

Regional state budgetary professional educational institution.
Medical College Minusinsky.

Digestive System

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Minusinsk, 2017

Digestion

- Phases Include

1. Ingestion
2. Movement
3. Mechanical and Chemical Digestion
4. Absorption
5. Elimination

Digestion

- ◉ Types

- > Mechanical (physical)

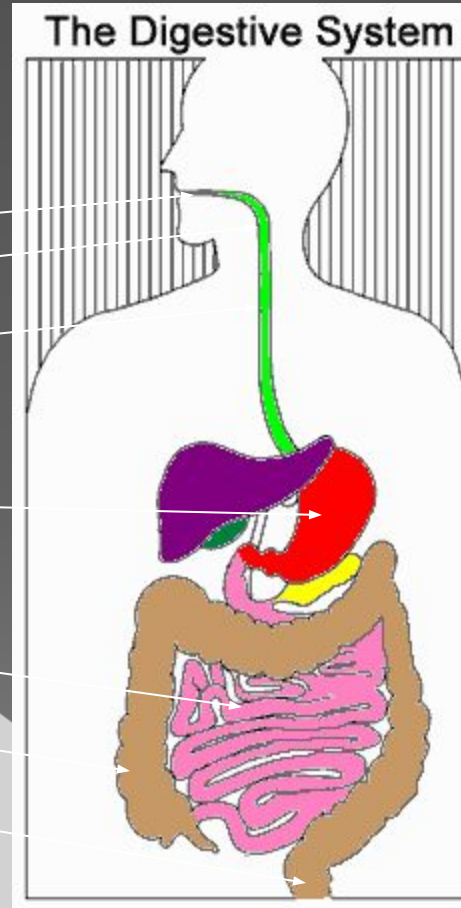
- Chew
 - Tear
 - Grind
 - Mash
 - Mix

- > Chemical

- Enzymatic reactions to improve digestion of
 - Carbohydrates
 - Proteins
 - Lipids

Digestive System Organization

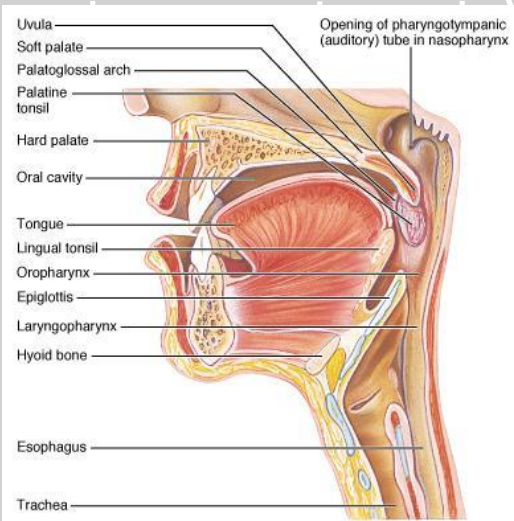
- Gastrointestinal (GI) tract
 - Tube within a tube
 - Direct **link/path** between organs
 - Structures
 - Mouth
 - Pharynx
 - Esophagus
 - Stomach
 - Small intestine
 - Large Intestine
 - Rectum



Mouth

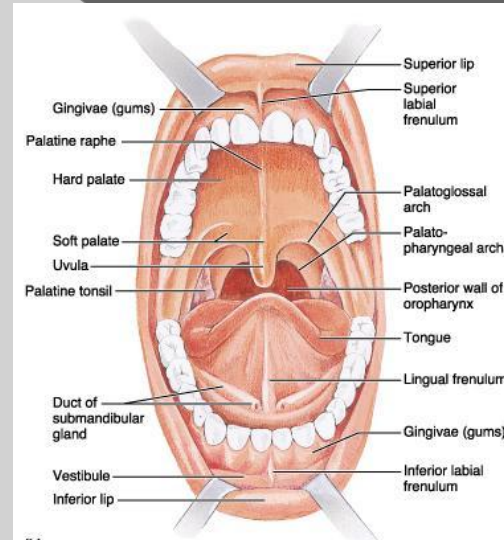
- Teeth mechanically break down food into small pieces. Tongue mixes food with saliva (contains amylase, which helps break

- Epiglottis is a flap-like structure at the back of the throat that closes over the trachea preventing food from entering it. It is



