DIGESTION

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

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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

Nutrients are chemicals that can be used by the body.

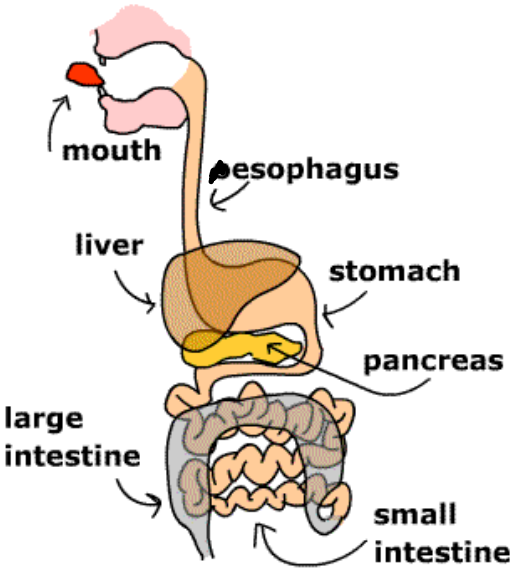
"Eating the poinsettia didn't make him sick. It was the three pounds of potting soil."

Ingestion- Taking of food.

Digestion- Breakdown of food.

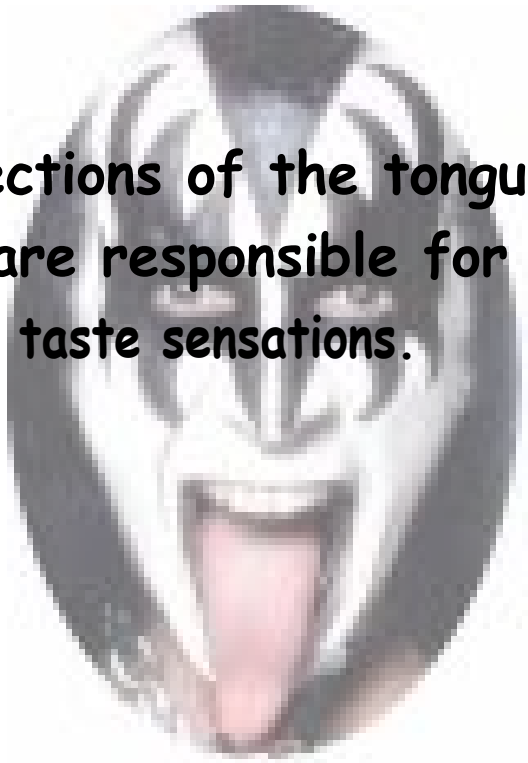
Absorption- Transport of digested nutrients to body tissues.

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.



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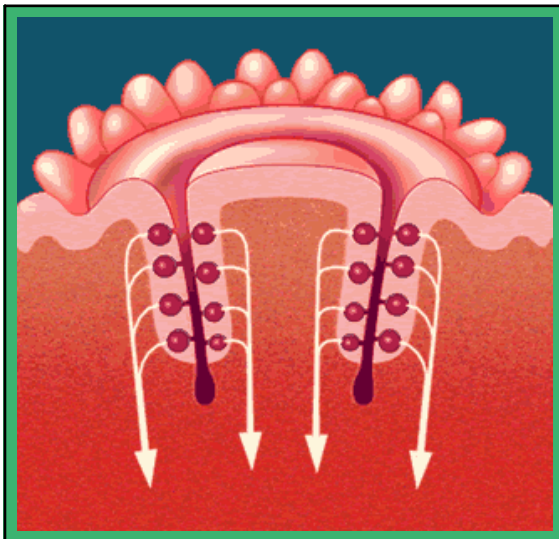
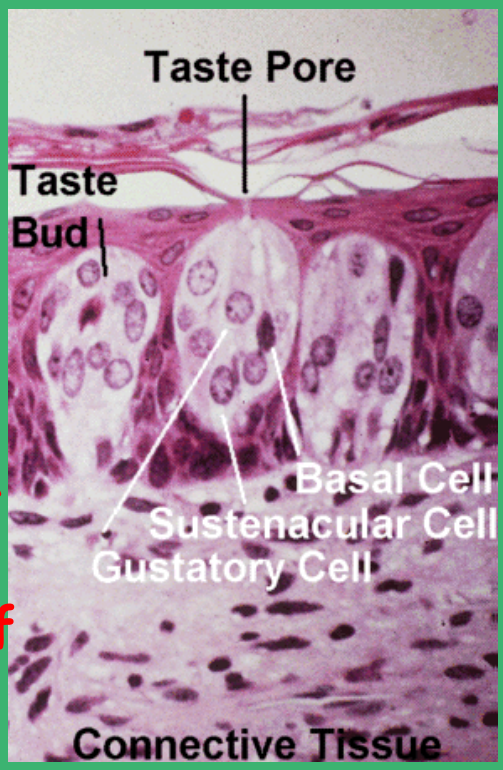


