

What is CAPD?

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CAPD, (Continuous Ambulatory Peritoneal Dialysis), is a way of artificially removing the waste fluid and poisons from the body by using your own abdominal membrane as a filter. The treatment involves putting special dialysis fluid into this cavity, usually four times per day every day. It is a painless procedure that we would teach you to do in your own home, car, workplace or on holiday. Each treatment takes about 30 minutes.



How does CAPD work?

CAPD works continuously (24 hours a day) removing the waste products and fluid from your body. It is working all the time you are up and about (ambulatory). It uses the lining of your peritoneal cavity called the peritoneum. This acts rather like a sieve and allows the poisons to pass out. The fluid contains glucose, which filters poisons from your blood into the fluid. The fluid is then drained out with the poisons. The scientific description for this process is osmosis and diffusion. Dialysis is the cleansing of the poisonous waste from your body.

How is CAPD carried out?

A simple operation is performed to insert a soft tube called a *Tenckhoff catheter* into your abdomen. Through this catheter, a dialysis solution is instilled. The dialysis is performed by attaching tubing to the catheter, which has two bags - a full bag of dialysis fluid, and an empty bag to drain into. You drain out the old dialysis fluid with all the poisons in it and then refill the new solution straight afterwards. This means you will always have fluid inside your abdomen, cleaning the poisons. It stays there for approximately 4–6 hours during the day and 8–10 hours overnight. Whilst you have the fluid inside you the dialysis is taking place. You will not be able to feel the fluid when you walk or run and it should not feel uncomfortable. The fluid removed should look like clear, diluted urine. This fluid is sterile and odourless.

What is APD?

APD stands for Automated Peritoneal Dialysis and uses the same Tenckhoff catheter. A small machine, the size of a suitcase, is programmed to do the dialysis overnight whilst you are asleep, which frees the day for you. The majority of patients are able to use this type of dialysis; however some may not have the right sort of membrane to keep well on

APD. We will know by the tests that we do on all patients about six weeks after starting dialysis to ensure that the best type of dialysis is used for you. We are often able to programme the machine to make APD work for most patients. This sometimes becomes more difficult if your kidneys stop making any urine. You may need to switch back to CAPD. If this is your preferred treatment we would ask you do CAPD first for about 6 weeks so that you get used to how the fluid feels and you know how to do CAPD if the machine ever goes wrong.

How is the Tenckhoff catheter put in?

X-ray insertion – This procedure is performed under local anaesthetic. This means you will be awake throughout, but if you are at all anxious, a mild sedative can be used to make you sleepy and relaxed. Local anaesthetic is used to freeze the skin on the abdomen and then using x-rays for guidance, the tube is passed into the peritoneal cavity through a very small cut (about 1cm) in the middle of your abdomen just below your tummy button. The whole procedure takes about one hour. Some patients, however, are not suitable for this procedure, particularly if they have had any previous surgery to their abdomen. In these cases the catheter is placed by a surgeon in the operating theatre, under general anaesthetic.

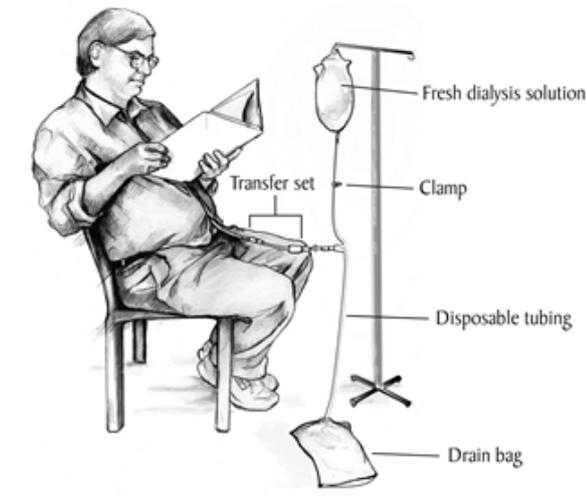
Surgical insertion – The operation to put the catheter in is performed under a general anaesthetic, which means you will be asleep. A small cut (about 5cm) is made below your tummy button and then the catheter is brought out onto the skin away from the initial cut to avoid infections.

However the catheter is inserted, it is held firmly in place by two small cuffs inside your abdomen. You may be able to go home on the day of the procedure depending what time your procedure is. Your tummy may feel a little sore for a few days after the tube has been inserted; you will be advised about taking painkillers for the discomfort, which will quickly settle. In most cases the catheter is left for 7–14 days to allow it to settle before it is used. You will be asked to come back during that time for us to change the dressing and check how you are and how your blood tests are. During this time your supply of dialysis fluid will be delivered to your home.

Exit site care

The “exit site” refers to where the catheter comes away from your body. The area around the catheter must be kept clean and dry at all times. General hygiene is very important and we encourage daily showers once the exit site has healed (you will be advised on this). A daily bath is fine as long as the exit site is not immersed in water whilst washing. The line and the exit site can be showered or splashed but never soaked as the natural skin flora and dirt from washing may infect the exit site. Some people prefer to keep their exit site covered for comfort but once healed, there is no need to as long as the line is anchored and not pulling.

Starting CAPD



When you need to start learning how to carry out the CAPD, we will ask you to come to the hospital as an outpatient for about a week. We will arrange the best times with you, but it is usually for about four hours per day. Training will last for as long as you and the nurses feel that it needs to, until you are happy and confident to begin at home. During your training, the dialysis exchanges will be performed on a “training apron” (pretend dialysis catheter) to allow you to get lots of practice.