(a)

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(b)

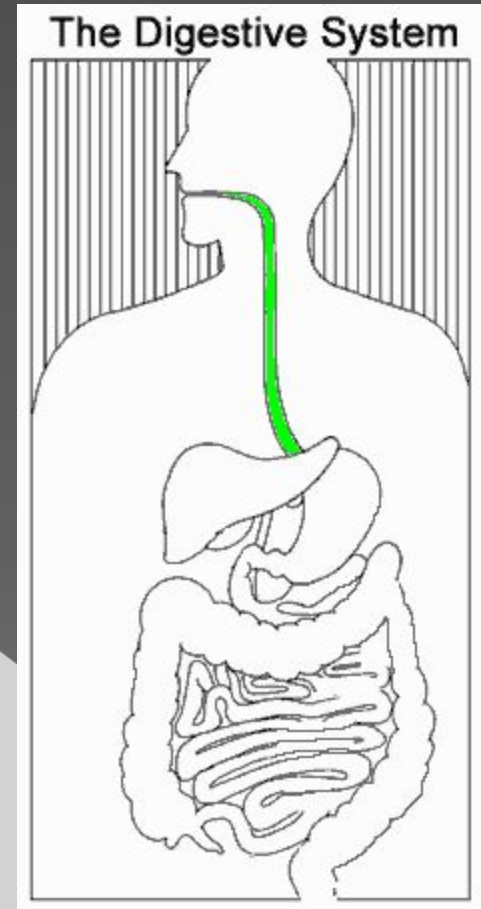
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Esophagus

- Approximately 20 cm long.
- Functions include:
 1. Secrete **mucus**
 2. Moves food from the throat to the stomach using muscle movement called **peristalsis**
- If acid from the stomach gets in here that's **heartburn**.

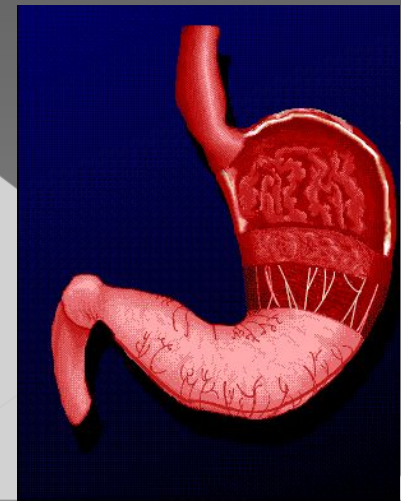
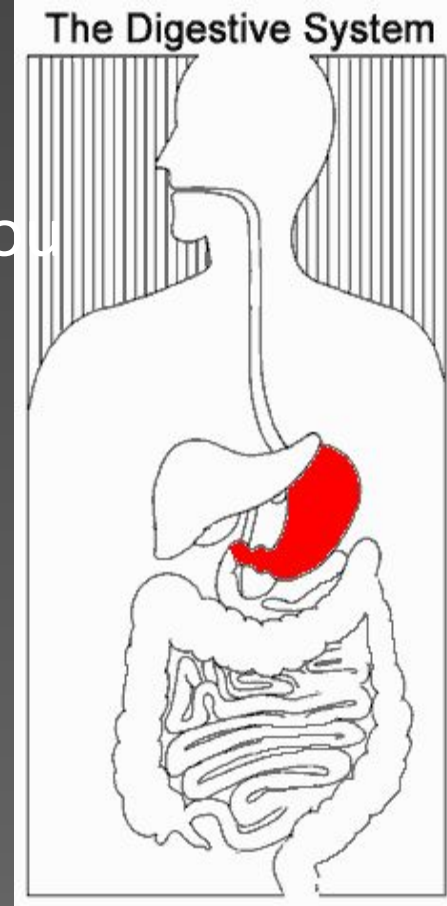
[Esophagus](#) Video

[Mouth, Pharynx and](#)



