

Pumbaa

Age: 112-115 days old
Gender: Male

How do we know the Age?

We measured the length of our pig from the snout to the tail with a piece of string following the natural curve of the spine. We then compared our measurements to the given table to determine that our pig was in fact carried to full term.

How do we know the gender?

We located the urogenital opening on the mid-ventral surface posterior to the umbilical cord. This classifies the pig to be a male.

Characteristics:

As of right now Pumbaa doesn't have any interesting characteristics aside from his small size.

Liver



Facts:

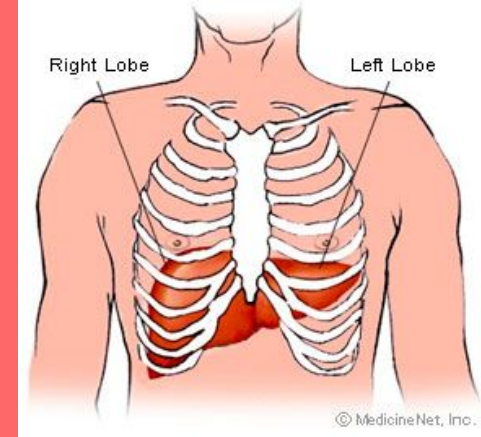
- It is the second largest organ next to the skin.
- The liver has the incredible ability to regenerate and it only needs about 25% of the original tissue to do so.
- The liver has a dual identity, it filters your body's toxins and it also functions as a gland.

Function:

The liver's main job is to filter the blood coming from the digestive tract, before passing it through the rest of the body. The liver also detoxifies chemicals and metabolizes drugs in the human body. The liver also secretes bile that ends up back in the intestines and it makes proteins important for blood clotting and other functions.

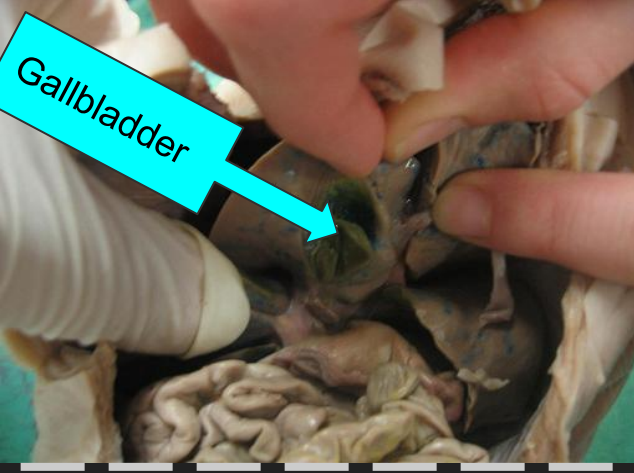


The Liver



Structure:

The liver is a large, meaty organ that sits on the right side of the belly. Weighing about 3 pounds, the liver is reddish-brown in color and feels rubbery to the touch. Normally you can't feel the liver, because it's protected by the rib cage.



Gallbladder

Fun Fact:
People who have their gallbladder removed can not fully digest food which leads to struggles with weight.



Fetal Pig Gallbladder

Human Gallbladder

Function:
Its primary **function** is to store and concentrate bile, a yellow-brown digestive enzyme produced by the liver.

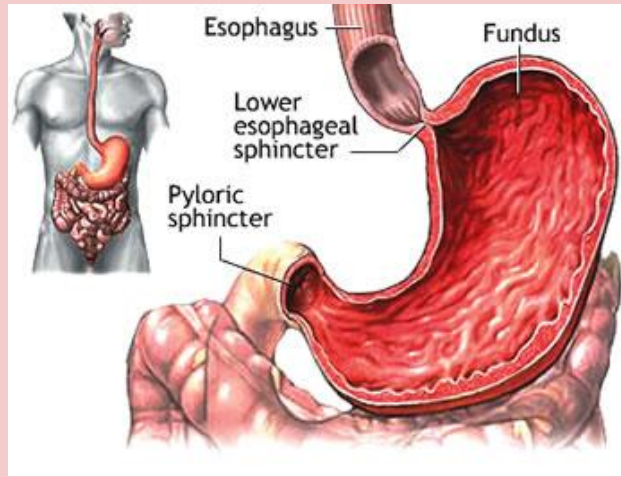
Structure:
A pear-shaped, hollow structure located under the liver and on the right side of the abdomen.

Malfunctions:
Gallstones are solid particles that form from bile cholesterol and bilirubin in the gallbladder. These stones can cause very serious health issues.

