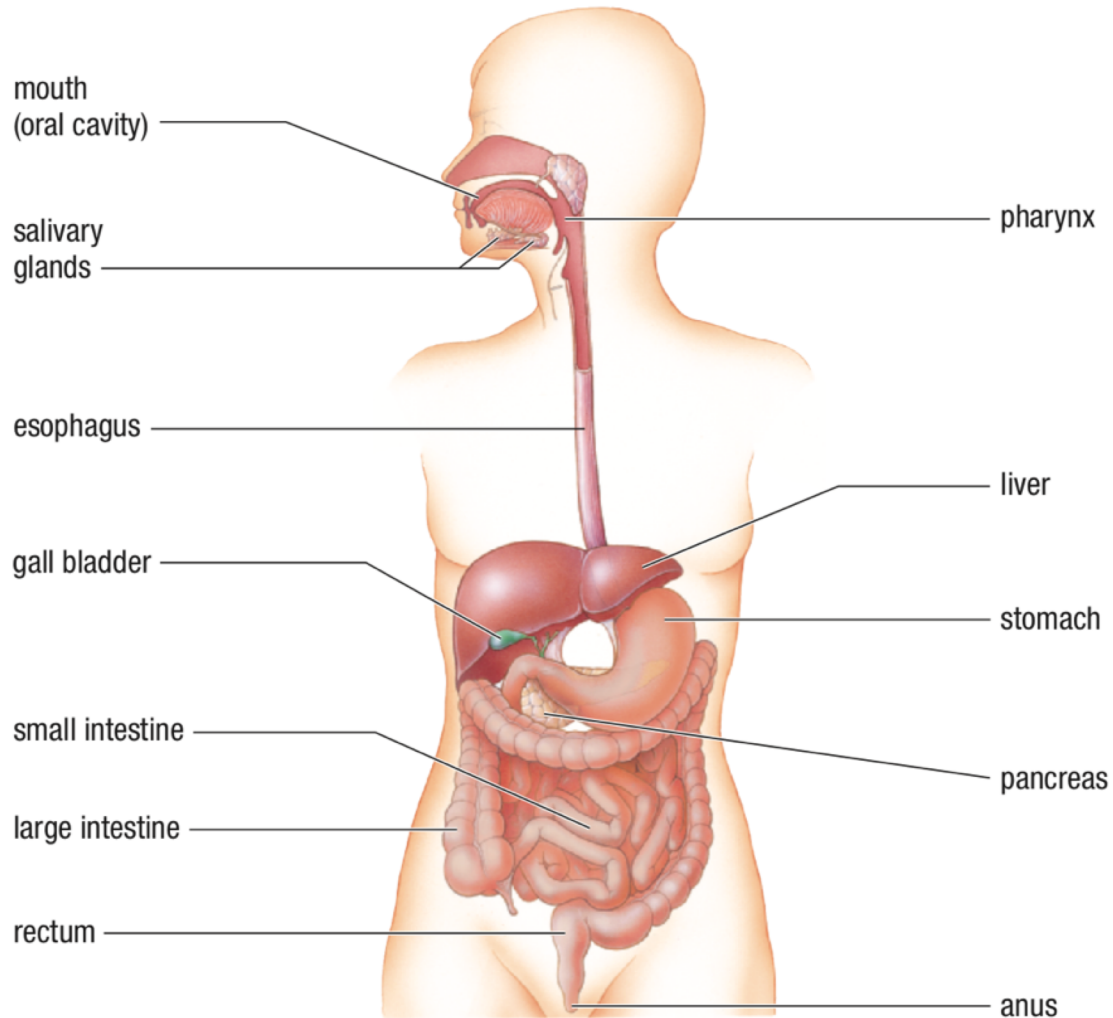


# The Digestive System

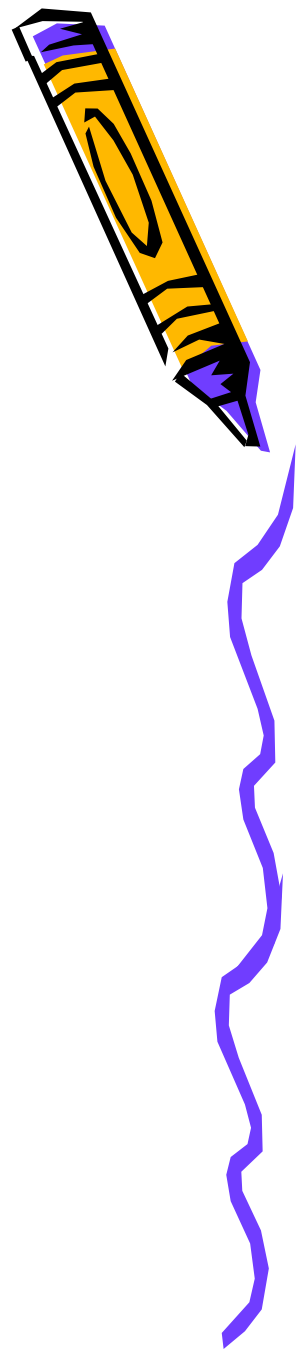


## The Structure of the Human Digestive System

The human digestive system is also a complete digestive system. Unlike that of the earthworm, the digestive tract of humans is much longer than the body (**Figure 4**). Often referred to as the **gastrointestinal tract (GI tract)**, the human digestive tract is approximately 7 m to 9 m long, depending on the age and size of the individual.