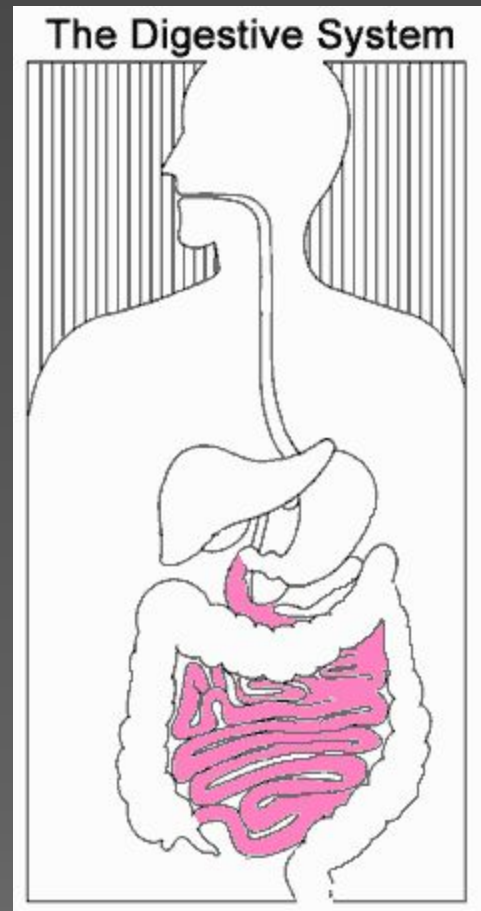
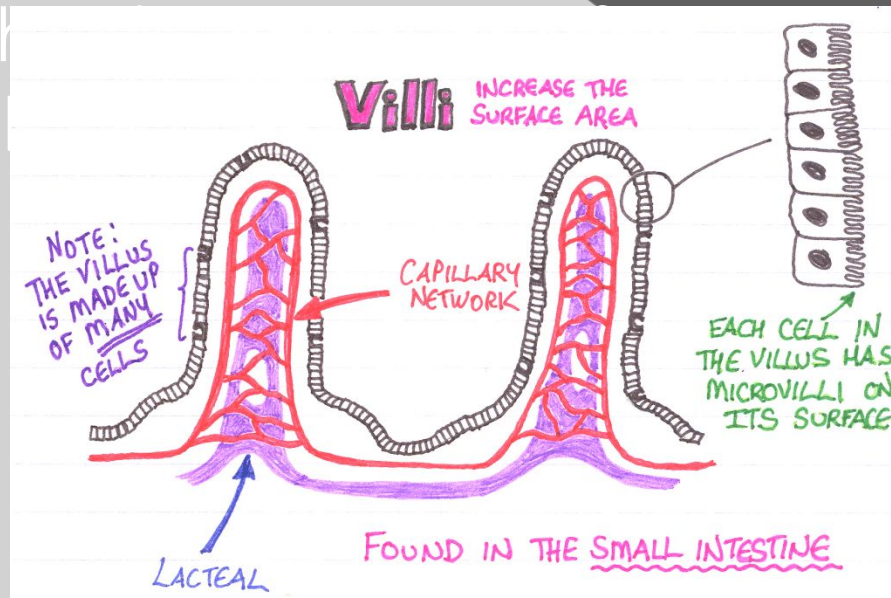
Stomach

- J-shaped muscular bag that stores the food you eat, breaks it down into tiny pieces.
- Mixes food with **Digestive Juices** that contain enzymes to break down Proteins and Lipids.
- **Acid (HCl)** in the stomach Kills Bacteria.
- Food found in the stomach is called Chyme.



