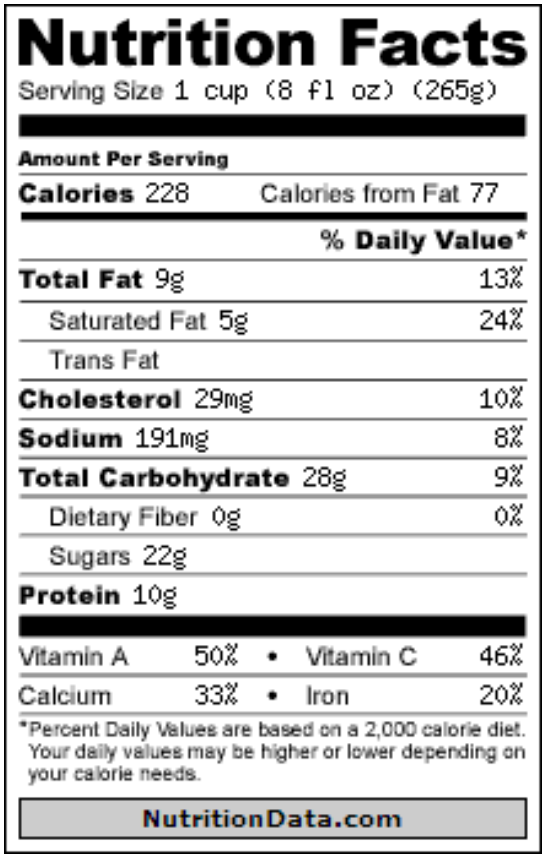
DIGESTION

Digestion is the breakdown of large complex organic materials into smaller components, which can be used by the body.



Nutrition Facts

Serving Size 1 cup (8 fl oz) (265g)

Amount Per Serving

Calories 228	Calories from Fat 77
	% Daily Value*
Total Fat 9g	13%
Saturated Fat 5g	24%
Trans Fat	
Cholesterol 29mg	10%
Sodium 191mg	8%
Total Carbohydrate 28g	9%
Dietary Fiber 0g	0%
Sugars 22g	
Protein 10g	

Vitamin A	50%	• Vitamin C	46%
Calcium	33%	• Iron	20%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

NutritionData.com

<u>Nutrients</u> are chemicals that can be used by the body.

Basic structure

You may remember the basic structure of the digestive system from earlier grades. Write down as many organs in the digestive system as you can remember. Then complete the activity on the next page.