The bag changes (dialysis exchanges) can be performed almost anywhere but you must stick to the rules of hygiene and ensure your health and safety. These will be taught to you during your training. If you space your four exchanges sensibly throughout the day, you can find the most convenient times for you, e.g. a bag change can be done in the morning, then at lunchtime, then in the late afternoon, perhaps following work, then before you go to bed. As long as these are not all squeezed together, you can be fairly flexible with the timing and do them to suit your day. You will find that as your poison levels in your blood reduce on CAPD you will gradually feel better in yourself. It is important to try and regain your former lifestyle as soon as possible and not to let your treatment interfere or restrict more than it has to.

Treatment management

When you have finished your dialysis the old fluid is drained out down the toilet and the empty bags are put into a clinical waste (orange) rubbish bag. We arrange for the council to collect them weekly from your home.

Supplies of dialysis fluid are delivered to your home usually once a month. One delivery is about forty boxes, which must not be stored more than five boxes high. They can be kept in a shed or garage, in a spare room or in several different rooms but they must not get wet or freeze. You will know when a delivery is coming and the delivery driver will put the boxes wherever you want them - even upstairs. If you use a bedroom to store CAPD fluid in then you will be entitled to a rebate in your council tax.

It is important to ensure that your dialysis fluid is warmed to body temperature before the fluid is put into you. We will provide you with a warmer to do this. You should never use a microwave oven or immerse the bags in any hot water to warm the fluid.

Possible side effects of CAPD

CAPD is a very gentle form of dialysis so you are unlikely to feel any different before, during or after your dialysis exchanges.

Over time, it is possible that your weight may increase. This may be because the dialysis fluid contains glucose, which you absorb into the body, you may be eating better or it may

be fluid retention. If this does become a problem we will discuss this with you and the dietitian.

As you will have two litres inside your abdominal cavity you may notice that your waist measurement is a little larger than before. This may settle once your tummy muscles get used to having the fluid inside, but some people do find they need a larger waist size in clothes.

Possible complications

One of the main complications of this form of dialysis is peritonitis. This is an infection of the peritoneum (the lining of your tummy), usually caused by a poor technique when doing your dialysis. No matter how clean your hands are, never take short cuts. Peritonitis is usually treated by injecting antibiotics into the new bags of fluid.

Holidays

If you have the opportunity to go away we would encourage you to do so. Many CAPD patients have travelled all over the world, but we do need consultant approval, to ensure you are fit to travel before booking. We need some warning to allow the fluid to be delivered to your destination before you arrive whether it's to friends or relatives, hotel, campsite or cruise ship. The nurses will be able to advise you of timescale for deliveries, hints and tips for travelling. It is essential that you have at least a six-month valid passport before we can make arrangements for the fluid to be delivered abroad.

Taking care of yourself

Fluid balance - A major factor in the successful use of CAPD is one of weight and fluid balance. During your CAPD training this will be fully explained. You will be given an ideal weight to aim for which will be called your dry weight. At this weight your blood pressure is well controlled, there is no swelling (oedema) of your ankles and no feeling of breathlessness.

You will be advised to weigh yourself daily, ideally having drained out the fluid but before you put the new fluid back in. This is your dry weight. From this you will know if you need to continue using the same bags, or slightly weaker or stronger ones. There are three main types of bags used in CAPD - strong, medium and weak. The strong bags have more glucose in and will, therefore remove more fluid over the peritoneal membrane. The weaker bags have less glucose and so remove less fluid. Most people need to use a combination of bags, so this will be discussed with you during your training, as it is very individual. It is important not to use too many strong bags as this may eventually cause damage to the peritoneum and cause weight gain. As a general rule most people on CAPD are able to drink one litre of fluid a day (this includes milk on cereal, gravy, custard, ice cream and lollies etc). If you continue to pass some urine then you may be able to drink a little more.

Diet and CAPD

It is important to consider your diet when you require dialysis in order to stay healthy. Some aspects of the diet are outlined below but during CAPD training you will also have the opportunity to see the dietitian who will advise you on the right diet for you.

Protein

Protein is required to keep your cells and tissues healthy and to help to fight off infections. During dialysis some of your protein will be lost into the dialysis bag. It is therefore necessary to eat enough protein-rich foods to replace these losses. Some examples of high protein foods are meat, fish and eggs. The dietitian will advise you how much protein you need in your diet. If you are a vegetarian or vegan, the dietitian will also advise on alternative ways of having a high protein diet.

Salt (sodium) and fluid

Your kidneys, together with dialysis, are responsible for removing excess fluid from your body. 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.

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 that you may need to limit include cheese, milk, yoghurt, ice cream, certain fish, other seafood and nuts. The dietitian can advise you on this.

The doctor may prescribe some tablets for you called 'phosphate binders' (e.g. *Calcichew* or *Renagef*). These should be taken just before a meal and they help by preventing some of the phosphate in the food from being absorbed into the blood.

Potassium

Potassium is a mineral that is found in a wide range of foods and drinks. CAPD is very good at removing excess potassium from the blood and so it is unlikely that any dietary manipulation will be necessary. (A limit on the amount of potassium in the diet is often necessary for people on haemodialysis.)

Fibre

A healthy diet that includes some high fibre foods is recommended to avoid constipation. Good examples are wholemeal bread, brown rice, and fruits and vegetables.

Exercise

This is very individual and depends on your physical condition. If you exercise now, please continue once on dialysis. Golf, tennis, squash, swimming and walking are all excellent forms of exercise. Swimming is fine if your catheter is well healed and covered in a waterproof dressing. We would only recommend swimming in a chlorinated swimming pool. Weight lifting or strenuous games such as rugby must be avoided due to the possibility of hernias, so do take advice from one of the renal nurses or doctors.

And finally...

We hope that this information has been helpful and that it may assist you in seeing that you can make the most of your life on dialysis. Whilst CAPD is a treatment that you are in charge of in your own environment you are never more than a phone call away from help, advice and support.

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

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