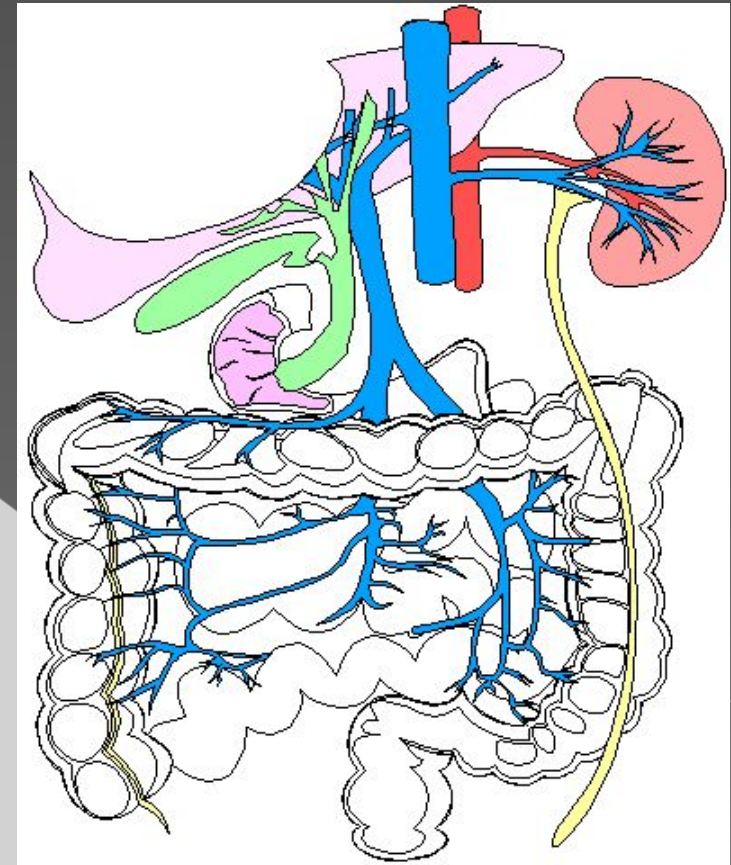
Small Intestine

- Small intestines are roughly 7 meters long
- Lining of intestine walls has finger-like projections called villi, to increase surface area.
- The villi are covered in microvilli which further increase the surface area for absorption



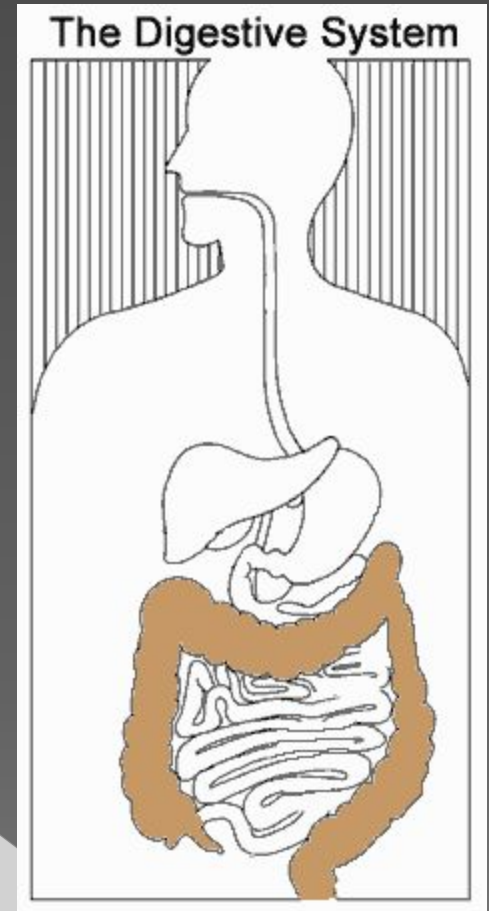
Small Intestine

- ◉ Nutrients from the food pass into the **bloodstream** through the small intestine walls.
- ◉ Absorbs:
 - > 80% ingested water
 - > Vitamins
 - > Minerals
 - > Carbohydrates
 - > Proteins
 - > Lipids
- Secretes **digestive enzymes**



Large Intestine

- About 1.5 meters long
- Accepts what small intestines don't absorb
- Rectum (short term storage which holds feces before it is expelled).