stomach

gall bladder

large intestine

salivary glands

small intestine

appendix

tongue

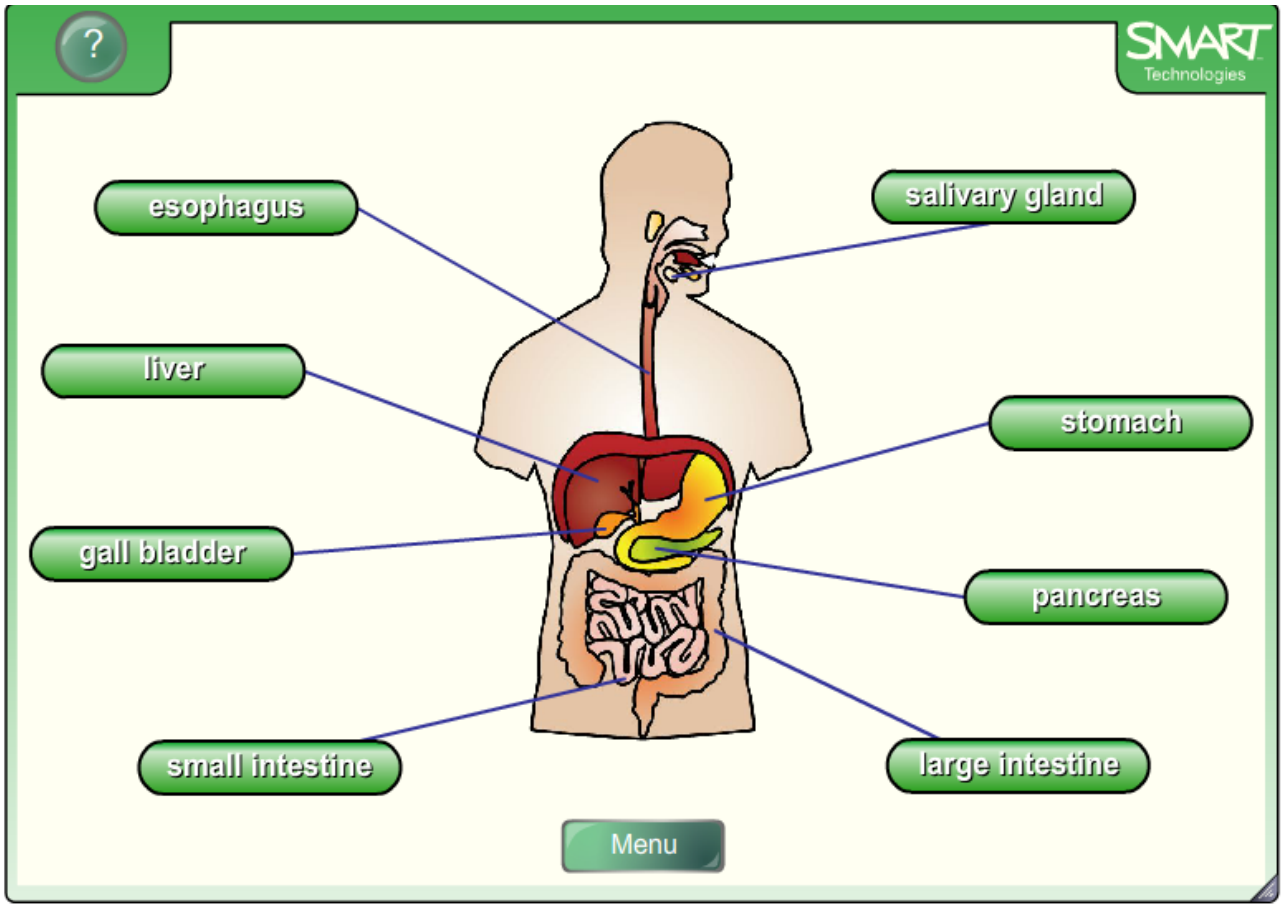
mouth

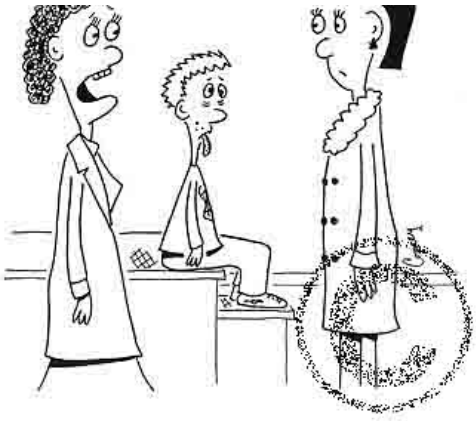
pancreas

teeth

liver

esophagus


?
SMART Technologies
esophagus
salivary gland
liver
stomach
gall bladder
pancreas
small intestine
large intestine
Menu



"Eating the poinsettia didn't make him sick. It was the three pounds of potting soil."

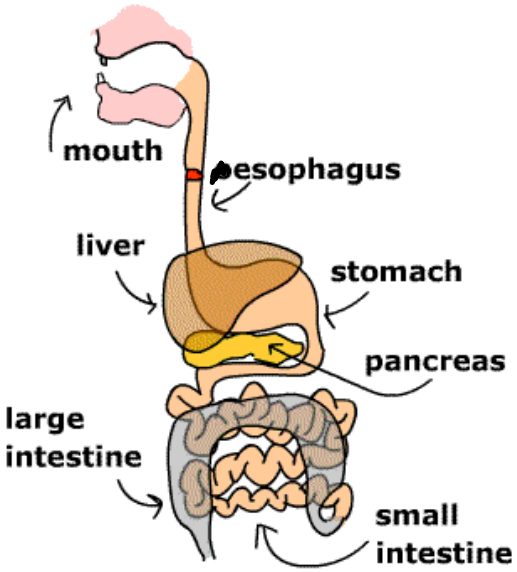
Ingestion- Taking of food.