**Figure 4** The human digestive system and accessory organs

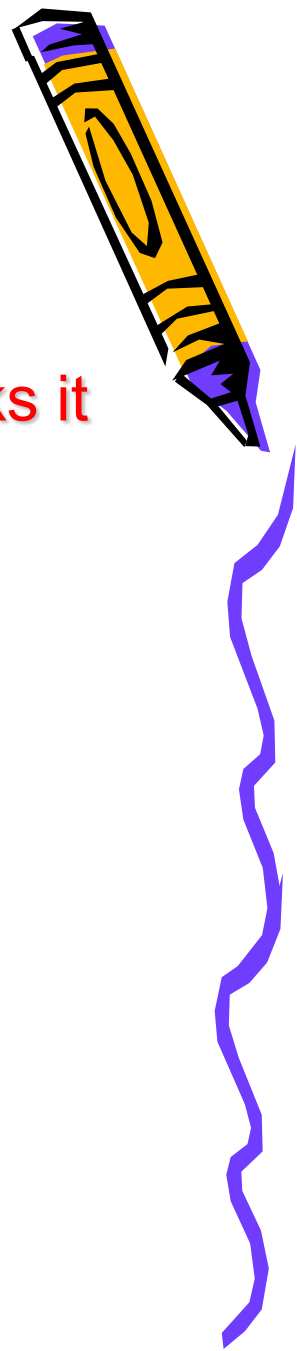


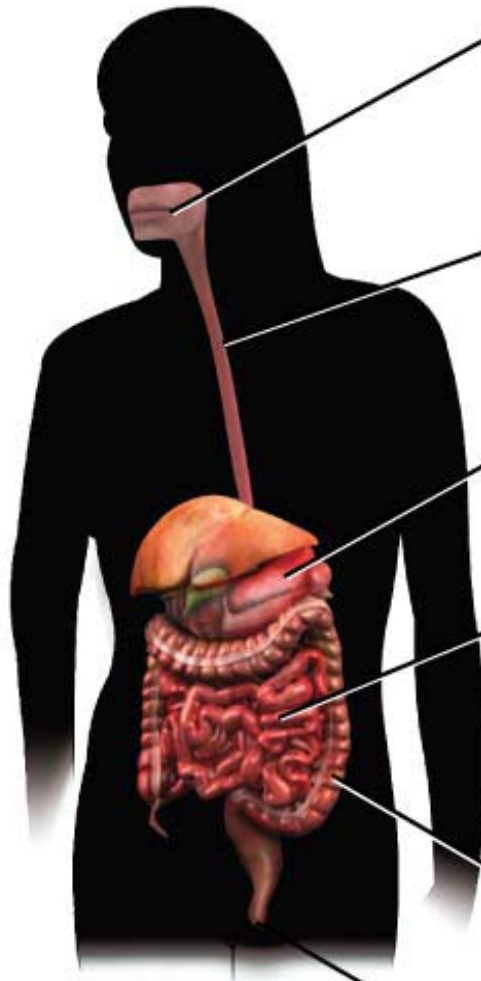
## The Digestive Tract

This is the organ system that takes in food, breaks it down, and removes the remaining waste from the body

**The human digestive tract includes:**

- \*mouth**
- \*esophagus**
- \*stomach**
- \*small intestine**
- \*large intestine**
- \*anus or rectum**





**mouth**

Digestion begins in the mouth. Food is partly broken down by the action of saliva, which breaks down starches into simpler molecules.