Food particles must be in a solution before they can penetrate the taste buds of the tongue.



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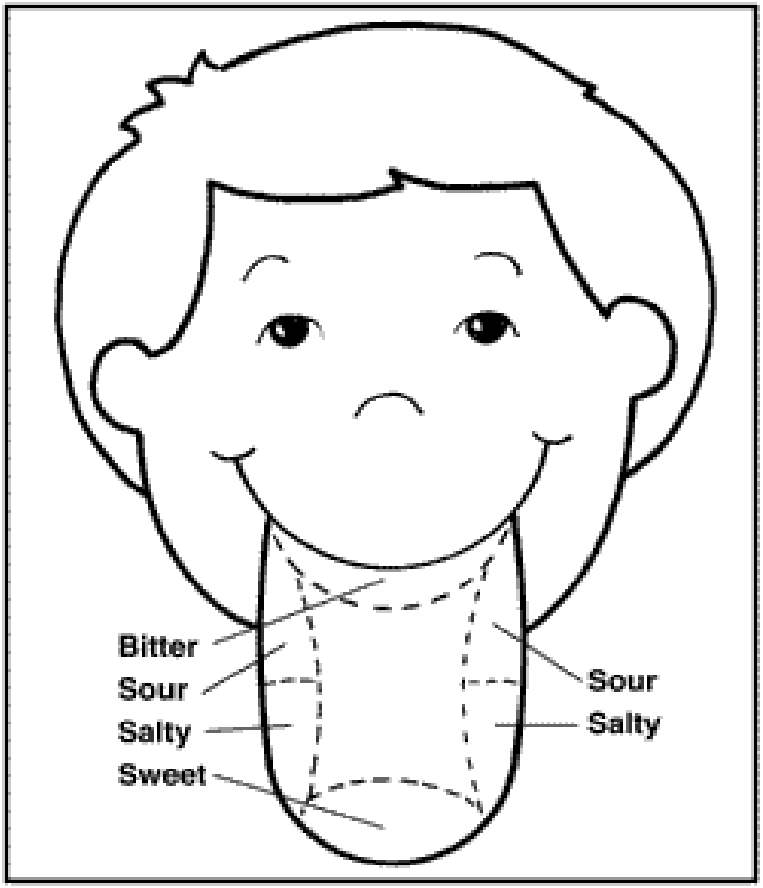