Digestion- Breakdown of food.

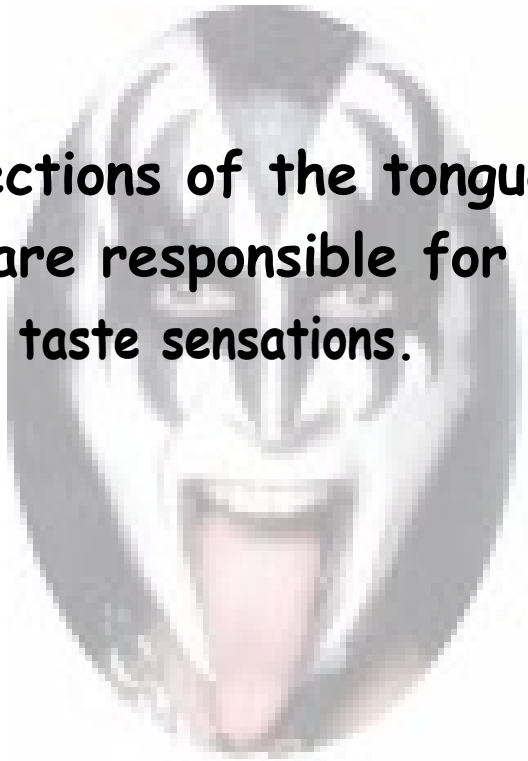
Absorption- Transport of digested nutrients to body tissues.

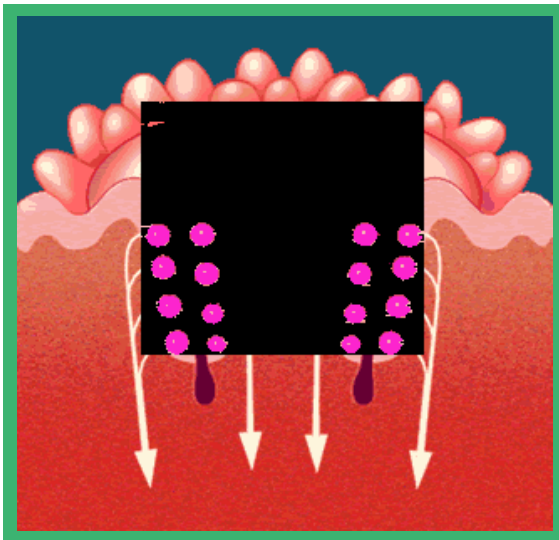
Egestion- Removal of waste.

As you guessed, digestion begins in the mouth with the physical breakdown of food. Salivary glands aid by secreting amylase enzymes, which break down starch into carbohydrates, called dextrins.

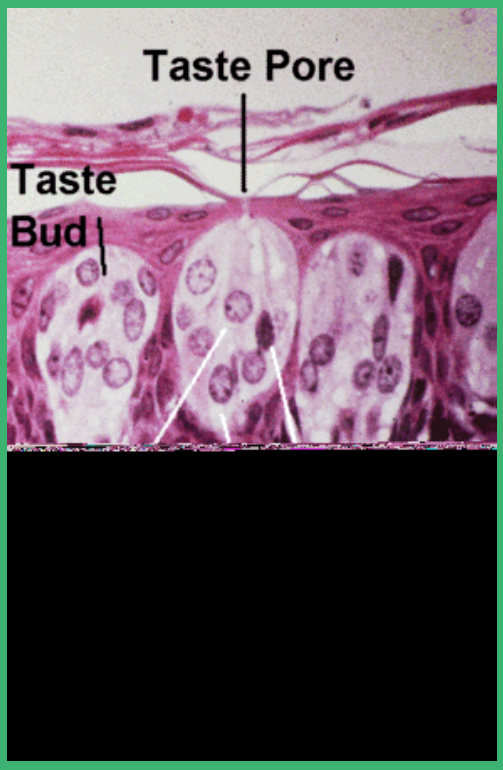


Sections of the tongue are responsible for taste sensations.





Food particles must be in a solution before they can penetrate the taste buds of the tongue.

