

The Excretory System

By: Ely, Anja, Brian and Olivia

What does it do?

Filters useless and harmful materials from the body's fluids and then removes them in the form of urine and sweat. It helps to maintain homeostasis.

The parts of the excretory system include the kidneys, lungs and skin.

How does it work?

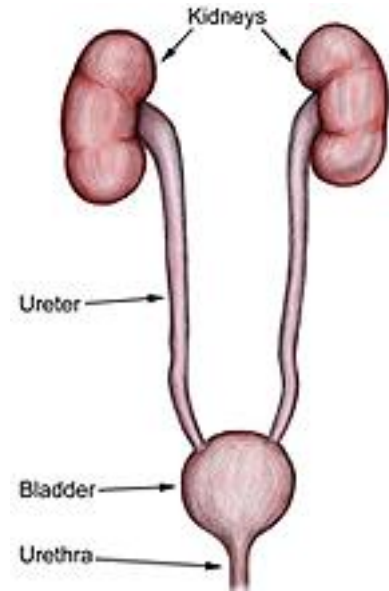
Waste is filtered from the blood and collected as urine in each **kidney**.

Your **lungs** remove CO₂ with each exhale.

Sweat glands in the **skin** secrete a fluid waste called sweat or perspiration; however, its primary functions are temperature control and pheromone release.

How it is organized

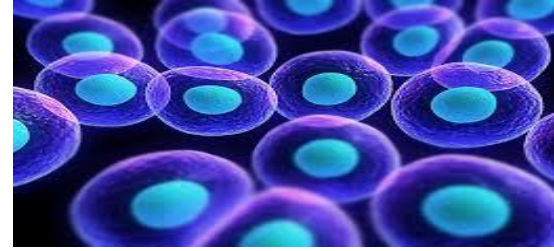
The main system is from the kidneys through the ureter into urinary bladder and out of the urethra; Everything else is not directly connected (But they still exist)



How it works with other organ systems

- It works well with the circulatory and endocrine system.
- The circulatory system is when the blood passes through one of the two kidneys.
- In the endocrine system the compounds and fluids are monitored.
- The kidney functions must be continuously monitored.

Types of tissues and cells



Lungs- Ciliated epithelial cells, goblet cells and basal cells are cells found in the lungs

Kidney - Contains a single metanephric mesenchymal cell that generates all the epithelial cells of the nephron in the kidney

Skin- keratinocytes are the major cells and make up 95%, the other 5% are merkel cells, melanocytes and langerhans cells.

What causes the diseases

Kidney Stones – Uric acid build up inside the kidney

Urethritis – Inflammation of the urethra caused by infection

The herpes simplex virus (HSV-1 and HSV-2) can also **cause urethritis**. Trichomonas is another **cause** of **urethritis**. It is a single-celled organism that is sexually transmitted.

Pyelonephritis – Urinary tract infection

Kidney Failure – Kidney(s) stop working

–You have a condition that slows blood flow to your kidneys

-You experience direct damage to your kidneys

Your kidneys' urine drainage tubes (ureters) become blocked and wastes can't leave your body through your urine