**esophagus**

After being swallowed, food enters the esophagus, a long tube that runs from the mouth to the stomach.

**stomach**

The stomach is a large saclike organ that churns food and bathes it in strong acid.

**small intestine**

After leaving the stomach, food enters the small intestine. Here, chemicals produced in the liver, pancreas, and intestine break down food further.

**large intestine**

Food next passes into the large intestine, where the digestive process is finished.

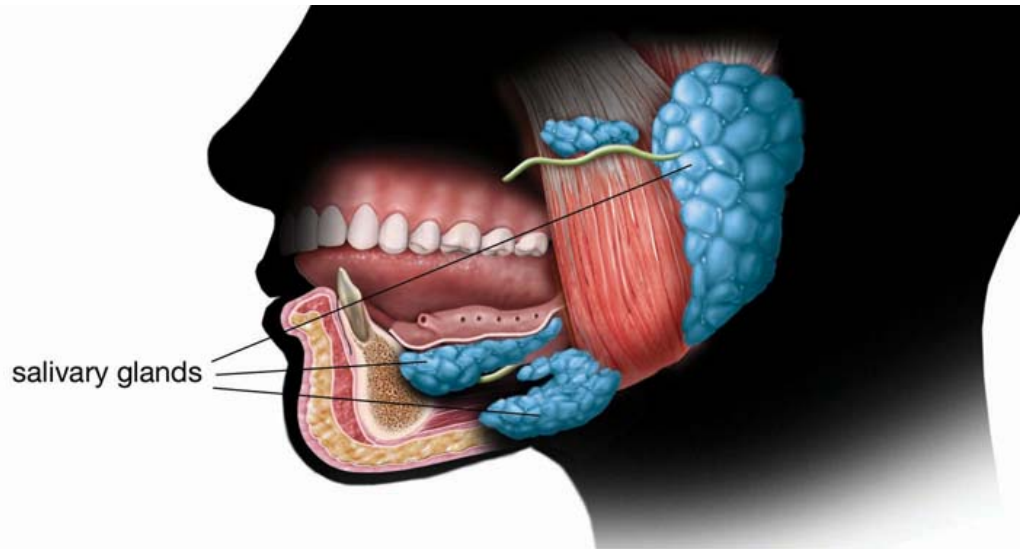
**anus**

Wastes exit the body through the opening at the end of the digestive system.

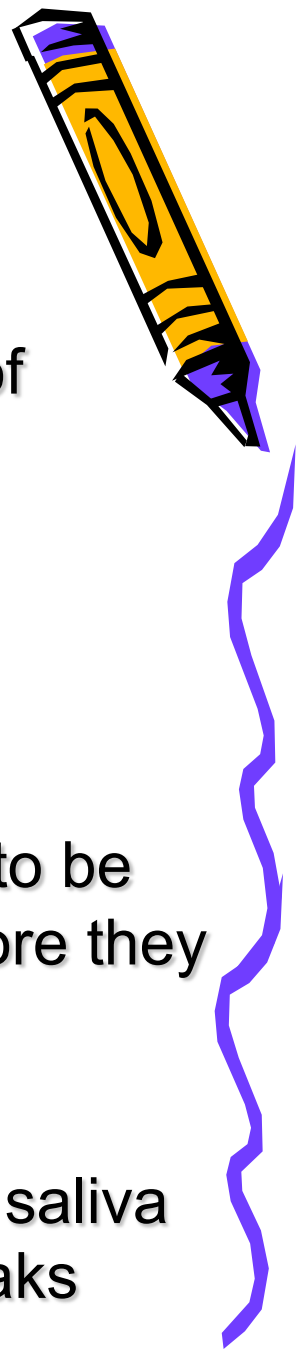


# The Mouth

- Digestion begins as soon as food enters your mouth.
- Teeth and tongue break apart food into smaller pieces.
- Saliva is a mixture of water and chemicals that softens the food as you chew. (You produce 1.5 L of saliva each day)



