**How Does a Kidney Machine Work?**

Your kidney helps to filter wastes, poison, and excess fluids from your body. They’re also important for the production of blood cells and the healthiness of your bones. If your kidney can’t work properly, dangerous substances will accumulate in the body, your blood pressure may increase, and too much fluid in your body will cause lumps, called edema, to appear on your body. If your kidney suffers a failure, you’ll need a kidney machine, named dialysis, which is used to replace your failed kidney, in order to take over its work.

The way the kidney machine works is as follows: The patient's blood is pumped through the blood compartment of a dialyzer, exposing it to a partially permeable membrane. The dialyzer is composed of thousands of tiny synthetic hollow fibers. The fiber wall acts as the semipermeable membrane. Blood flows through the fibers, dialysis solution flows around the outside of the fibers, and water and wastes move between these two solutions.

The cleansed blood is then returned via the circuit back to the body. Ultrafiltration occurs by increasing the hydrostatic pressure across the dialyzer membrane. This usually is done by applying a negative pressure to the dialysate compartment of the dialyzer. This pressure gradient causes water and dissolved solutes to move from blood to dialysate, and allows the removal of several liters of excess fluid during a typical 3-5 hours of treatment.