Large Intestine

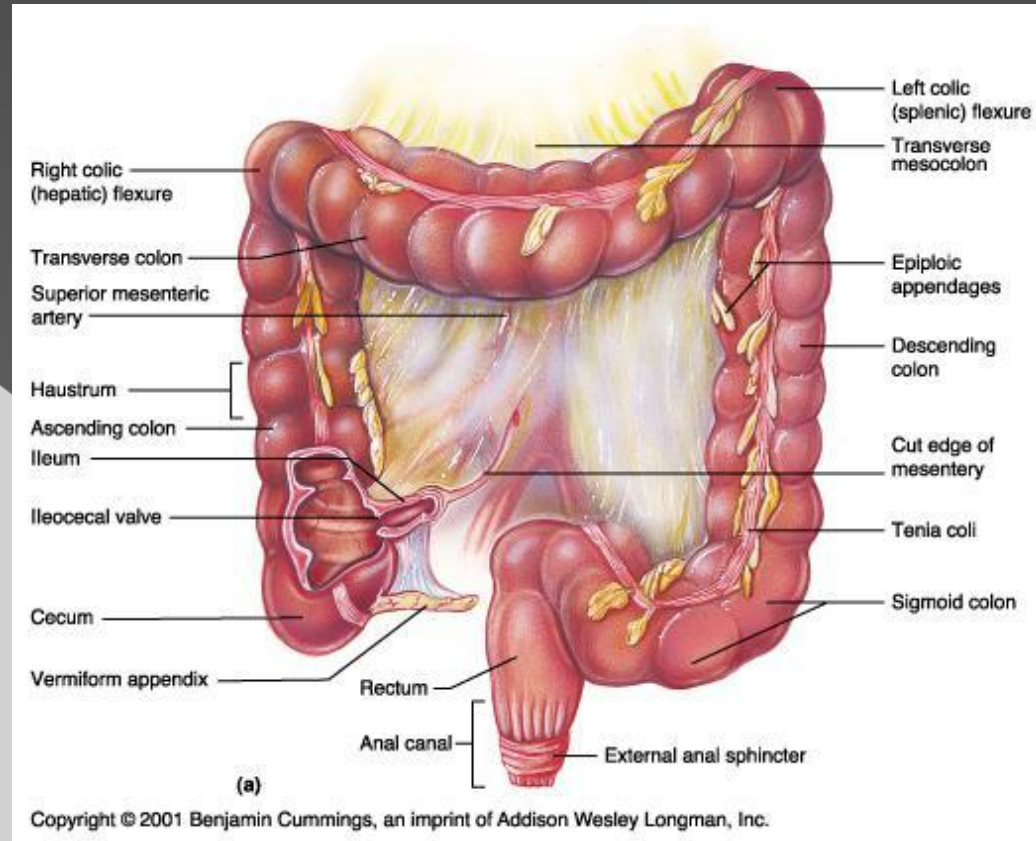
○ Functions

➤ Bacterial digestion

- Ferment carbohydrates

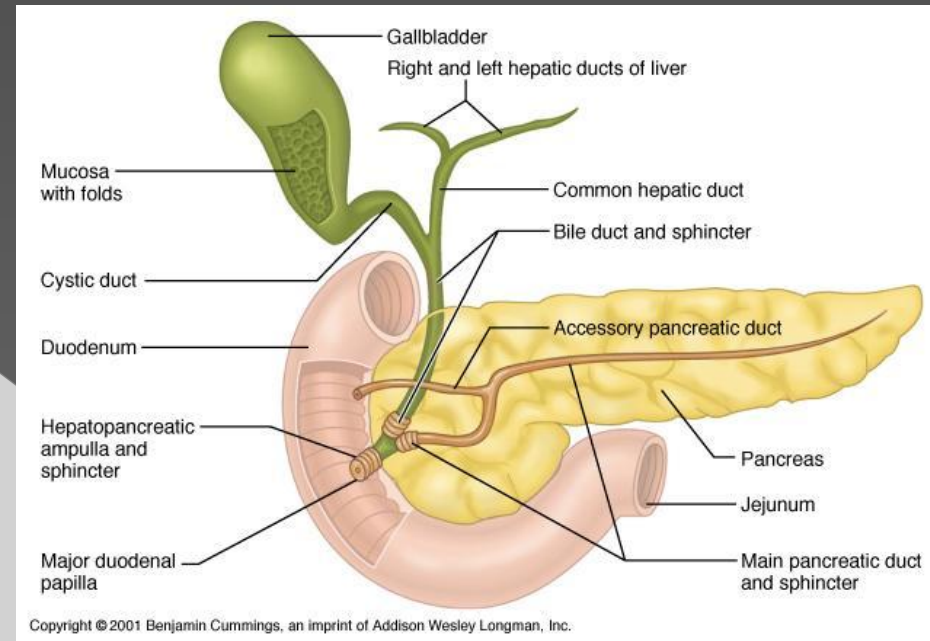
– Absorbs more **water**

– Concentrate **wastes**



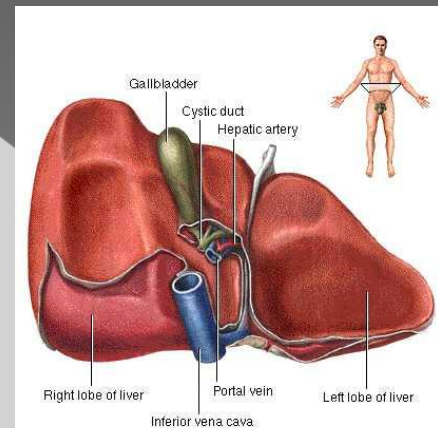
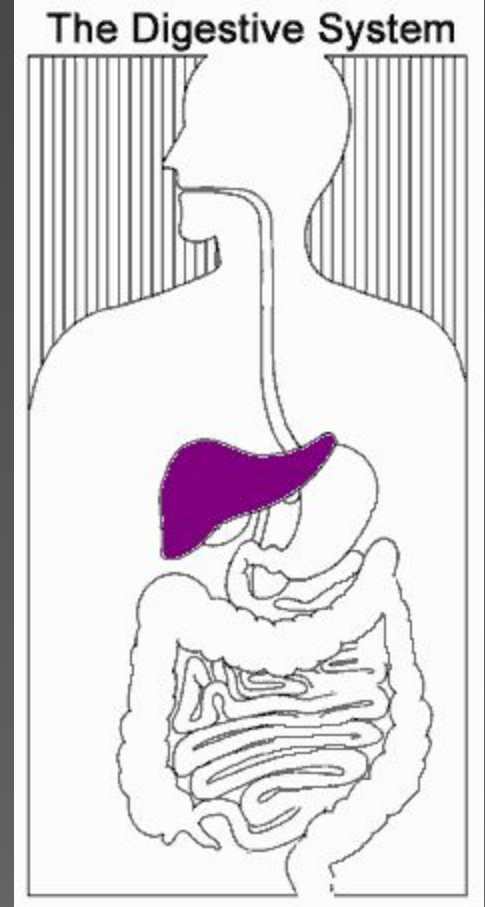
Accessory Organs The Glands