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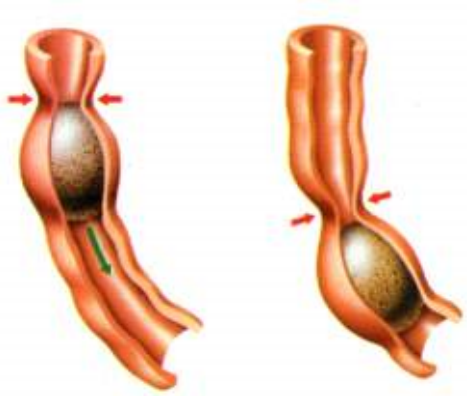
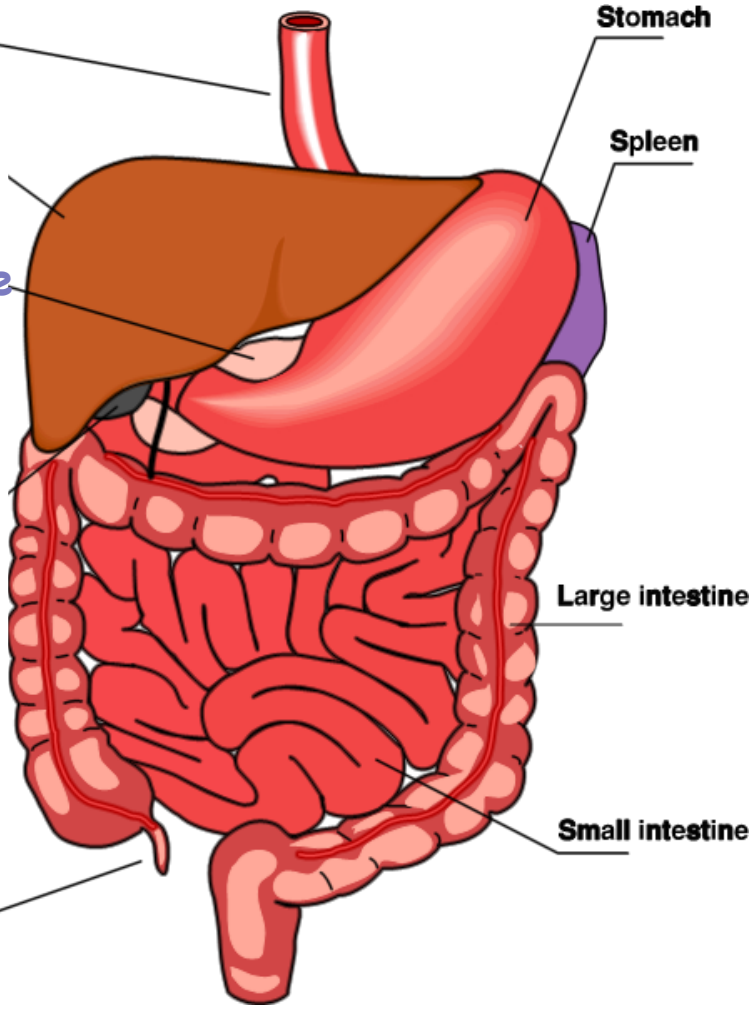
Food travels from mouth to esophagus. It moves by rhythmic muscle contractions called peristalsis to the stomach.

