

CHRONIC KIDNEY DISEASE

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In order to understand what chronic kidney disease is, it is important to first understand what the kidneys do. The kidneys are two bean-shaped organs performing many functions to keep your blood clean and chemically balanced. Located near the middle of the back, just below the rib cage, they measure about the size of a fist.

Healthy kidneys process about 200 quarts of blood every day to sift out approximately 2 quarts of waste products and extra water. Eventually, the waste and extra water becomes urine, which flows to the bladder through tubes called ureters. The waste in your blood comes from normal breakdown of active muscles and the foods you eat. After the food is ingested, it is broken down into small particles by the stomach and small intestines. The digested food is absorbed by the blood flowing through the vessels around the intestine and is then eventually distributed to different organs. The waste product is partly the result of end products of different cells, particularly muscles, using the digested food delivered by the blood. If the kidneys did not remove this waste, it would build up in the blood and damage the body.

The kidneys also maintain adequate levels of chemicals like sodium, potassium, phosphorus, calcium, and uric acid. Some of the chemicals are excreted or returned back to the blood depending on the blood level. The right balance is necessary for life, but excess or low levels can be harmful. It also excretes partly or completely many commonly prescribed or over-the-counter medications.

In addition to the above, the kidneys release three important hormones:

- Erythropoietin for stimulating the bone marrow to make red blood cells
- Renin to regulate blood pressure
- Active form of vitamin D to help maintain calcium for bones and for normal calcium balance in the body.

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