# Chemical Breakdown of Carbohydrates

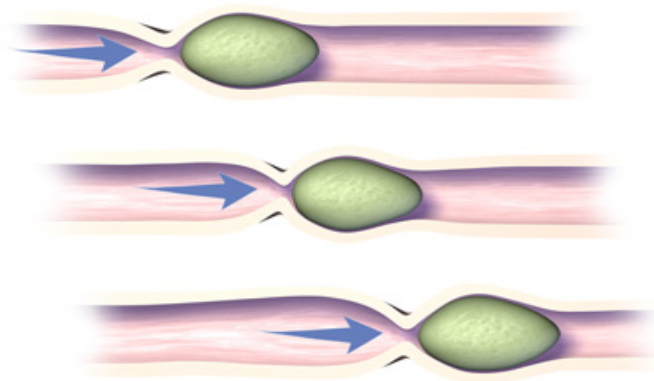


- The foods you eat are made up of 3 major groups of nutrients:
  - 1) Proteins
  - 2) carbohydrates
  - 3) Fats
- These are all large molecules that need to be broken down into smaller molecules before they can be used by the bodies tissues.
- Chemical breakdown begins with saliva, saliva contains amylase, a type of enzyme breaks down carbohydrates.

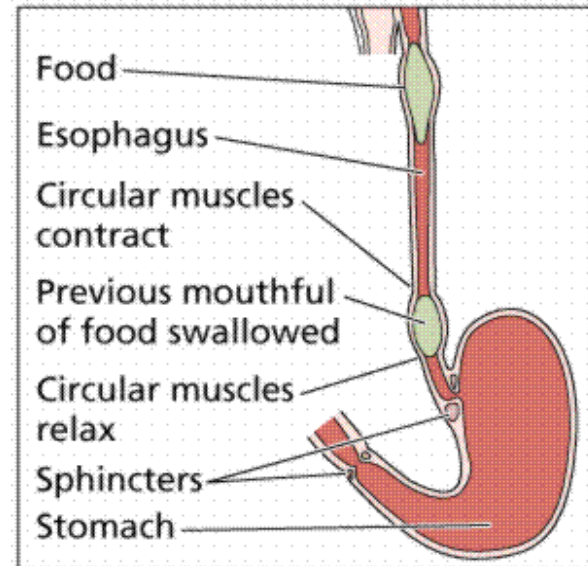


# The Esophagus

- After you swallow, food moves to the muscular tube that links the mouth and stomach, called the esophagus.
- The food moves down the esophagus due to rhythmic, muscular contractions of the smooth muscle that lines the esophagus.
- This motion is called **peristalsis**.