What goes wrong in diseases that affects the organ system

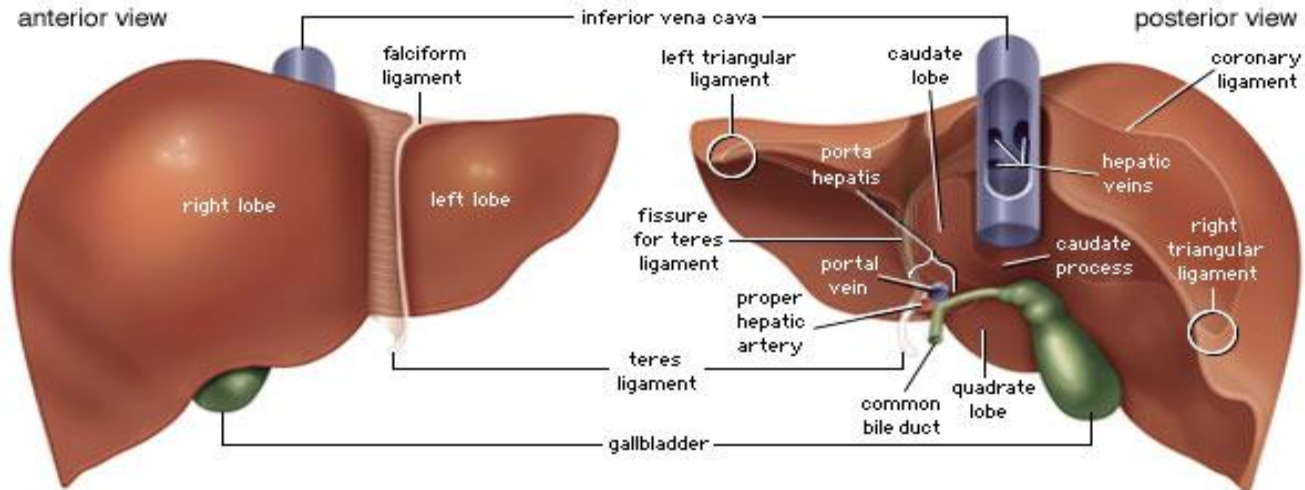
Pyelonehritis-the bacteria travel up through the ureters, from the bladder to the kidneys. Bacteria, such as Escherichia coli, commonly known as E. coli, often cause the infection. But any serious infection in the blood stream can spread to the kidneys and cause acute pyelonephritis.

Urethritis- The bacterial infection causes pain while urinating, and a frequent need to urinate as well

Kidney Stone- Blocks the kidney track and causes extreme amount of pain. It also blocks the urinary tract and is expelled through urination.

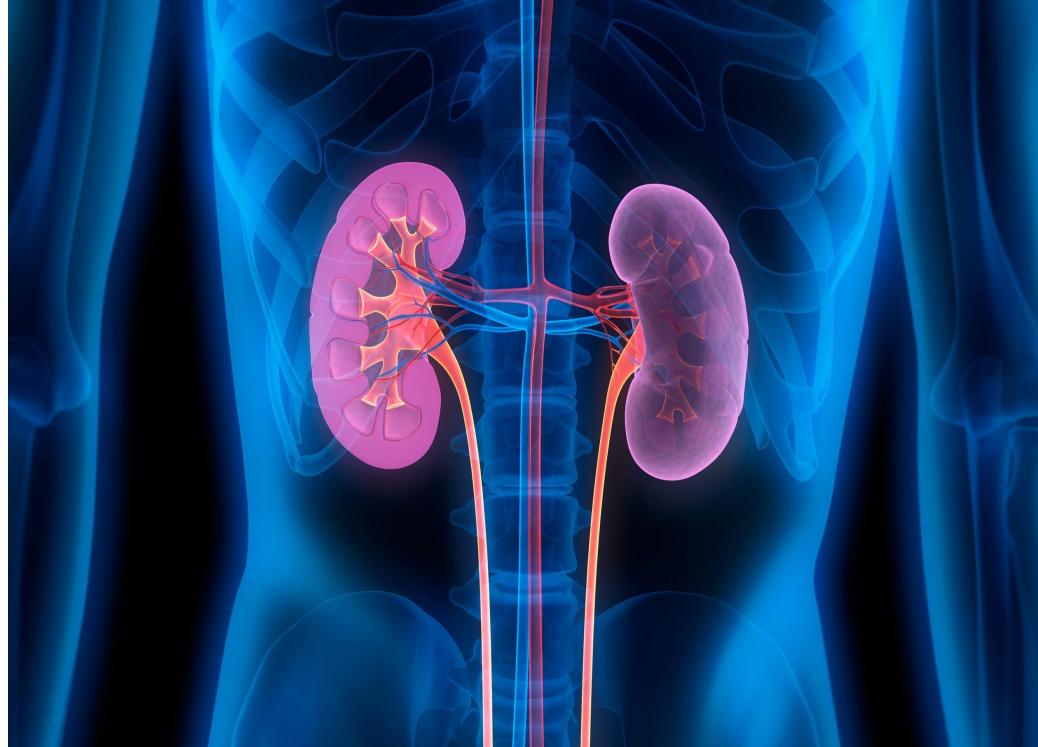
Liver

The liver regulates most chemical levels in the blood. All of the blood leaving the stomach and intestines passes through the liver. The liver processes this blood and breaks down, balances, and creates nutrients for the body to use. It also metabolized drugs in the blood into forms that are easier for the body to use.



