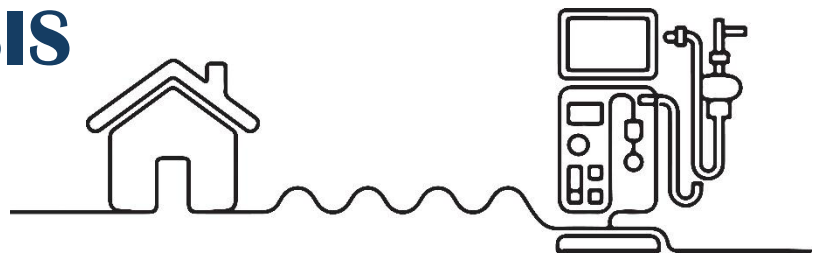




JULY NEWSLETTER

HOME DIALYSIS



What Is Dialysis?

Healthy kidneys keep a balance of water and chemicals in your blood all the time.
(We call this balance homeostasis.)

To do this, they:

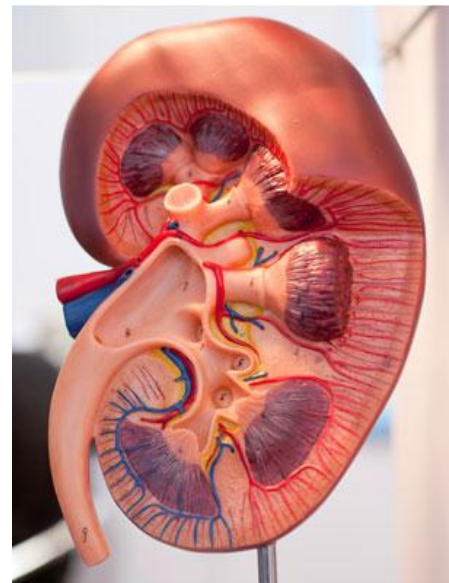
- Filter out water and wastes
- Control blood pressure
- Make hormones

Just 50 years ago, if you had chronic kidney disease and your kidneys failed, you would have died.

There was **no** treatment that could save your life.

Now there are two: kidney transplant and dialysis.

Dialysis is a treatment that can clean the blood. A filter is used to remove wastes. A membrane (thin layer of tissue) keeps blood separate from a special fluid called dialysate. The membrane has tiny pores in it that let wastes and water out. Protein and other large cells your body needs to keep are too big to fit through the pores.





How Dialysis Removes Wastes

Dialysis uses a principle called diffusion to clean wastes out of the blood. Here's how it works. Dialysate is made of clean water and small amounts of the wastes that need to be removed. Your blood has much more of these wastes than the dialysate does. This difference is called a gradient. The gradient causes the wastes to move through the membrane. The movement goes on until the levels on both sides of the membrane are the same. You use diffusion each time you make coffee or tea. The coffee or tea diffuses into the hot water.



How Dialysis Removes Water

Water is removed in dialysis in one of two ways:

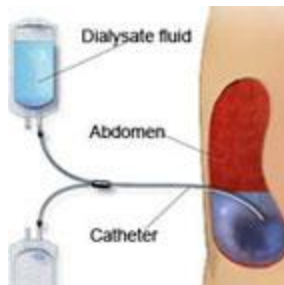
Osmosis:

When the level of wastes on both sides of a membrane differs, water will move through until both sides are the same. So, we add sugar or other chemicals to the dialysate. This forces water to move out of the blood.

Ultrafiltration:

Pressure from a pump pulls water out of the blood.

There Are Two Main Ways To Do Dialysis: Peritoneal Dialysis and Hemodialysis



Peritoneal Dialysis (PD)

Hemodialysis (HD)

What is the membrane?	
Your <i>peritoneum</i> , a membrane that lines your inner belly. Its millions of capillary blood vessels act as a filter.	A plastic dialyzer filled with hollow fibers. Each fiber is a membrane with tiny pores that filters your blood.
How does this treatment work?	
You fill your belly with sterile dialysate fluid. Wastes and water flow out of blood vessels in the peritoneum and into the fluid. After a few hours, you drain out the used fluid and put fresh fluid in. This is a PD <i>exchange</i> .	Your blood goes through the insides of the hollow dialyzer fibers. Dialysate flows around the outside of the fibers. Wastes and water pass through pores in the fibers and into the dialysate. The used dialysate is sent to a drain.
What is in the dialysate?	
PD dialysate has sugar (dextrose) to help pull water out of your blood. It is made with sterile water, since it goes in your belly. And, it has a buffer so it should not irritate your belly.	HD dialysate only touches your blood through the pores in the dialyzer. So, it is made with clean, or maybe "ultrapure" (very clean) water, but is not sterile. Besides treated water, HD dialysate has minerals like sodium, magnesium, potassium, and calcium. There may be some glucose. And bicarbonate is added as a buffer.
When do I do this treatment?	
With PD, your blood is cleaned each day. You can do exchanges by hand 4 times a day (around meals and bedtime). Each takes 30 minutes or so. You can do other things while you wait. Most people use a cycler machine to do exchanges at night while they sleep.	The more HD you get, the better you may feel and the longer you may live. The most HD you can get is nocturnal treatments—8 hours at night (while you sleep) 3 to 6 nights a week. Daily HD is 2.5–4 hour treatments 5 or 6 days a week. Standard HD is done only 3 times a week for 3–4 hours.
How does blood get to the membrane?	
A surgeon places a soft, plastic tube about the size of a drinking straw through the wall of your belly or chest. A nurse will teach you to use this PD <i>catheter</i> to fill your belly with dialysate. When you are not using it for PD, you can keep it in place with a soft, cotton belt.	You need a <i>vascular access</i> (way to reach your blood). The best ways (<i>fistula</i> or <i>graft</i>) use your own blood vessels. Needles are placed in the access and connected to tubes to bring blood to the dialyzer. Or, you'll get a catheter—a tube in your neck or chest that goes into your heart. HD catheters have a high rate of infection that can be fatal.

Where can I do this treatment?	
You can do PD in any place you can make clean. You can use a room at home, at work, in a hotel, or a car, boat, or camper. You'll learn to wipe down all surfaces, close air vents, wash hands, and wear a face mask and gloves. You don't want germs in your belly.	You can do HD in your own home or in a dialysis clinic. If you use a small, more portable machine, you can take it on trips in a car, on a plane, or in a boat or camper. If you use a large machine, you will have to set up treatments at a clinic to travel.
Does dialysis hurt?	
PD should not hurt. It can take a few days to get used to a belly full of fluid. Some people have pain when they put fluid in, and need more buffer. This tends to get better in time. With a cycler, some people have "drain pain." Leaving a bit of fluid in the belly (called Tidal PD) or moving the catheter can help a lot.	HD should not hurt. You can get numbing cream for the needles. The treatments should not hurt, but you may feel cold, since your blood goes out of your body. With standard HD treatments three times a week, problems like painful muscle cramps, headaches, feeling sick to your stomach, or being dizzy are much more common. These are very rare when you get more HD.



Information provided by :



A program of the non-profit —mexi—

Check out their website for more information!

<https://homedialysis.org/>



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