## Peristalsis

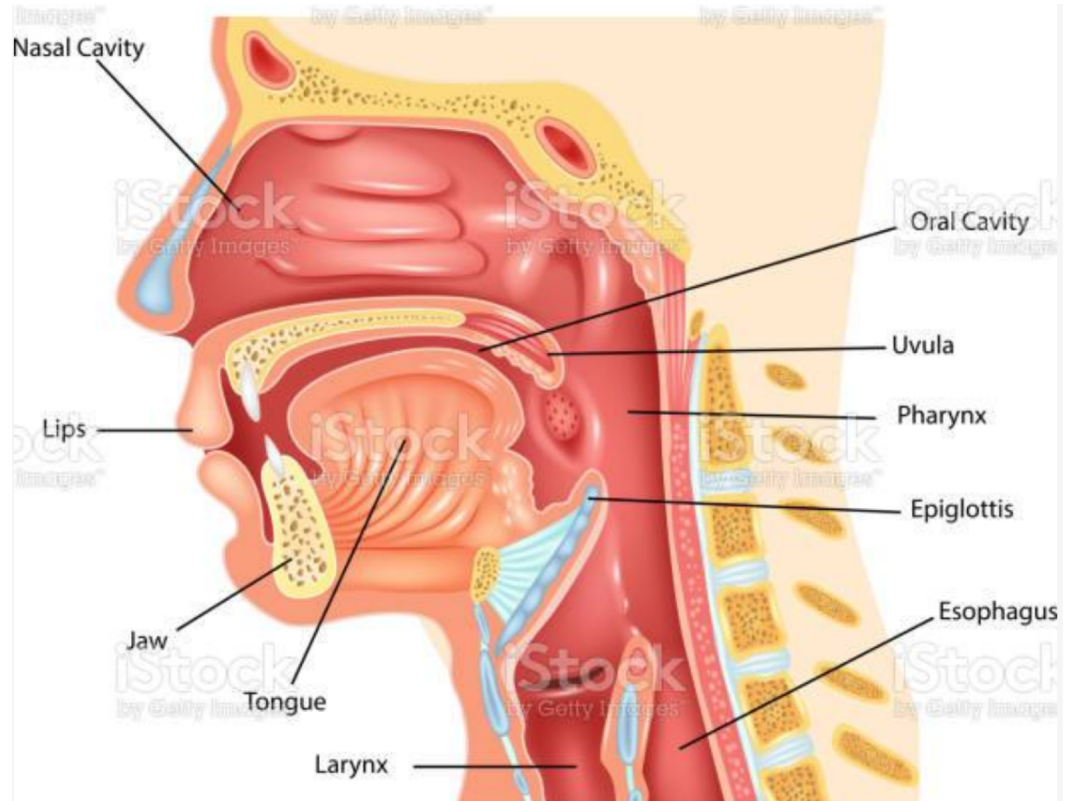


# Q: Have you ever choked on food?

- This happens when the opening to the trachea is not properly covered.

The food enters the trachea (which is a part of the respiratory