Kidney - The Main Organ in the Excretory System

Filters blood and sends the waste into bladder. Kidneys regulate the water content of blood and maintain blood PH.



Kidney Structure & Other Facts

- The kidney is made up of a renal medulla and renal cortex
- The functioning unit in kidneys are nephrons
- Nephrons are small, independent processing units
- There are about a million nephrons in each kidney
- Each nephron has its own blood supply through the atriolo
- Kidneys are controlled by the composition of the blood
- Hormones are released according to that composition

Blood Purification

1. Blood enters nephron through the arteriole. 2.
- Blood passes through the capillaries and is filtered. 3.
- Waste products from blood end up in collecting duct, which leads to ureter. 4.
- Purified blood exits the nephron through the venule.

Filtration

Because blood is under pressure and the walls of the capillaries and Bowman's capsule are permeable, fluid flows from the blood into Bowman's capsule (process called filtration). The materials filtered from the blood are called filtrate.

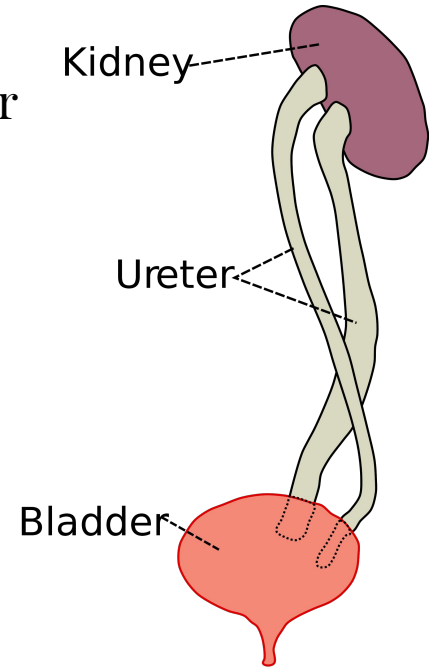
Bile

- Paste produced by the liver
- used by the small intestine to break down waste
- makes waste into harmless substances.