- Not part of the path of food, but play a critical role.
- Include: Liver, gall bladder, and pancreas



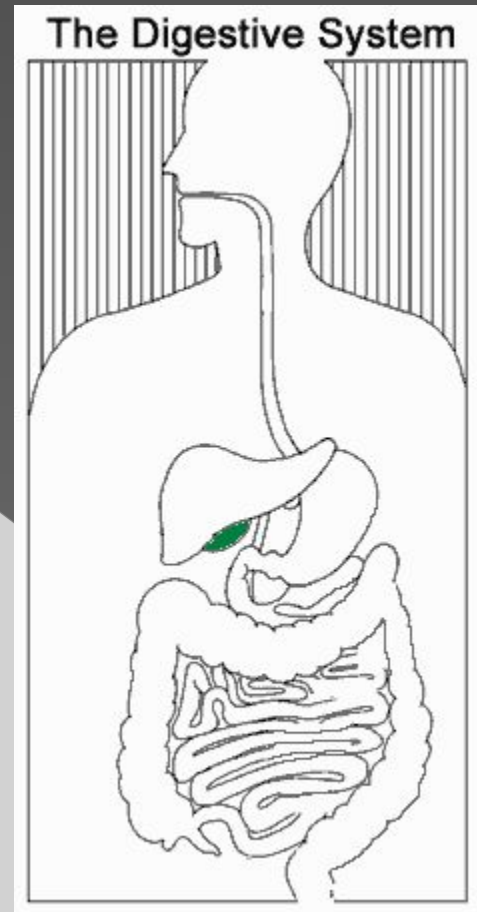
Liver

- ◉ Directly affects digestion by producing **bile**
 - > Bile helps digest **fat**
 - filters out **toxins** and waste including **drugs** and **alcohol and poisons**.