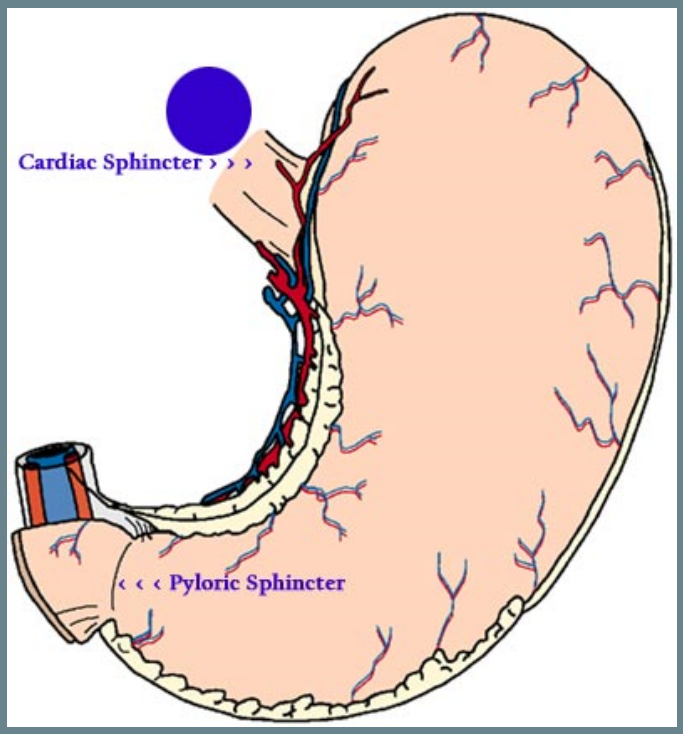


The stomach is the site of initial protein digestion. A sphincter muscle regulates the movement of the food from the stomach. They are constrictor muscles that surround a tube-like structure.



Intestines

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.



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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.

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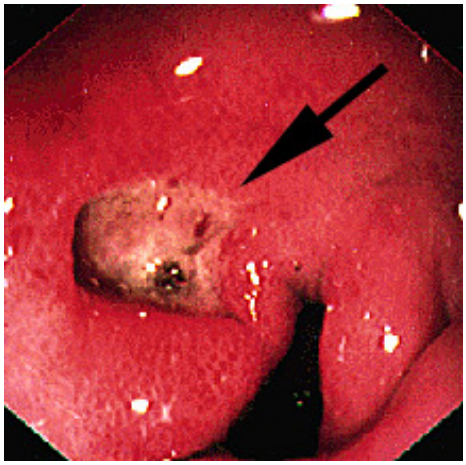
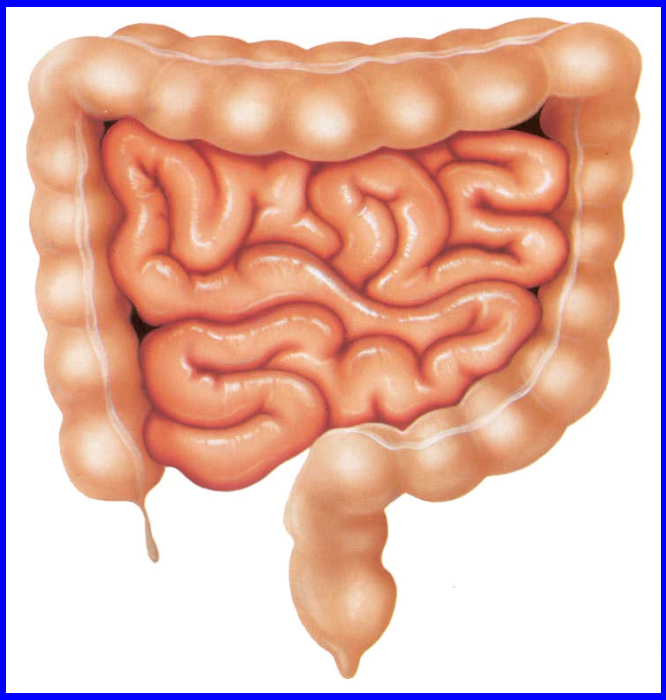
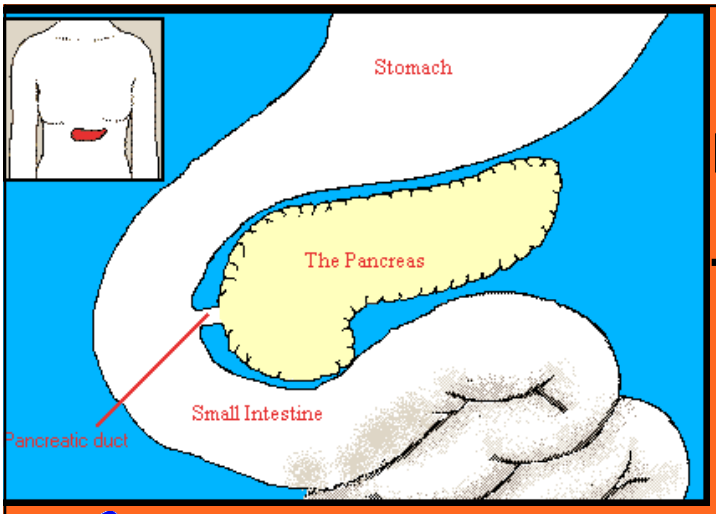
Ulcers form when the protective lining of the stomach breaks down exposing the cell membrane to digestive enzymes.