Stomach

Facts:

- Food does not break down completely in the stomach.
- An adult stomach can hold around 1.5 liters of food/drink.
- The stomach is located in the upper left part of your abdomen.

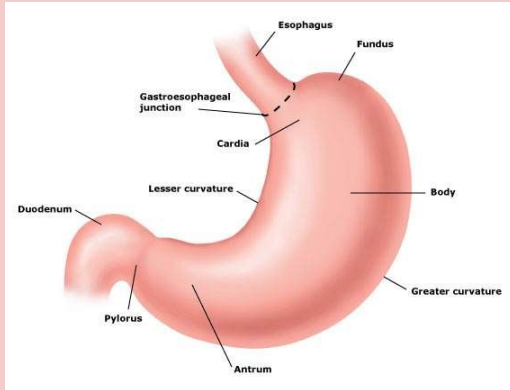


Structure:

- Ridges of muscle tissue called rugae line the stomach.
- Food enters the stomach through a muscular valve called the lower esophageal sphincter.
- Food then later enters the small intestine through a muscular valve called the pyloric sphincter.

Function:

- The main function of your stomach is to break down and digest food in order to extract necessary nutrients from what you have eaten.
- Digestive glands in the stomach produce various enzymes, such as pepsin and other acids, to assist with digestion.



Stomach

The kidneys are a pair of fist-sized organs located on either side of the spinal column near the lower back.

Kidneys!



Regulated reabsorption takes place in the distal tubule and collecting duct. Even after filtration has occurred, the tubules continue to secrete additional substances into the tubular fluid. This enhances the kidney's ability to eliminate certain wastes and toxins. It is also essential to regulation of plasma potassium concentrations and pH.

Excretion is what goes into the urine, the end result of the above three processes. Although the original concentration of a substance in the tubule fluid may initially be close to that of plasma, subsequent reabsorption and/or secretion can dramatically alter the final concentration in the urine.

The amount of a particular substance that is excreted is determined by the formula:
$$\text{amount excreted} = \text{amount filtered} - \text{amount reabsorbed} + \text{amount secreted}$$

Filtration is the mass movement of water and solutes from plasma to the renal tubule that occurs in the renal corpuscle. About 20% of the plasma volume passing through the glomerulus at any given time is filtered. The entire plasma volume (about 3 liters) is filtered 60 times a day! Filtration is primarily driven by blood pressure in the capillaries of the glomerulus.

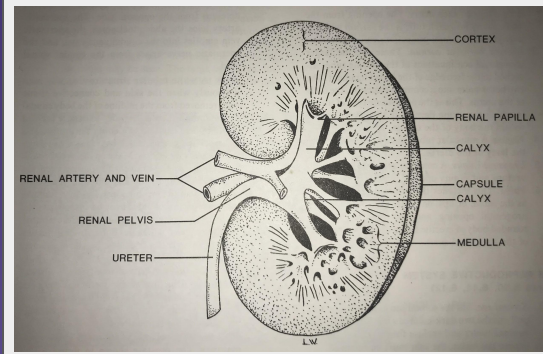
Reabsorption is the movement of water and solutes from the tubule back into the plasma. Reabsorption of water and specific solutes occurs to varying degrees over the entire length of the renal tubule. Bulk reabsorption, which is not under hormonal control, occurs largely in the proximal tubule. Further bulk reabsorption of sodium occurs in the loop of Henle.

Possible Malfunctions:

- ★ Kidney stones (renal lithiasis, nephrolithiasis) are hard deposits made of minerals and salts that form inside your kidneys.
- ★ Kidney stones have many causes and can affect any part of your urinary tract - from your kidneys to your bladder. Often, stones form when the urine becomes concentrated, allowing minerals to crystallize and stick together.

Fun Facts:

- ★ The blood flow in kidneys is higher than the blood flow in heart, liver and brain.
- ★ Exactly half of one single kidney is capable of doing the job that is performed by two kidneys together.
- ★ The largest kidney stone ever recorded was the size of a coconut. It weighed a whopping 2.5 pounds.