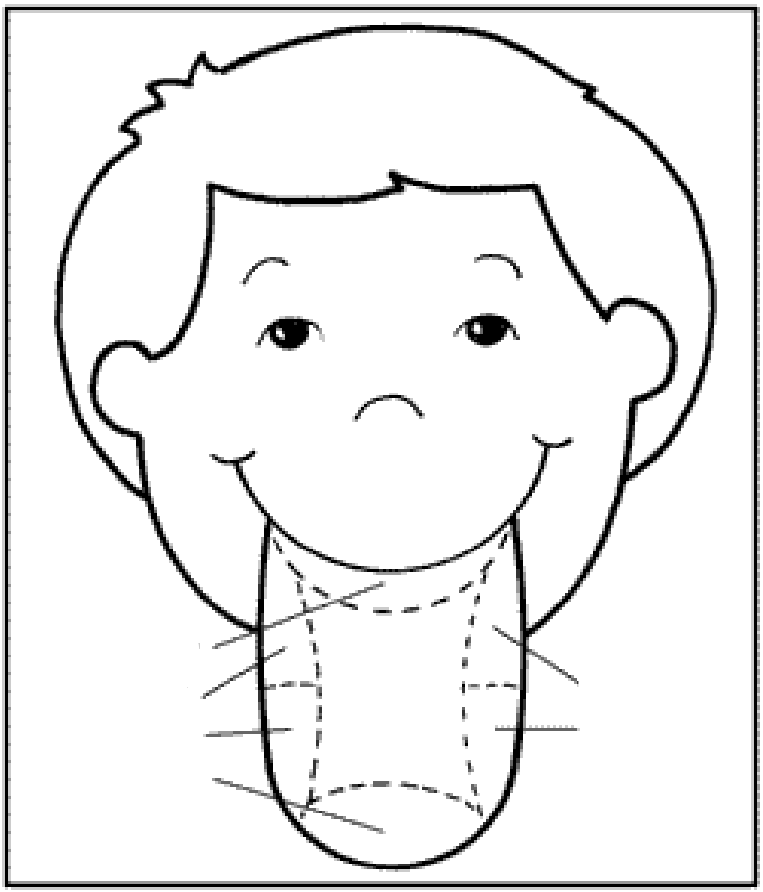


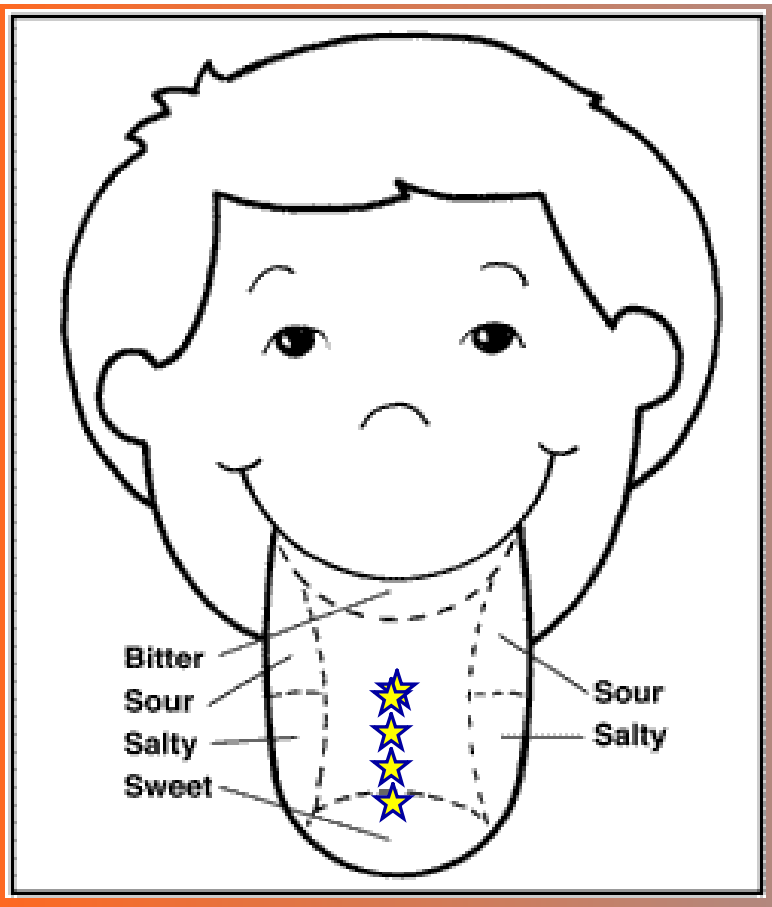
Saliva

How many liters of saliva does an adult produce in a day?

