

DIALYSIS

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Dialysis

What is dialysis?

To understand dialysis, you need to know about the kidneys and what they do. The kidneys are organs located in the back of your body, just below your ribs. They look like beans and are about the size of a fist. Most people are born with two kidneys, one on each side, but people can live normally with one.

The kidneys do many good things for the body. The main job of the kidneys is to filter the body's blood supply to remove extra water, salt and the waste products left over after the body uses the energy it needs to live. The extra fluid and waste leave the body when you urinate.

Since the body is made up mostly of water, the kidneys make sure there is the right balance of fluid for the body to stay healthy. The kidneys also control blood pressure, maintain the levels of certain chemicals in the blood and make hormones necessary for the body to function correctly.

Each kidney contains about one million tiny structures, called nephrons, along with a series of collecting tubes. This is where the filtering takes place. Sometimes the nephrons start to lose their ability to filter blood. This is most often caused by conditions such as diabetes, high blood pressure, and obesity. These conditions make the kidneys work extra hard, and they start to break down. Most often, damage to the kidneys happens slowly over a period of time.

When the kidneys do not work, the blood must be filtered another way. This is done using a treatment called dialysis. Dialysis does what the kidneys are no longer able to do. There are different types of dialysis. They differ in the way the filtering is done. The main methods of dialysis are hemodialysis and peritoneal dialysis. You and your doctor will discuss which type of dialysis is best for you.

What is hemodialysis?

During hemodialysis, a machine with a special filter (called a dialyzer) is used to clean the blood. The filter is sometimes called an "artificial kidney." The blood flows from the body into the dialyzer where the filtering takes place, and then the clean blood returns to the body. The blood

leaves and returns through a small opening called an access. The access is made by your doctor during a minor procedure and stays in place between treatments. During treatment, needles are placed into the access to allow the blood to flow in and out.

There are different types of access:

Fistula: This is the most common. To make a fistula, the doctor links an artery directly to a vein, usually in the arm. This allows for more blood to flow into the vein. A fistula can take several months to be ready to use.

Graft: If your veins are small or the fistula doesn't develop properly, the doctor can place a soft hollow tube under your skin to link the artery and vein. A graft is ready to use as soon as the surgical swelling goes down, usually within a week or two.

Venous catheter: Sometimes it is necessary to begin dialysis before the fistula or graft is ready. In these cases, the doctor can place a hollow tube into a larger vein, usually on your neck or shoulder. This access is usually temporary, used until a permanent access is developed.

You will be taught how to care for your access.

Hemodialysis can be done in a hospital or in a dialysis clinic. The time it takes for this type of dialysis depends on factors such as how damaged your kidneys are, how big you are, how much extra fluid you have in your body, and the type of machine being used. In most cases, treatments last about four hours and are done three times a week. You will also follow a special diet.

What will I feel during dialysis?

The dialysis treatment itself is painless, but you might feel a bit of discomfort when the needles are inserted. You might also feel dizzy or get a headache, stomach ache or cramps. These usually go away after the first few treatments. Some people feel sad or depressed due to the change in lifestyle. If you are bothered by any of these, tell your doctor or nurse.

How will I feel after dialysis?

Healthy kidneys are at work all day long, so you don't feel anything happening. When you have dialysis, extra water and waste builds up between treatments. It takes time for the dialysis machine to clean the blood, and this puts a strain on your body. Because of this, most people feel tired after treatment.

What is peritoneal dialysis? How is it different?

Peritoneal dialysis is different because the blood is filtered inside the body, but not through the kidneys.

Peritoneal dialysis enables you to have more freedom because you do not have to go to a dialysis center. You can do this yourself at home and even at work. There are two types of this kind of dialysis: continuous ambulatory peritoneal dialysis (CAPD) and continuous cycling peritoneal dialysis (CCPD).

Continuous ambulatory dialysis: During CAPD, a special fluid, called dialysate, is pumped into the space in your belly – called the

peritoneal cavity – through a small opening using a soft tube called a catheter. The dialysate is able to remove the waste products through the blood vessels that line the cavity. The water and wastes are removed when you drain the solution from your body.

The process of filling and emptying the fluid is called an exchange. It usually takes about 30 to 40 minutes to complete. The PD fluid dwells within the abdomen for several hours during an exchange. How often you must do this depends on your condition, but it is generally done four times a day. CAPD does not use a machine, so you can walk around while you are having the treatment.

Continuous cycling peritoneal dialysis: CCPD still uses a machine, called a cyclor, which fills and drains the solution from your body. The benefit of this type of dialysis is that you can do it while you are sleeping, which frees up your day for school or work. You usually do CCPD for six to eight hours 5 to 7 times a week.

Can dialysis cure kidney disease?

No. If you have very serious kidney disease, you will need to stay on dialysis for the rest of your life. If you want to, and your doctor feels you are a candidate, you can choose to have a kidney transplant. During a transplant, a healthy kidney from a donor is placed in your body. The new kidney works just like your own kidney.

What's the outlook?

Most people on dialysis can work and lead normal lives, as long as they continue to have dialysis. The biggest change is getting used to the dialysis schedule.

People on dialysis can also travel, as long as they are prepared. If you are on peritoneal dialysis, you need to take plenty of supplies, dialysis fluid and your cyclor or make arrangements to have your PD supplies delivered to your travel destination. If you are on hemodialysis, you need to call at least six weeks ahead and make an appointment at a dialysis center near your destination. Your nurse or technician can tell you ways to find dialysis centers in other cities.

In some cases, if acute kidney failure is caused by a poison, certain medications, or an injury, normal kidney function might return. Dialysis will no longer be needed.

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