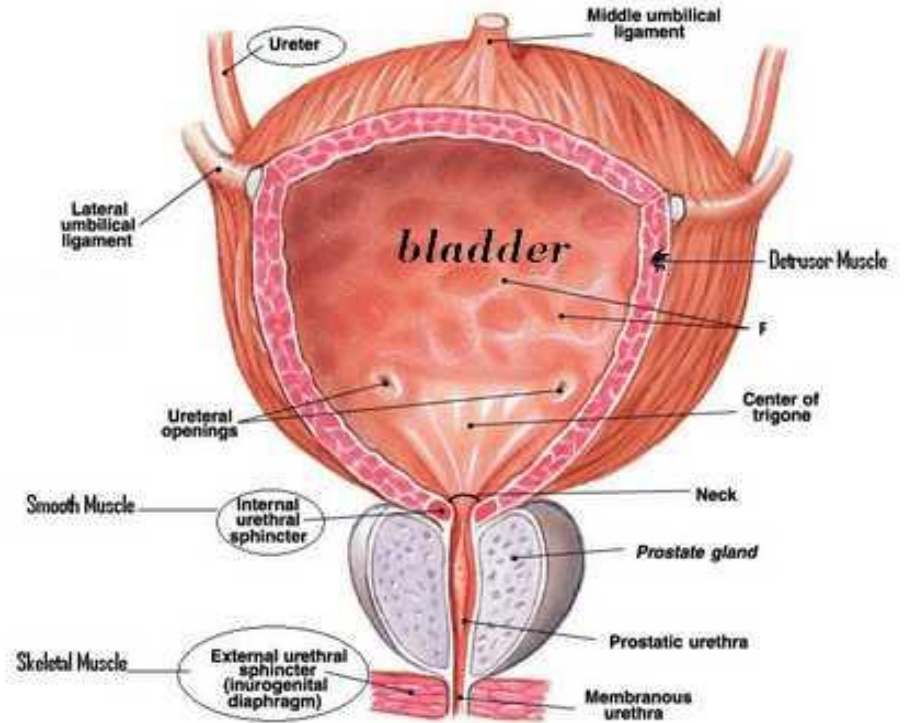
Ureter

Muscular tube that brings urine from the kidneys to the bladder



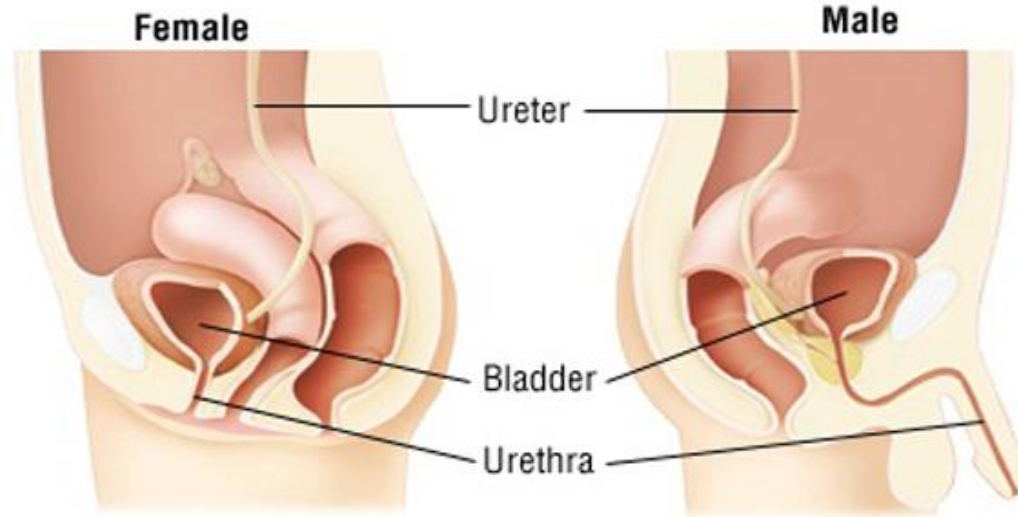
Urinary Bladder

Elastic, balloon like organ that stores urine



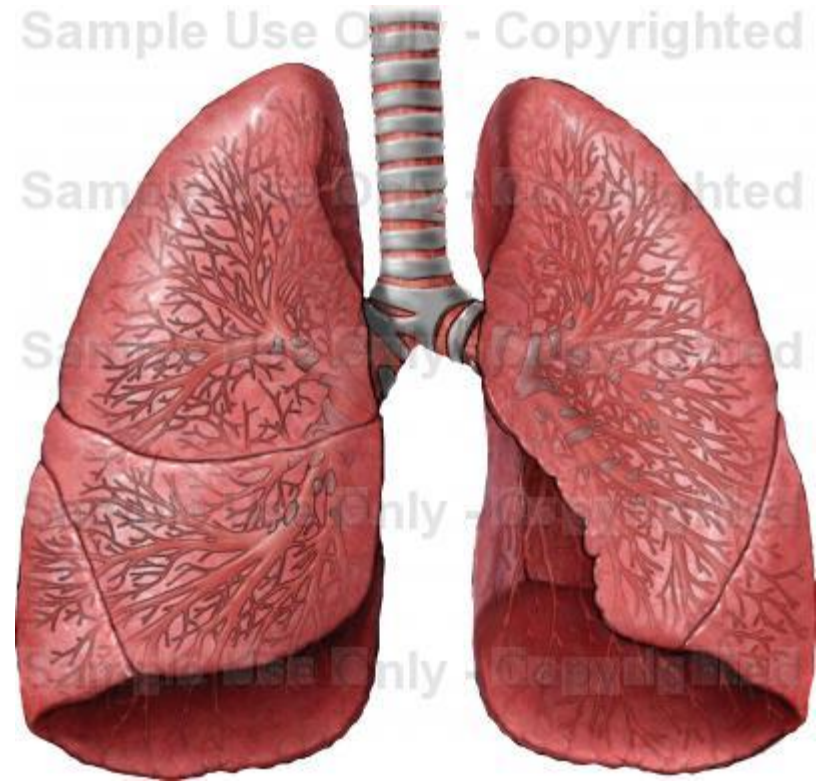
Urethra

Small tube that connects bladder to genitals and is used for urination



