant this type of treatment.

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