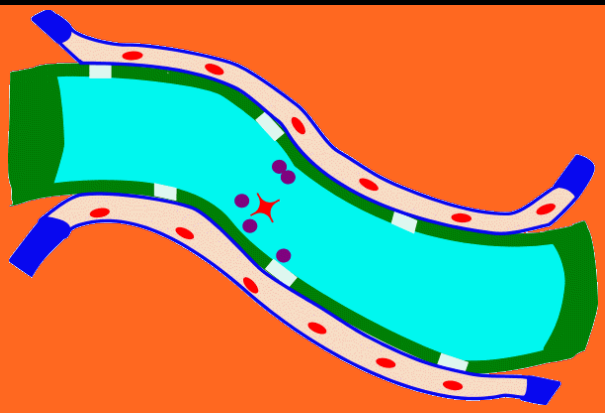




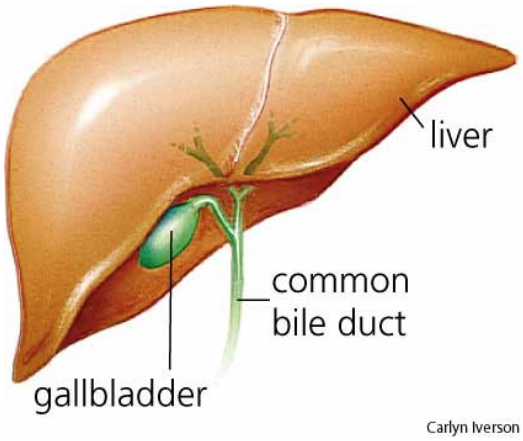
Small Intestine and Pancreas

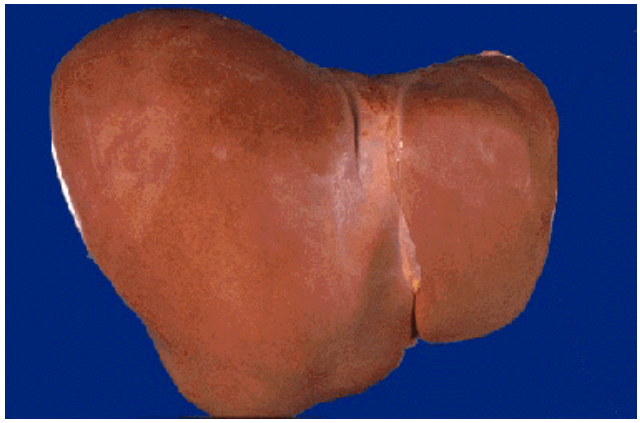
7m long and 2.5cm in diameter. The duodenum is the first segment and the area of greatest digestion. The food enters here soaked with HCl. The small intestine is protected by bicarbonate ions released by the pancreas. They are released by the high concentration of acid (the HCl) thus neutralizing the acid.





