Excretory System

-Eliminates cellular wastes from the body through the lungs, skin, kidneys, and digestive system

Waste Removal

1. To Sweat – waste products such as excess salts are released through your skin when you sweat
2. To Exhale – lungs release water and toxic carbon dioxide when you exhale
3. To Produce Urine and Feces – Kidneys remove all types of cellular waste products from your blood (Urinary System). The digestive system eliminates feces from the body

The urinary system is made of:

1. Kidneys – humans have 2 kidneys. They eliminate urea, excess water, and other waste materials in urine. The kidneys act like filters. As blood flows through the kidneys, they filter wastes form the blood
2. Urea – a poisonous chemical that comes from the breakdown of proteins
3. Urine – a watery fluid produced by your kidneys
4. Ureters – Urine leaves the kidneys 2 through narrow tubes, called ureters, that connect the kidneys to the bladder
5. Urinary bladder – a saclike muscular organ that stores urine. When the bladder is full enough that its walls are stretched, you feel the need to urinate.
6. Urethra – a small tube that allows urine to flow from the bladder and leave the body.

The filtering process

* Every drop of blood in your body passes through the kidneys and is filtered more than 300 times per day
* Each kidney contains about a million tiny filtering factories call nephrons
* Nephrons are tiny structures that remove wastes from blood and produce urine
* 2 stages of urine formation
1. Both wastes and needed materials, such as glucose, are removed from the blood.
2. Much of the needed material is returned to the blood

First: Blood flows from an artery into a nephron in the kidney

Second: After flowing through branching arteries, blood reaches a cluster of capillaries in a nephron. In the capillary cluster, urea, water, glucose, and other substances are filtered out of the blood. The filtered materials pass into a capsule that surrounds the capillary cluster.

Third: From the capsule, the materials that were removed from the blood pass into a long, twisting tube, most of the water and glucose are reabsorbed. Most of the urea stays in the tube.

Fourth: After the reabsorbing process is complete, the liquid that remains in the tube is called urine.

Excretion helps maintain homeostasis by keeping the body’s internal environment stable and free of harmful materials. The kidneys also help maintain homeostasis by regulating the amount of water in your body.

Other organs of excretion:

1. Lungs – When you breathe out, carbon dioxide and some water are removed from the body.
2. Skin – Sweat glands also function in excretion, because water and some chemical wastes are excreted in perspiration
3. Liver – Some wastes need to be broken down before they can be excreted. For example, urea, which comes from the breakdown of proteins, is produced by the liver.