system), which can completely block air from entering your lungs.

**FIRST AID IS  
THEN NEEDED!**

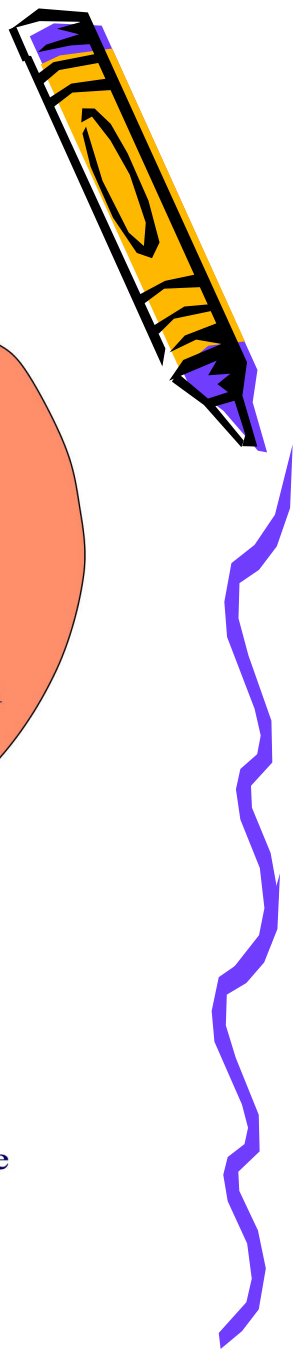
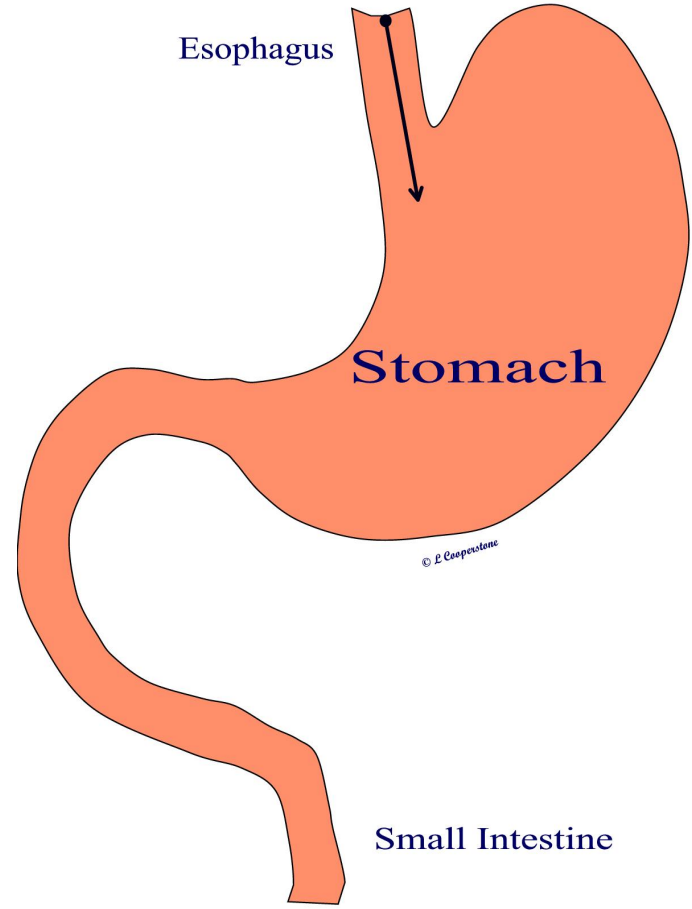
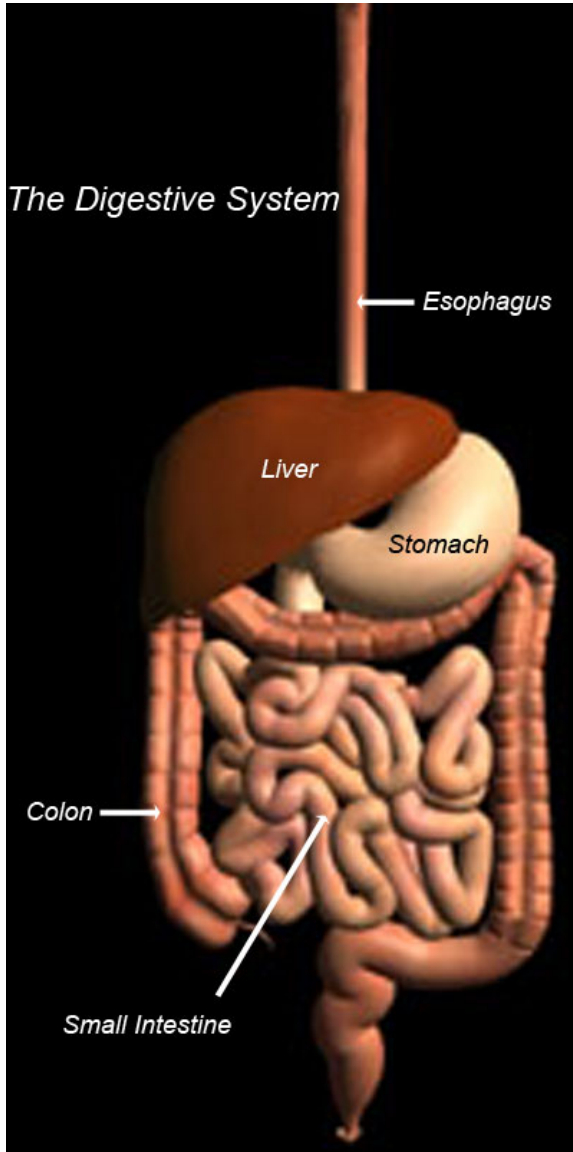