Female Reproductive System

Structure:

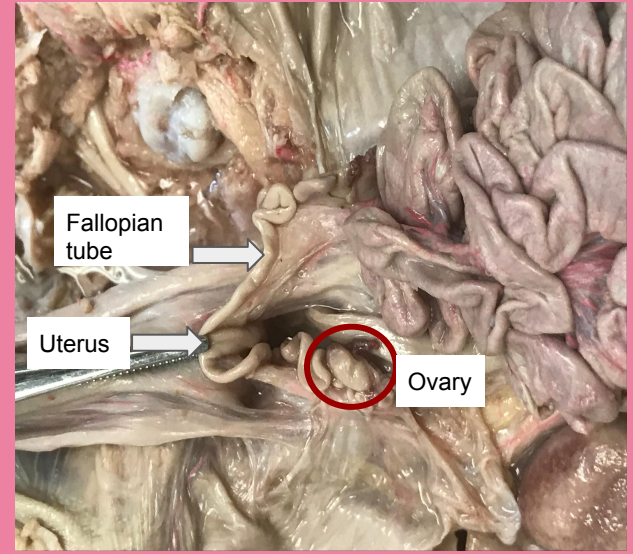
The female reproductive system includes the ovaries, fallopian tubes, uterus, vagina, vulva, mammary glands and breasts.

Malfunction:

Ovarian cysts are fluid-filled sacs or pockets in/on an ovary. Many times they are harmless but they can cause severe symptoms when they rupture.

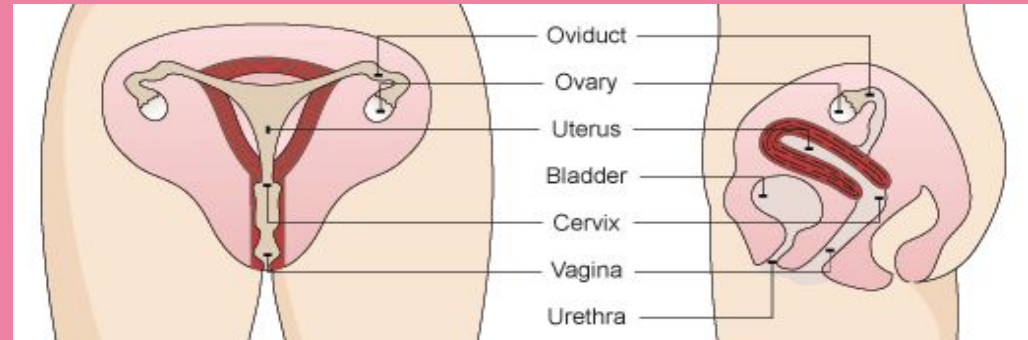
Fun Facts:

Women are born with all of their eggs that they will have for a lifetime. A baby can taste what the mother is eating when in the womb.



Function:

- The ovary produces ovum necessary for reproduction.
- The fallopian tube transports the ova to the site of fertilization.
- The uterus nourishes and protects a developing fetus.
- Lastly the vagina acts as a birthing canal.



Male Reproductive System

Structure:

The penis and the urethra are part of both the urinary and reproductive. The scrotum, testes, vas deferens, seminal vesicles, and prostate gland make up the rest of the system.

Malfunction:

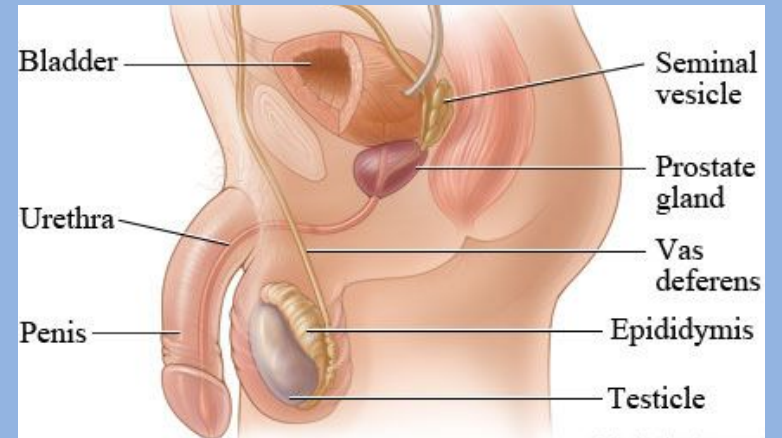
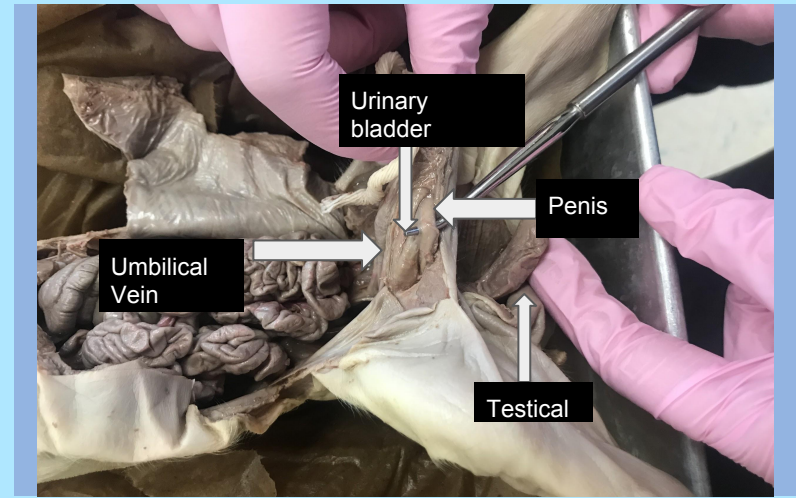
Spermatocele is a painless, fluid filled cyst in the long, tightly coiled tube that lies above and behind each testicle (the epididymis). The fluid may contain sperm that are no longer alive.

