

Your kidneys are as important to your health as your heart or lungs. Their main job is to remove waste products from your body. Normally there are two kidneys, one on either side of your spine under the lower ribs. They are reddish brown in colour and shaped like kidney beans. Each kidney is about the size of a clenched fist.

One litre of blood is cleaned every minute

The main job of the kidneys is to remove waste from the blood and return the cleaned blood back to the body. Each minute about one litre of blood – one-fifth of all the blood pumped by the heart – enters the kidneys through the renal arteries. After the blood is cleaned, it flows back into the body through the renal veins.

A special filter system

Each kidney contains about one million tiny units called nephrons. Each nephron is made up of a very small filter, called a glomerulus that is attached to a tubule. As blood passes through the nephron, fluid and waste products are filtered out. Much of the fluid is then returned to the blood, while the waste products are concentrated in any extra fluid as urine (wee).

The urine flows through a tube called the ureter into the bladder. Urine passes from the bladder out of the body through a tube called the urethra. The kidney usually makes one to two litres of urine every day depending on your build, how much you drink, the temperature and the amount of exercise you do.

A healthy kidney can greatly increase its work capacity. If one kidney is lost, the other kidney can enlarge and do the work of two.

Kidneys maintain the balance

Kidneys also:

- Make and regulate important hormones in the body that help to control blood pressure, red blood cell production and calcium uptake from the intestine
- Maintain body fluid at the correct levels for the body to function
- Control body chemistry by regulating the amount of salt, water and other chemicals moving around the body.

When your kidneys are working properly, excess minerals and waste products leave the body in urine. Sodium (salt) and potassium are minerals that come from food. The body needs these minerals to maintain good health but they must be kept at the correct level. The kidneys also help regulate the levels of other minerals such as calcium and phosphate, which are important in the formation of bone.

Many waste products are toxic if they are not removed from the body. Urea and other waste products are made when the body breaks down protein. Creatinine is a waste product made by the muscles. Healthy kidneys take creatinine out of the blood and put it into the urine to leave the body. When kidneys are not working well, creatinine builds up in the blood.

Measuring kidney function

It is difficult to calculate the exact rate at which your kidneys work. The best measure of kidney function is called the 'estimated glomerular filtration rate' (eGFR). This formula uses the level of creatinine in your blood to estimate how well your kidneys are filtering waste from your blood. It can indicate if there is any kidney damage. The higher the filtration rate, the better the kidneys are working.

If your doctor orders a blood test to learn more about your kidney function, an eGFR result is often provided automatically, along with your blood concentration and creatinine results. Your doctor may also test for other signs and conditions that may indicate you have chronic kidney disease. These may include protein in your urine (proteinuria), blood in the urine (haematuria), high blood pressure and diabetes.

Where to get help

- Your doctor
- Kidney Health Information Service Tel. 1800 682 531 or TTY 1800 005 881

Things to remember

- Kidneys are a special filter system for your body.
- Kidneys remove waste products from the blood and produce urine.
- Kidneys control the levels of many substances in the blood.

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