0.5 liters	0	1.5 liters	2
1.0 liters	6	2.0 liters	7

Click here for the answer





Forward

Peristalsis

How do you think food moves down the esophagus?

Click here for the answer

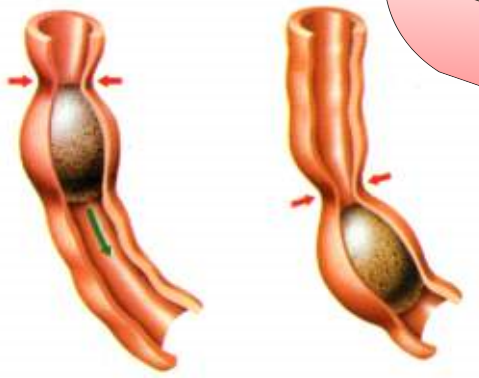
1) Falls down due to gravity 0

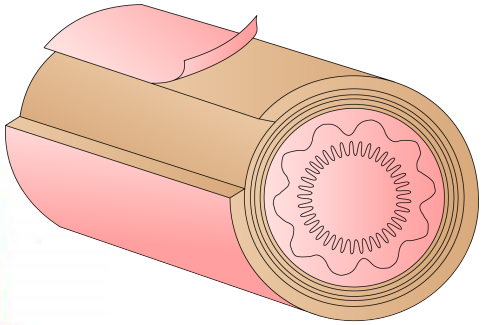
2) Fine hairs move the food particles along 0

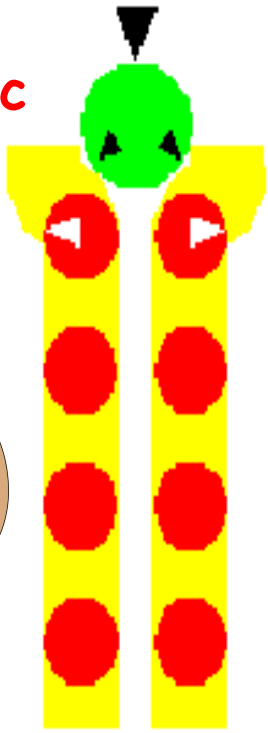
3) Muscles in the esophagus contract and relax 0