Function:

- To produce, maintain, and transport sperm and produce seminal fluid.
- To discharge sperm into the female reproductive system during reproduction.
- To produce and secrete male sex hormones responsible for maintaining the system.

FunFacts:

On average, men produce about 5 billion mature sperm per day. It's possible to break/fracture the penis.



Lungs



Fun Fact:
Lungs are the only organs in the human body to float on water.

Function:

The function of the lungs is to process the exchange of gas called respiration. In respiration, oxygen from incoming air enters the blood, and carbon dioxide a waste product of cellular respiration leaves the blood.

Structure:

The lungs are a pair of spongy, air-filled organs located on either side of the chest or thorax. The trachea or windpipe conducts inhaled air to the lungs through tubes called bronchi. The bronchi divide into smaller and smaller branches called bronchioles which then become microscopic.

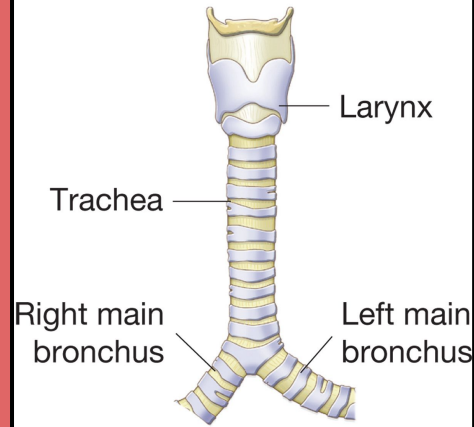
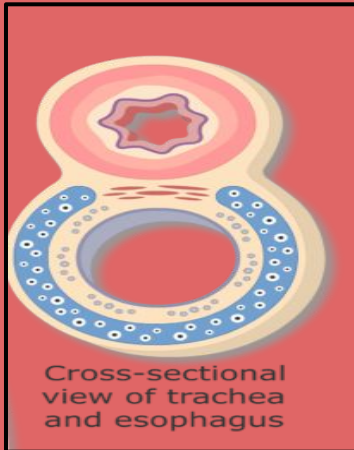
Common Malfunctions:

Asthma is a common malfunction of the lungs. It is a condition in which the airways are persistently inflamed, and may occasionally spasm, causing wheezing and shortness of breath, allergies, infections, or pollution can trigger asthma symptoms.

Trachea

Function:

- It is a necessary part of the body's airway and it has the vital function of providing air flow to and from the lungs for respiration.
- It widens and lengthens slightly with each breath in, and returns to its resting size with each breath out.



Facts:

- About half of the trachea is in the chest and the rest is in the neck.
- The trachea is also known as the "windpipe".
- The trachea is not only a vital part of the respiratory system, it is also an important part of the digestive system.

Structure:

- It is about 4 inches long and less than an inch in diameter.
- It is composed of about 20 rings of tough cartilage. The back part of each ring is made of muscle and connective tissue. The moist, smooth muscle tissue is called mucosa.



Function:

The human heart is an organ that pumps blood throughout the body in the circulatory system. It supplies oxygen and nutrients to the tissues of the body and removes carbon dioxide wastes.

