

## Getting to Know: Excretory

Every system that produces wastes needs to have a system for getting rid of those wastes. In your home, your parents may ask you to take out the trash. Neighborhoods and cities rely on trash collection services to pick up and remove garbage.

Your body also has its own system for removing the metabolic wastes produced by your body's cells. This system is known as the *excretory system*. The term *excretion* refers to the process of eliminating waste.

### *What is the excretory system?*

The *excretory system* is the body's waste removal system. Its function is to collect metabolic wastes produced by cells and remove them from the body. Without the excretory system, these wastes would build up and end up poisoning our cells.

Cells produce a variety of wastes, including carbon dioxide, water, nitrogen, inorganic salts, and heat. The body excretes these wastes in different ways. Some of these wastes such as carbon dioxide and nitrogen are expelled from the body through the lungs. Other wastes, including water and salts, may be secreted through the skin when you sweat. The rest of the wastes must be filtered from the bloodstream by the urinary system.



Taking out the trash on a regular basis helps to keep your house clean. Your excretory system is constantly working to help your body remove wastes.



### **Misconception 1:** *I thought that bodily “wastes” consisted only of urine and feces. Is that true?*

Urine and feces are not the only waste products produced by the body. Carbon dioxide, nitrogen, and inorganic salts are also waste products produced by the body. Carbon dioxide and nitrogen are released from the lungs when you exhale, whereas inorganic salts may be excreted when you sweat or urinate.

### *What is the urinary system?*

The urinary system removes wastes by filtering them out of the bloodstream and releasing them from the body. The components of the urinary system are the kidneys, the ureters, the urinary bladder, and the urethra.

The most important organs in the urinary system are the *kidneys*. This is where the bloodstream is filtered and urine is produced. From the kidneys, the urine travels down the *ureters* to the *urinary bladder*. The urine remains in the bladder until it is released from the body through the process of urination. At that point, the urine empties from the urinary bladder, flows through the *urethra*, and exits the body.



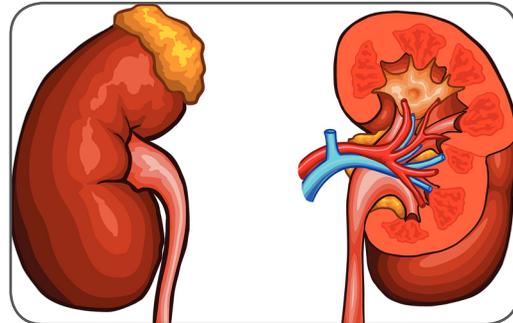
**Misconception 2:** *Because feces is eliminated from the body, it must be a part of the excretory system, right?*

The excretory system only removes metabolic wastes produced by the cells. *Feces* are not made of wastes produced by your cells. Instead, they are the indigestible remains of food that you have eaten. Feces are eliminated from the body through the digestive system. On the other hand, it's important to note that the production of urine is *not* part of the digestive system. Urine is created when the kidneys filter wastes out of the bloodstream. These wastes come from all over the body.

### How do the kidneys work?

The kidneys are constantly cleaning and filtering wastes from the bloodstream. In fact, your kidneys can filter all the blood in your body more than 300 times a day!

The process of urine creation begins as blood flows through the *renal arteries* into each kidney. There it passes through tiny microscopic filters called *nephrons*. The nephrons collect and consolidate the wastes into urine. The cleaned blood then flows out of the kidneys through the *renal veins* and returns to circulate through the body. The urine that is left behind then moves on through the urinary system and is ultimately released from the body.



The kidneys are responsible for filtering wastes from the bloodstream.

Keep exploring to learn more about the ways that the excretory system helps your body function!



**Misconception 3:** *Is getting rid of wastes the only function of the excretory system?*

That is not quite true. In addition to filtering wastes, the kidneys are also involved in maintaining a healthy water balance. This is an important part of maintaining homeostasis in the body.