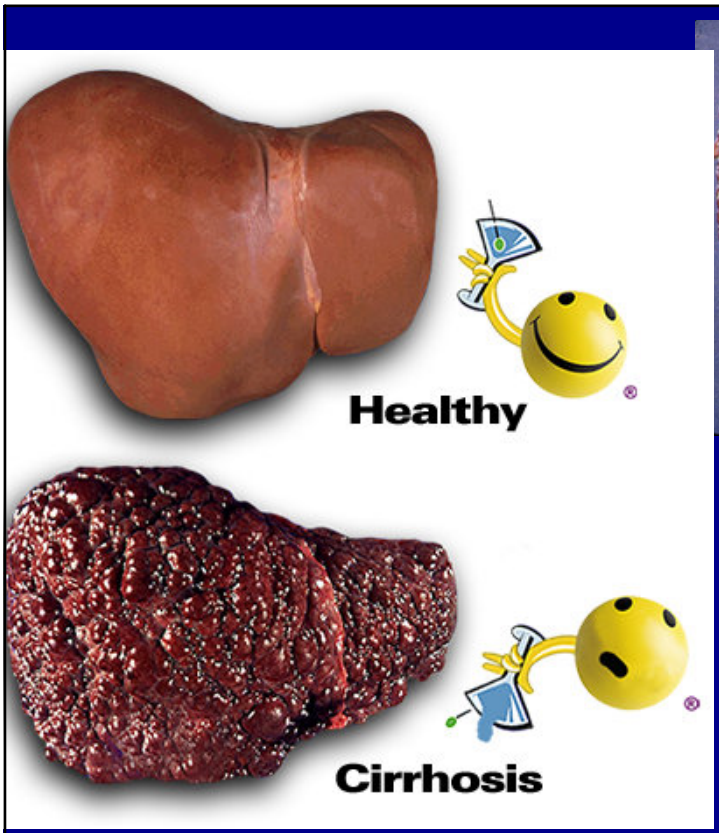
Pancreas secretions also allow the breakdown of proteins, carbs and lipids (fats). Trypsin and erepsin aid in the breakdown of protein. More amylase released from the pancreas helps break down the carbs. Lipases break the lipids and lactase breaks the dairy.



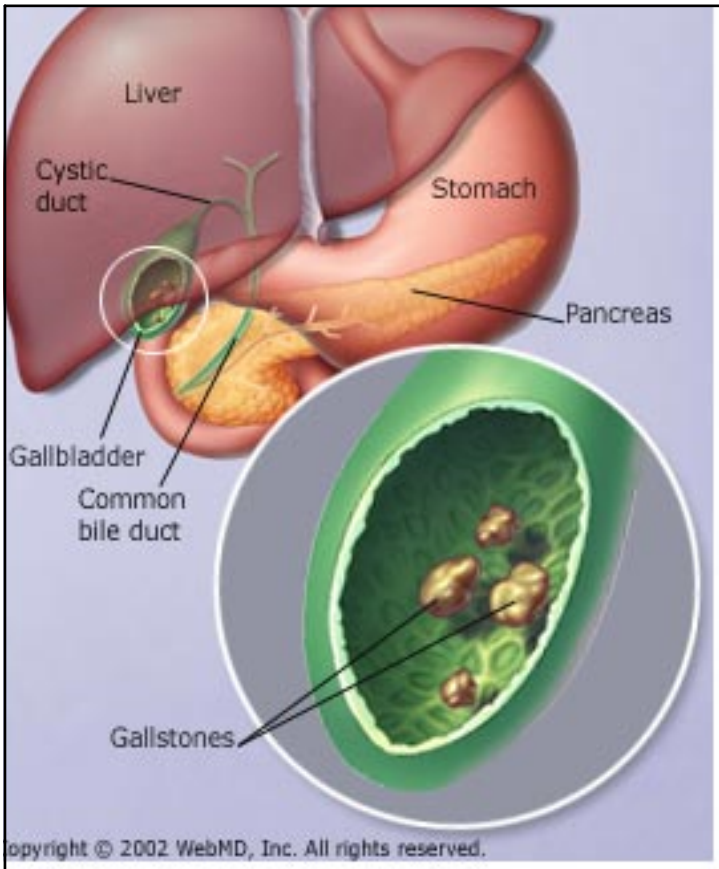


Liver and Gallbladder

Bile salts are produced in the liver and stored in the gallbladder. Carried by the bile duct to the small intestines (s.i.), it is released into the s.i. by a hormone signal. Bile breaks down fat into smaller particles. This is a physical digestion example.