Structure:

The heart is divided into four chambers consisting of two atria and two ventricles; the atria receive blood, while the ventricles pump blood. The right atria receives blood from the superior and inferior vena cava and the coronary sinus. Blood then moves to the right ventricle where it is pumped into the lungs

♥ Heart ♥

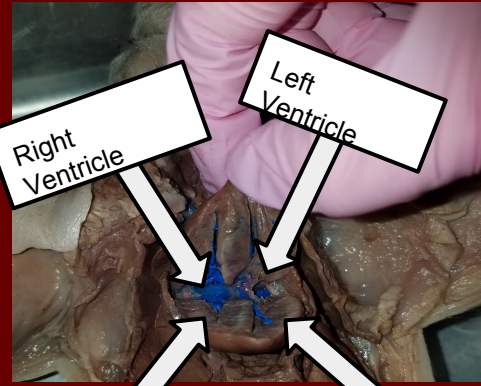
Fun Fact:

The heart beats 100,000 times a day.

By the age of 80 your heart will have pumped 50 million gallons of blood.

Common Malfunction:

Coronary artery disease is impedance or blockage of one or more arteries that supply blood to the heart, this is usually caused by the hardening of the arteries known as CAD.



Epiglottitis

When you swallow food or liquid, a flap of tissue called the epiglottis covers the entrance to the trachea, ensuring that the food or liquid goes into the esophagus.

Disease:

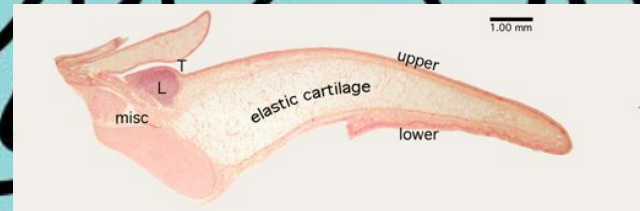
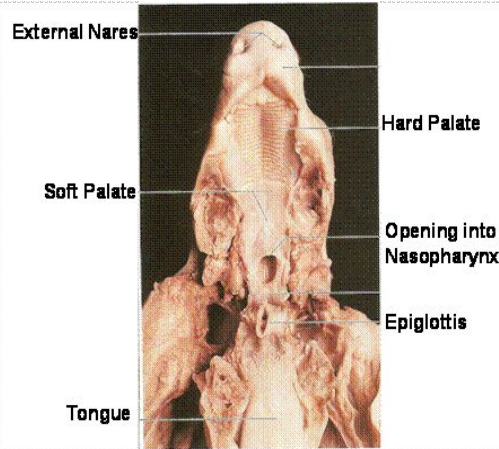
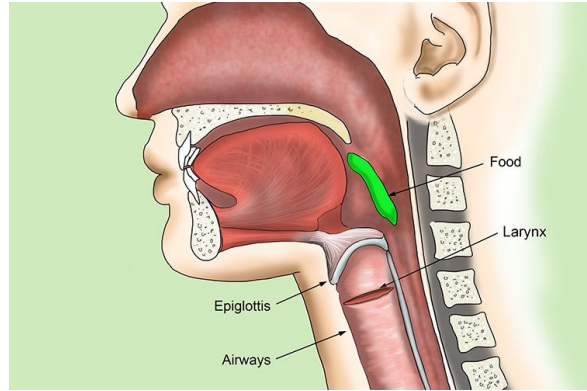
A potentially life-threatening condition that occurs when the tissue protecting the windpipe becomes inflamed. Epiglottitis is commonly caused by an infection. The resulting inflammation causes swelling, which blocks air to the lungs. Symptoms often include shortness of breath, difficulty swallowing, and sore throat. Fever is commonly seen in cases of infection. When an infection is present, treatment includes antibiotics. A breathing tube and ventilator may be needed in severe cases.

Epiglottitis Facts:

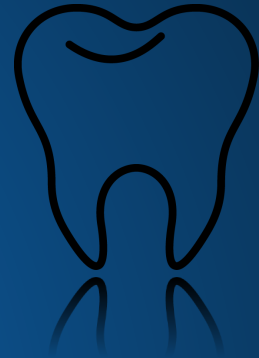
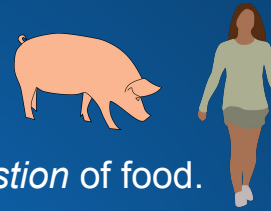
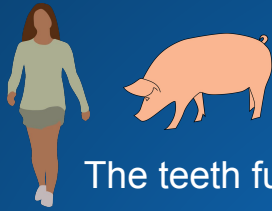
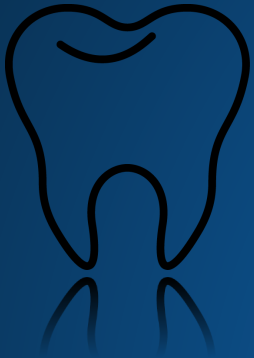
When you are breathing, your epiglottis is up or open. Then when you eat or drink, it closes, redirecting food or liquid to your stomach. Occasionally, this mechanism can malfunction and you end up sputtering and choking on what you've just swallowed.