4) Your stomach sucks it down like a vacuum 0

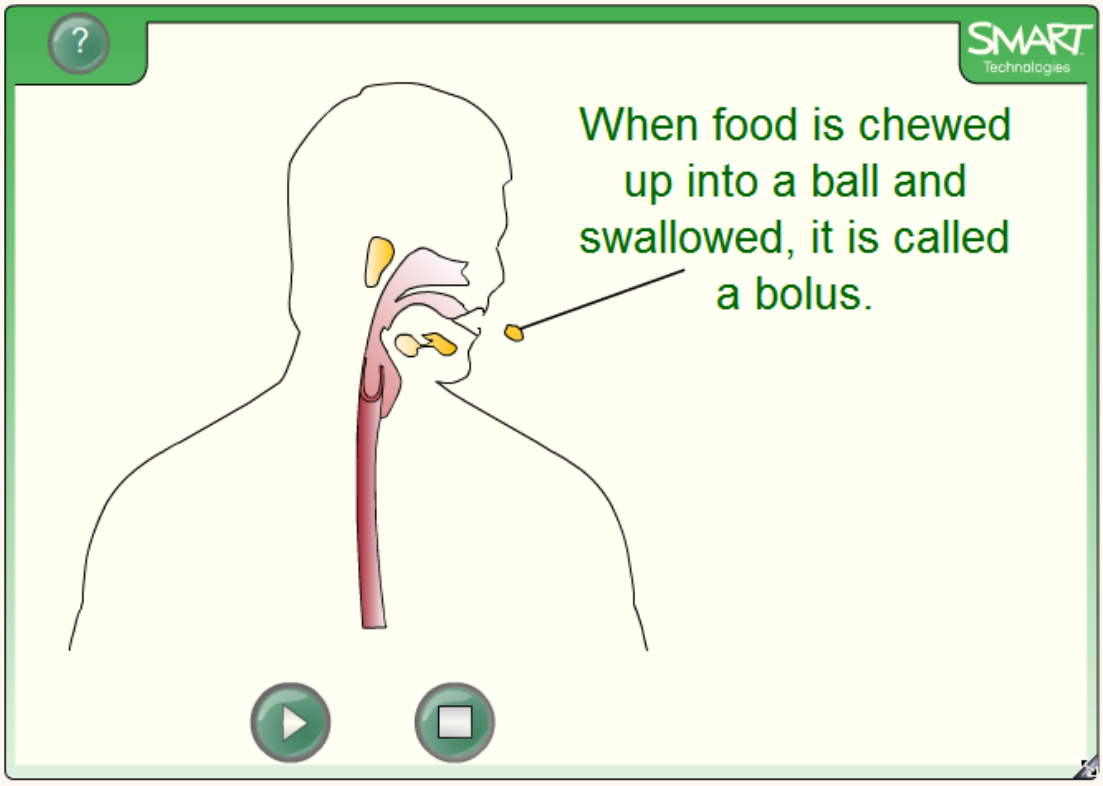
Food travels from mouth to esophagus. It moves by rhythmic muscle contractions called peristalsis to the stomach.