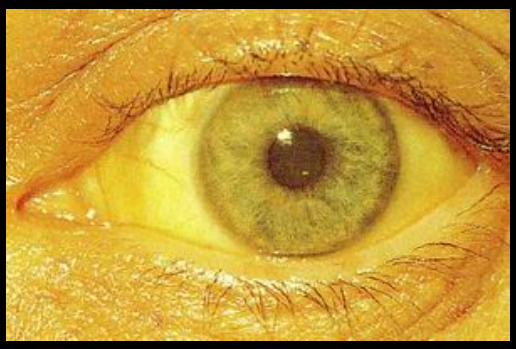


The liver stores glycogen and vitamins. It also detoxifies many substances. Cirrhosis of the liver is caused by the damage to liver cells that are replaced by connective tissue and fats.



Cholesterol is found in bile. It is involved with salt crystal formation, which may develop into gallstones. These stones may lodge into the bile duct and prevent bile from being released. Not good. Very painful.

The accumulation of salts may result in a yellowish discoloration called Jaundice.



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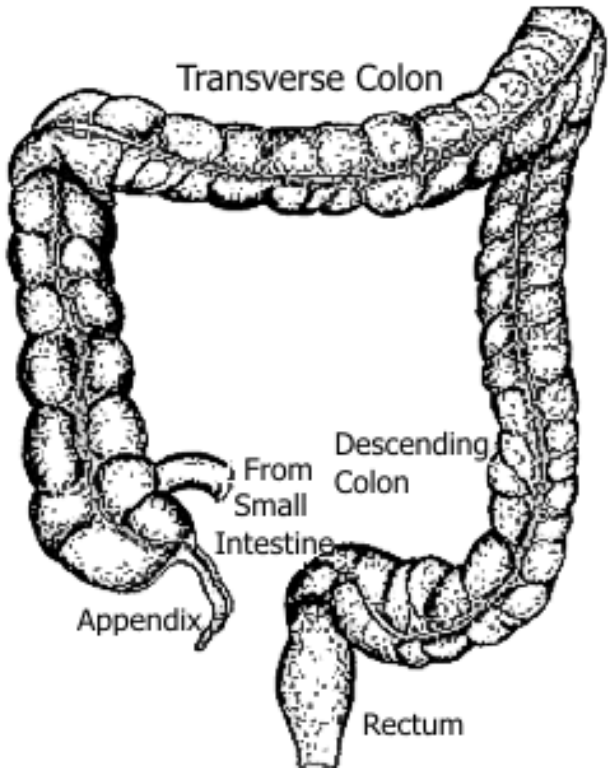

Colon

The colon is the largest part of the large intestine and it stores the water long enough for water to be absorbed. Large intestine also house bacteria, which use waste material to synthesize (make) vitamins B and K. Cellulose provides bulk, which is important for the regular movement of waste.

If a person is not regular, toxic waste remains in the body for unsafe periods of time. This may be linked to colon cancer.

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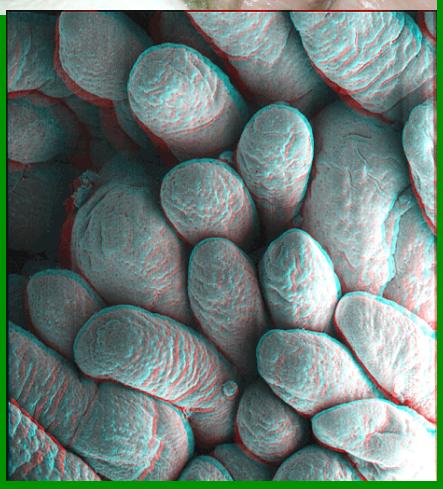

Absorption-
Fingerlike tube called villi increase the surface area of the small intestine. More absorption is allowed to take place.