It's the thing that is allowing you to swallow, talk, and breathe all at the same time.

The epiglottis is made of elastic cartilage covered with mucous membrane. Its anterior surface consists of epithelium that is consistent with the tissues of the mouth and pharynx. Its posterior surface is covered with pseudostratified columnar epithelium.



Fetal Pig Teeth



The teeth function within the *mechanical digestion* of food.
The surface of the teeth are protected by mineralized enamel.

Incisors = Cut
Canines = Tear
Molars = Grind and Crush

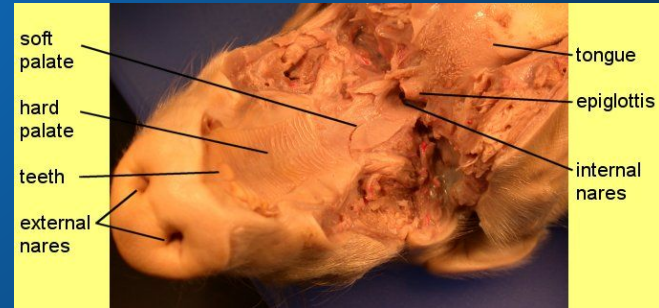
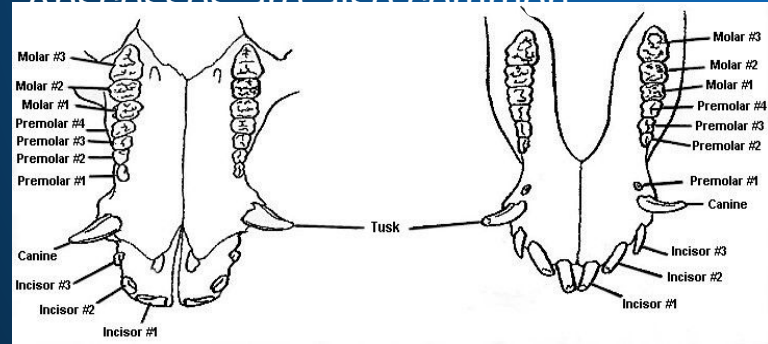
Tartar buildup, gingivitis and periodontal disease with gum regression and root exposure are major contributors to tooth loss.

Abscesses are also common

People who drink three or more glasses of soda every day have 62% more tooth decay, fillings, and tooth loss than others.

Tooth enamel is the hardest substance in the human body.

Teeth tear and grind food into small pieces. Enzymes in saliva kill some pathogens and start to break down carbohydrates.



Intestines

Fun Fact: The human intestines are a total of 28 feet long! That's about as tall as an adult giraffe!

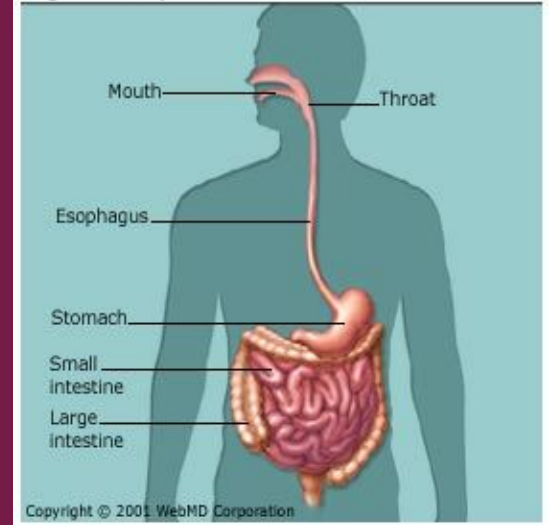
Large Intestine

Small Intestine



The intestines are a long, continuous tube running from the stomach to the anus. Most absorption of nutrients and water happen in the intestines. The intestines include the small intestine, large intestine, and rectum.

Digestive System



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The major function of the large intestine is to absorb water from the remaining indigestible food matter and transmit the useless waste material from the body. The small intestine is the part of the intestines where 90% of the digestion and absorption of food occurs, the other 10% taking place in the stomach and large intestine. The main function of the small intestine is absorption of nutrients and minerals from food.