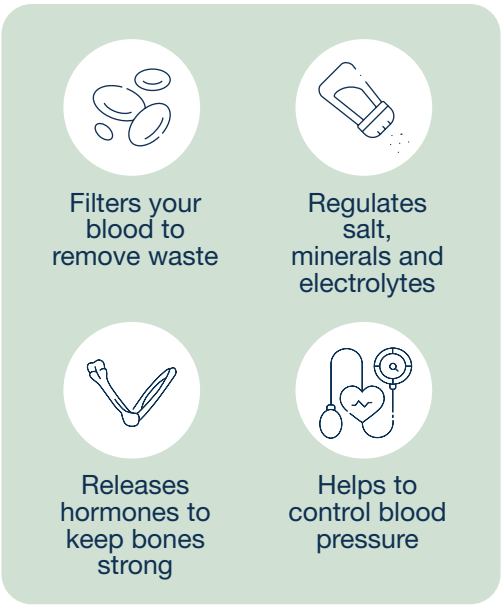
What is a kidney?

The kidneys are two bean-shaped organs, each about the size of your fist. They are found in your back on either side of the spine.

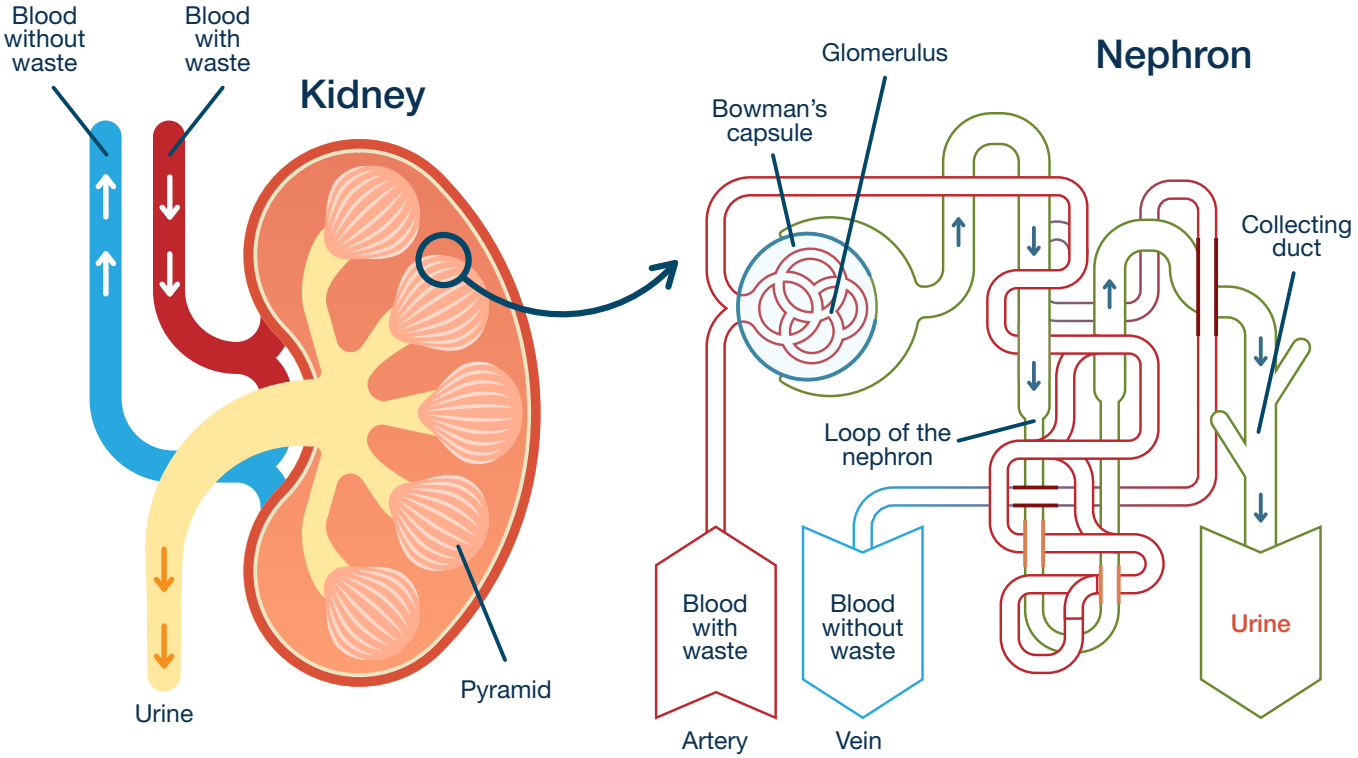
What are the main functions of the kidney?

The main function of the kidneys is to filter your blood and remove all of the waste products. The kidney has many other responsibilities too, including helping the body regulate salt, minerals and electrolytes. The kidney also releases hormones that help with keeping your bones strong, prompting bone marrow to make red blood cells and controlling blood pressure.



How does the kidney work?

Inside kidneys are around a million tiny filtering units (called nephrons). Each of these nephrons is made up of clusters of tiny blood vessels surrounded by small tubes. These tubes form the start of the urinary system. Through a process called ultrafiltration, substances such as water, proteins, sugars and waste products such as urea move from the blood into the kidney tubules. As this fluid moves through the kidney tubules some filtered items are reabsorbed back into the blood as required by your body (e.g., glucose, proteins and some water) while waste products (e.g. urea) are not and will pass out of the body in urine.



How much blood flows through my kidneys?

The kidneys are extremely hard-working organs. Under normal conditions, blood flowing through the kidneys (renal blood flow) accounts for 20-25% of your total cardiac output (the total amount of blood your heart pumps – measured in litres per minute). This happens on repeat throughout the day. One liter of blood passes through the kidneys per minute. Renal Blood Flow = 1 L/min.

Why do kidneys fail?

Every person has two kidneys that support each other; for some people, when one kidney fails, the other can function alone and do all the work. This damage can develop quickly, often as the result of injury or poisoning, or as a result of underlying diseases. Various disease or predisposed medical conditions can lead to kidney failure. As a result, sometimes kidney damage can happen slowly over time, one fails first and it takes time for the kidney disease or failure to present.

What happens when kidneys don't work?

When the kidneys can't do their job, the filtration process cannot happen so the body struggles to remove toxins from the blood and with maintaining the correct levels of ions and water. The body may also become overloaded with fluid. Kidney damage can have knock-on effects for the heart, liver, muscles and other organs / bodily functions.
It is important to support the kidneys to prevent this strain on the rest of the body.

Kidney damage can have a knock on effect on other organs

Heart, liver, muscles, vascular health and other organs / bodily functions

What are the signs of kidney failure?

Fatigue, frequent need to urinate, itchy skin, nausea, shortness of breath, erectile dysfunction, water retention, blood and / or protein in the urine.

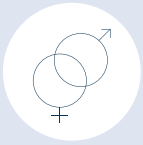
Fatigue (tiredness)

Frequent need to urinate, especially at night (which grows with time)

Itchy skin

Nausea

Dyspnea (shortness of breath)



Erectile dysfunction (men have difficulty getting and / or sustaining an erection)

Water retention (swollen feet, hands, ankles)

Blood and / or protein in the urine

For a comprehensive list of references and contributors involved in the creation of this material, please refer to the included reference sheet.