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# How do your kidneys work?

KS2 KS3 Ages 7-14 ⌚ 2 min read

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Right now, as you read this, two bean-shaped organs in your back are working harder than you might imagine. Your **kidneys** are about the size of your fist, and they're busy filtering every drop of blood in your body — not once, but dozens of times each day.

Think of your kidneys like a water treatment plant for your body. Just as a treatment plant takes dirty water, removes all the rubbish and chemicals, and sends clean water back into the system, your kidneys take your blood, filter out the waste, and return clean blood to your body.

## The Amazing Filtering System

Each kidney contains about a million tiny filters called **nephrons**. These microscopic structures work like incredibly fine sieves, allowing useful things like proteins and blood cells to stay in your blood whilst catching waste products like excess salt, water, and toxins. The waste gets mixed with water to create urine, which travels down tubes called ureters to your bladder.

Your kidneys are remarkably efficient. They process about 180 litres of blood every single day — that's roughly 720 cans of fizzy drink! But here's the clever bit: they only produce about 1-2 litres of urine daily, which means they're recycling most of that water back into your system.

## More Than Just Waste Removal

Whilst cleaning your blood is their main job, your kidneys are also busy with other important tasks. They help control your blood pressure by adjusting how much water stays in your body. They produce hormones that help make red blood cells and keep your bones strong. They even help balance the chemicals in your blood, making sure you have just the right amount of sodium, potassium, and other minerals.

## When Things Go Wrong

Because your kidneys work so hard, it's important to look after them. Drinking plenty of water helps them do their job more easily. Too much salt, sugar, or processed food

can make their work harder. Some people are born with kidney problems, whilst others develop them over time, especially if they have diabetes or high blood pressure.

The remarkable thing is that you can live perfectly well with just one healthy kidney — they're built with plenty of spare capacity. But taking care of both kidneys means they'll keep cleaning your blood efficiently for many years to come.