

# Hemodialysis

When your kidneys do not work well, dialysis is needed to remove extra fluid and waste products from the body. Hemodialysis is a type of dialysis that uses a machine with an artificial filter to remove wastes and extra fluids from the blood. This treatment also helps control the chemical balance in your body and helps control blood pressure. Each treatment takes about 4 hours and is done 3 times each week.

## How does hemodialysis work?

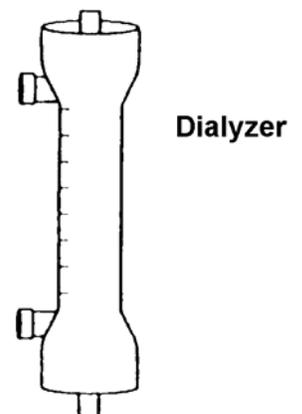
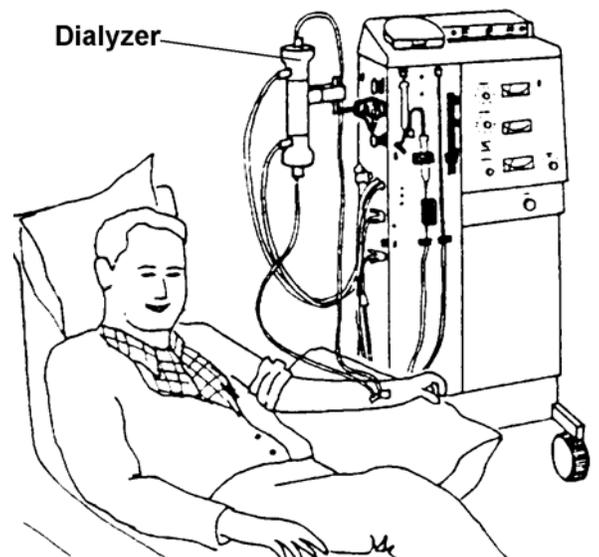
A dialysis machine pumps small amounts of blood out of the body and through a filter called an artificial kidney or **dialyzer**. This kidney filters extra fluid and wastes from the blood. The blood is then pumped back into your body. Medicine will be given to you to prevent your blood from clotting.

Fluid, called **dialysate**, is added to the dialysis machine to:

- Help filter out extra fluid and wastes that have built up
- Add chemicals that your body uses

The dialysate is a mixture of water and chemicals that are present in your blood. This fluid can be adjusted, based on your lab values, to give you the best filtering with fewer side effects.

For your safety, the machine has pumps, sensors, monitors and alarms to let the staff know if there is any problem.



## **Access Site**

For this treatment, there needs to be a site where the blood is taken out of the body and then returned to the blood stream. This is called an **access**. After the access is made and healed, 2 needles connected to tubing are inserted into the access. One needle draws a small volume of blood out and pumps it through to the dialysis machine and filter. After the blood is filtered, it is return to the body through the other needle.

There are three main types of access sites:

- **Fistula** – With minor surgery, an artery in the arm is joined to a vein under the skin. This increases the amount of blood that flows through the vein, and makes it bigger. This is the best access because it has fewer complications and lasts longer.
- **Graft** – With minor surgery a soft plastic tube is used to join the artery and vein under the skin. This is done when a fistula is not the best method for your care. A graft needs at least 2 weeks to heal before it can be used for dialysis.
- **A catheter** – There are two kinds of catheters, temporary and permanent. The temporary catheter is used for 1 to 2 weeks. This catheter is used until a more permanent access is placed. A permanent catheter is placed in the neck vein and tunneled under the skin. The catheter has a risk for infection and is used only until a fistula or graft can be placed.

Both the fistula and graft need 2 to 6 weeks to heal and mature before they are able to be used.

## **Side Effects of Hemodialysis**

During treatment you may:

- Feel tired and sleepy
- Feel dizzy
- Be cold
- Have muscle cramps
- Have nausea

Let the staff know how you are feeling so that they can help you be more comfortable. After dialysis, it is normal to feel tired so plan to rest.

## **Other Care**

- You will feel changes in your body as the waste and fluids build up between treatments.
- Follow your diet and fluid restrictions to limit severe changes between treatments.
- The human kidney makes a hormone called erythropoietin. This hormone is needed to produce red blood cells and vitamin D. Without it, your body cannot absorb calcium from foods and your bones can become weak. Medicine can be given to help replace this hormone.
- The human kidney also helps control blood pressure and salt balance in your body. It is common to be on medicines to treat high blood pressure.

**Talk to the staff if you have any questions or concerns.**