

Excretion Systems

Definition: The excretion systems remove waste from our body. Materials that are digested or processed in our body, but is no longer need, is eliminated through our excretion systems.

The elimination of waste is carried out mainly by our:

1. **Lungs (the respiratory system)**
2. **Liver**
3. **Skin & Sweat Glands**
4. **Kidneys**

1. Lungs (*the respiratory system, refer to notes on the respiratory system*):

- Our body must get rid of carbon dioxide, or else we will die in just a few minutes.

2. Liver

- Filters poison and waste from the blood, which then gets transported to the kidney and is expelled as urine.

3. Skin & Sweat glands:

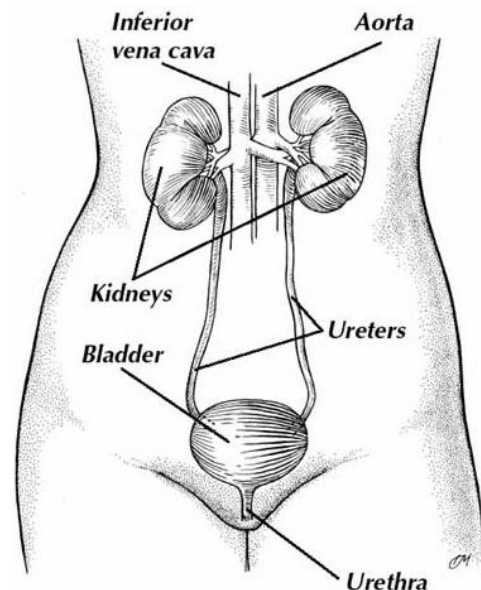
- There are approximately 2 500 000 sweat gland on the surface of our body.
- These glands are responsible for producing sweat that is released through the pores of our skin.
- Our sweat contains water and waste, such as heat, urea, water, and salts; so by sweating we remove these waste products, and we also keep our body temperature balanced. You sweat in both cold and hot weather!

4. The Urinary System:

- The main function of this system is to help keep the body in **homeostasis** (keeping the body stable and regulated) by getting rid of waste in the blood and restoring water so that the volume of blood is correct.

The organs in this system are:

1. 2 Kidneys:
 - Two reddish-brown bean-shaped organs.
 - It has the following functions:
 1. filters the blood and gets rid of wastes in the blood, through the production of urine
 2. plays a role in red blood cell formation
 3. helps to control the blood pH
 4. helps regulate blood pressure



2. 2 Ureters:
 - Two tubes about 25 cm long.
 - Links the kidney to the urinary bladder.
 - Its function is to transport urine produced in the kidneys to the bladder.
3. 1 Urinary Bladder:
 - Hollow muscular organ.
 - Its shape depends on the amount of urine in it; and can hold about 1 litre of urine.
 - Its function is to stores urine until it is released.
4. 1 Urethra:
 - A small tube coming from the urinary bladder.
 - It's 3-4 cm long in women, and 20 cm long in men.
 - Its function if to transport urine from the bladder to the outside.

What is urine made up of?

Urine: 95% water } this comes from the oxidation of amino acids:
2.5% urea } **amino acid + oxygen → energy + water + urea**
2.5% minerals and other substances from your blood

Fun Facts:

Urinary Disorders:

1. **Dehydration** occurs when water loss increases and/or water intake decrease.
 - Caffeine in coffee, tea, and colas is a diuretic, which causes you to absorb less water and urinate more often.
 - If the large intestine fails to reabsorb water, you end up getting diarrhea
2. **Kidney Stones:**

The crystals of salt normally found in urine can solidify into stones. They can be very painful and may require surgery to be removed.