# The Stomach

- This is a muscular organ that continues the mechanical and chemical breakdown of food (uses muscles and acids to churn the food)
- The mixture of broken down food and stomach acids is called *chyme* (it looks like green pea soup!!!)



*The Digestive System*



# Intestines

- The intestine extends from the stomach to the anus and is divided into the small and large intestine.

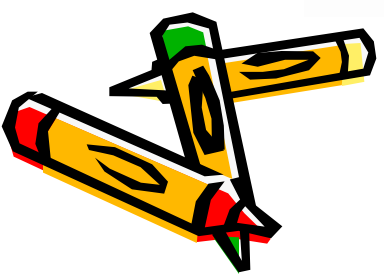
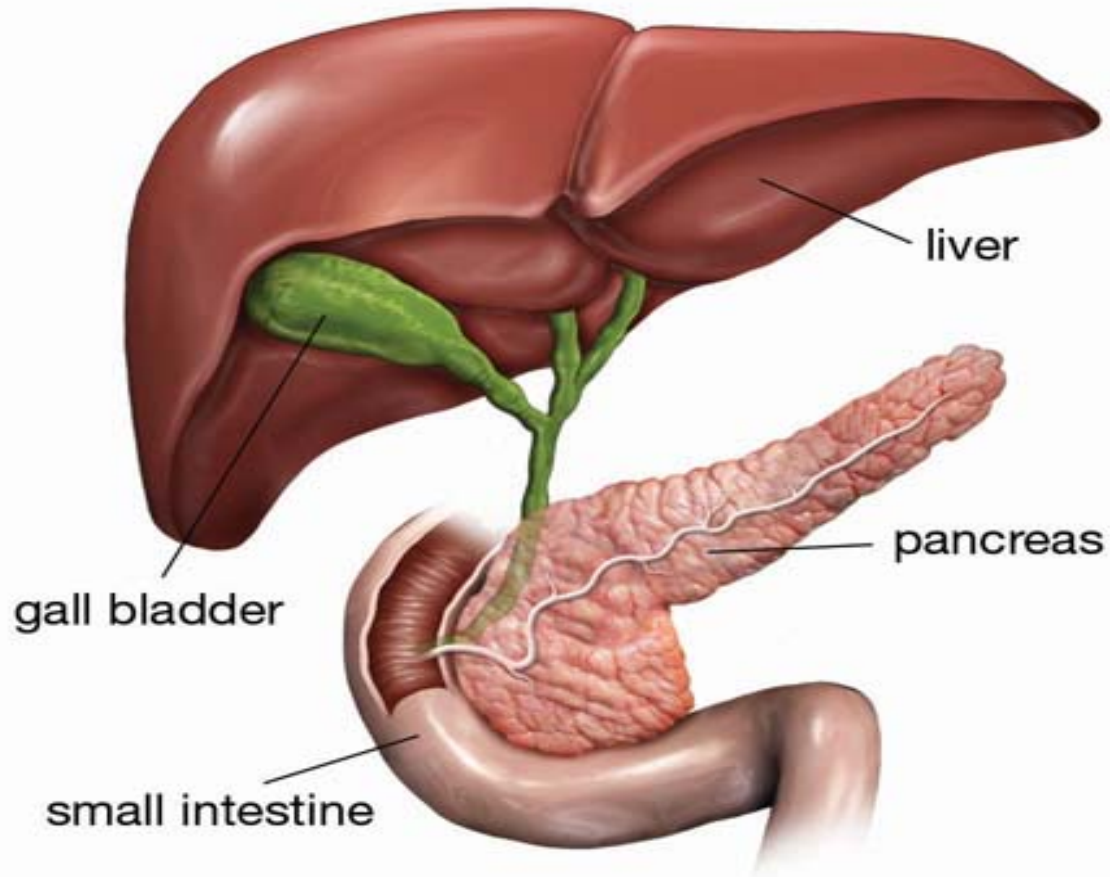
## SMALL INTESTINE:

- The small intestine is about *6m long* and *2.5cm in diameter*
- It absorbs most of the nutrients from food and allows diffusion of the nutrients into the bloodstream

## LARGE INTESTINE:

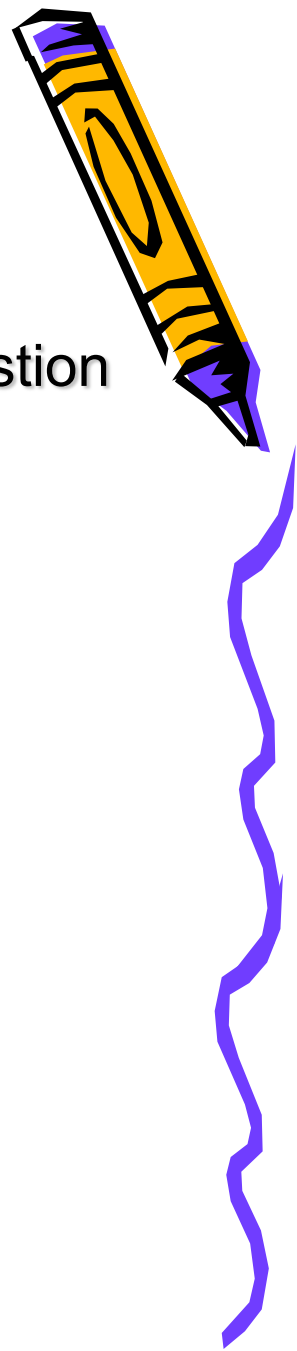
- The large intestine (*colon*) is about *1.5m long* and *7.5cm* in diameter
- It absorbs water from undigested food and eliminates the solid material left behind from the anus as feces.





# Accessory Organs

- The liver, pancreas, and gall bladder help with the digestion of food
- **Liver** – produces digestive chemicals and bile to break down fats
- **Pancreas** – produces digestive chemicals and insulin, which regulates cells absorption of sugar
- **Gall bladder** – stores chemicals and bile from liver and releases them when there is food to be digested.



# Homework

- Read pages 68-69

The Digestive System

Complete Questions # 1-2 on Page 71