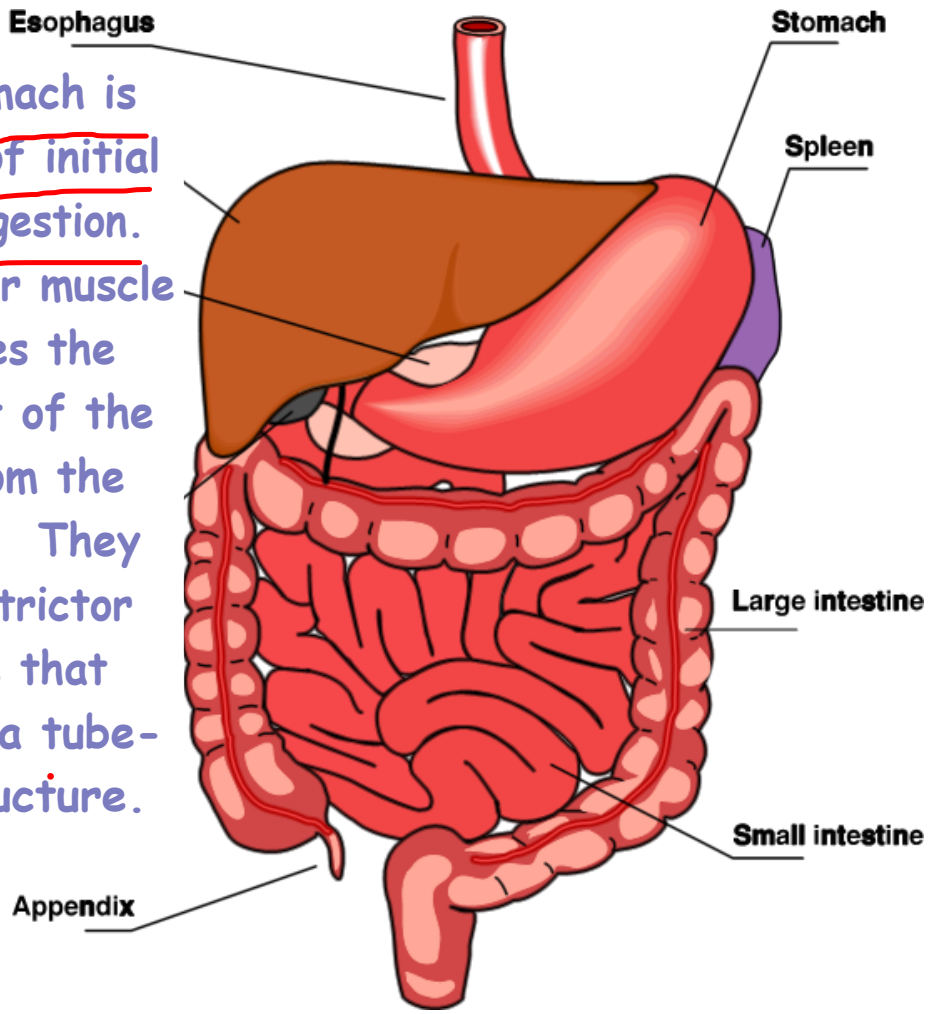




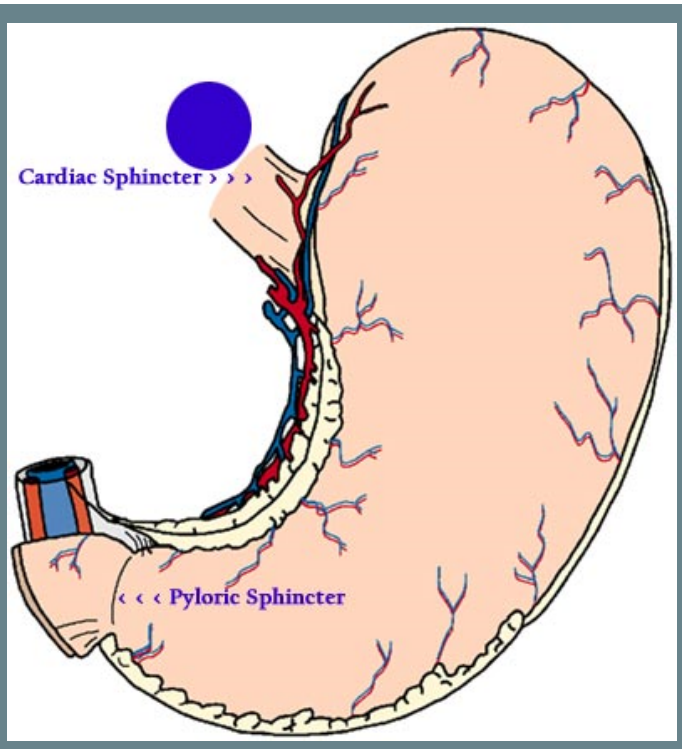
Food moves down the esophagus in a process called *peristalsis*, shown in the animation below. After you have watched the animation, describe this process in your own words on the next page.



The stomach is the site of initial protein digestion. A sphincter muscle regulates the movement of the food from the stomach. They are constrictor muscles that surround a tube-like structure.



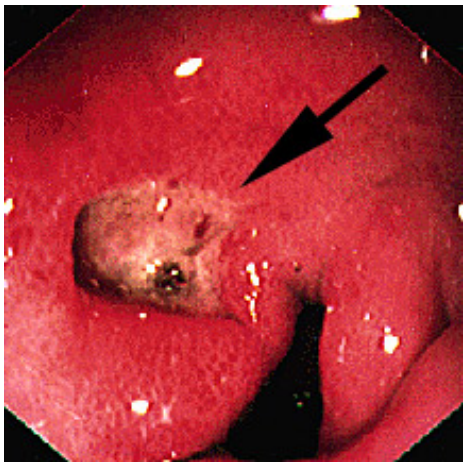
A cardiac sphincter contracts and closes the opening to the stomach. When it relaxes, food may enter. The pyloric sphincter regulates movement of food and stomach acids to the small intestine.



The stomach contains secretory cells, gastric juices, mucous cells (protective coating), parietal cells (secrete hydrochloric acid), peptic cells (secretes a protein-digestive enzyme called pepsinogen). Rennin is another stomach enzyme that slows the movement of milk in the gastrointestinal tract thus allowing more time for breakdown and absorption.

Pepsin-initial breakdown of proteins

Ulcers form when the protective lining of the stomach breaks down exposing the cell membrane to digestive enzymes.



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