Lungs

Carbon Dioxide is filtered from the blood with the lung's alveoli where the lungs exhale the carbon dioxide.



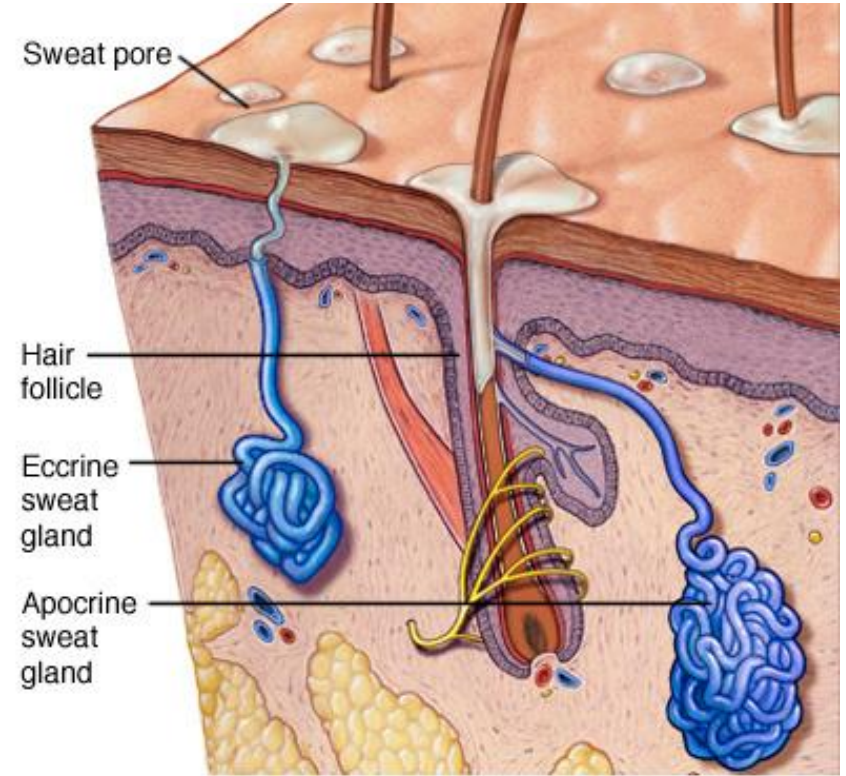
Skin

- Skin excretes sweat, a mixture water, ammonia, salt and sugar.
- This mixture is evaporated, cooling the body and helping it keep a constant temperature.



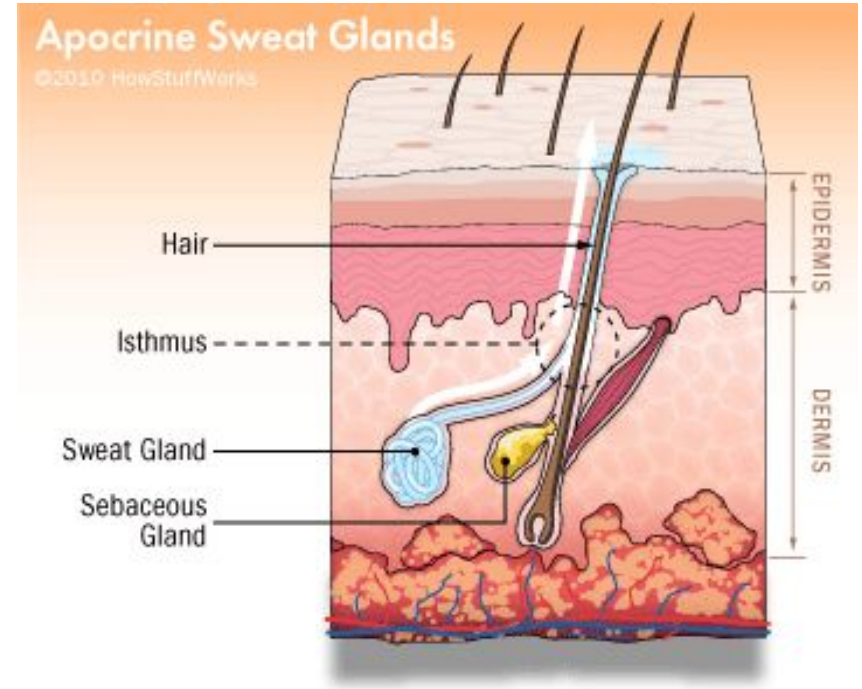
Ecrcine Sweat Glands

- The main type of sweat glands in the body, responsible for the majority of bodily cooling.
- When the body temperature raises the sweat glands release sweat



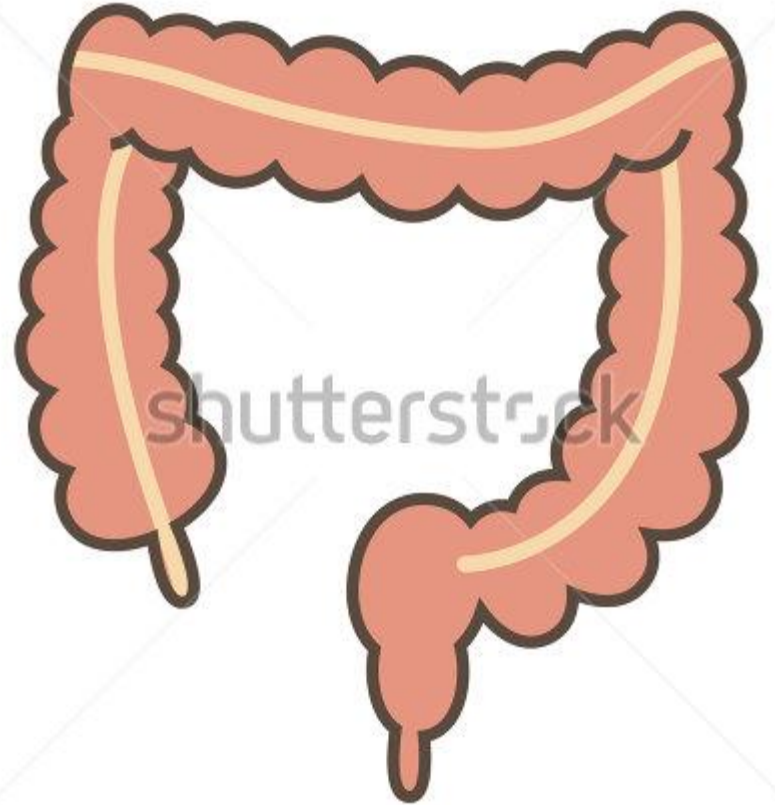
Apocrine sweat gland

- Glands that make up a very small portion of humans sweat glands.
- This type of sweat gland is often the only type of sweat gland in other animals.
- Many of the important glands in the body such as ceruminous glands (ear wax) are just modified apocrine glands.



Large intestine

Removes any usable water from the body's solid waste



Cite

<http://biology.kenyon.edu/courses/biol09/tetrahymena/lung.htm>

http://www.biologycorner.com/anatomy/tissues/ch5_notes.html

https://en.wikipedia.org/wiki/Excretory_system

Thanks for Watching!

Anja, Ely, Brian and Olivia