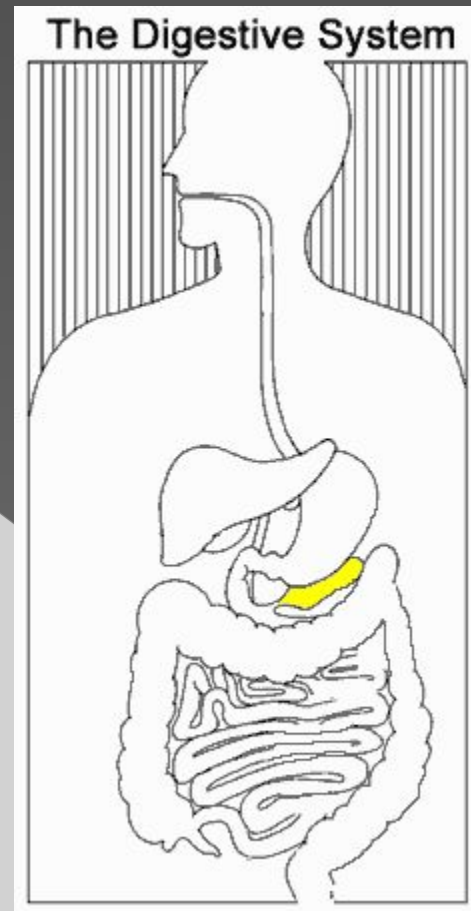
Gall Bladder

- ◉ Stores bile from the liver, releases it into the small intestine.
- ◉ Fatty diets can cause gallstones



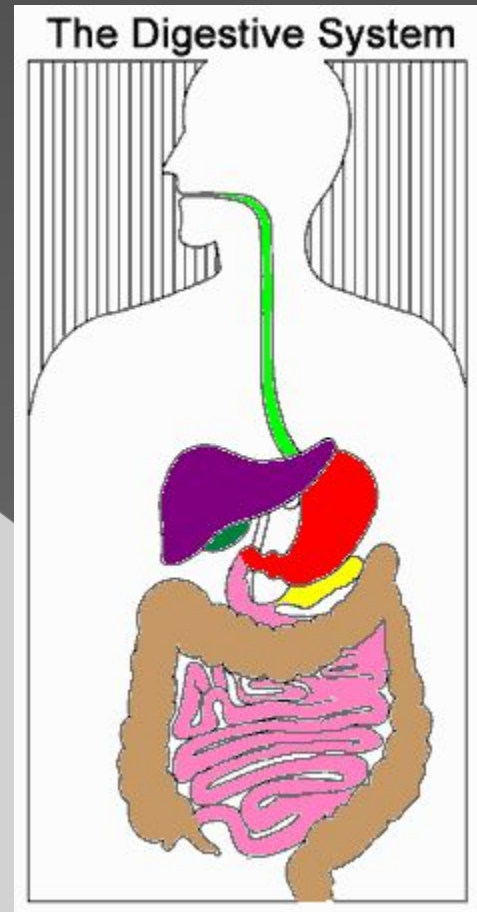
Pancreas

- Produces digestive enzymes to digest **fats, carbohydrates** and **proteins**
- Regulates blood sugar by producing [insulin](#)



On a sheet of paper, write the name of each colored organ:

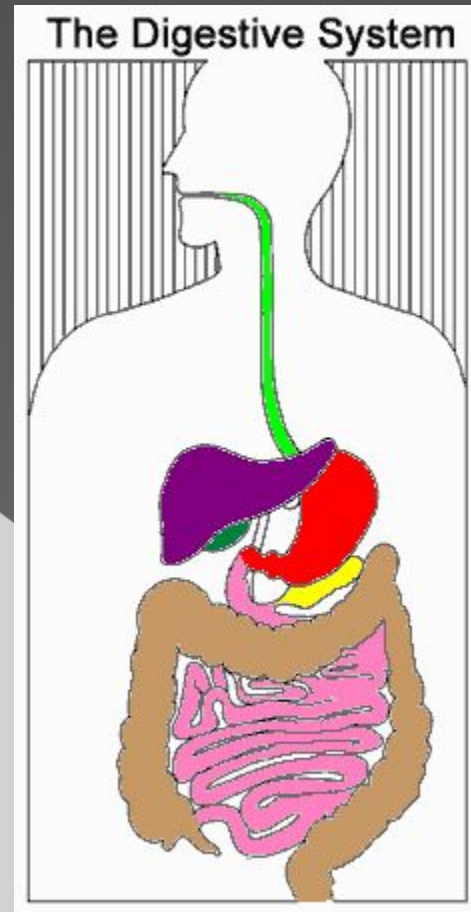
- Green:
- Red:
- Pink:
- Brown:
- Purple:
- Green:
- Yellow:



How'd you do?

- ◉ Green: Esophagus
- ◉ Red: Stomach
- ◉ Pink: Small Intestine
- ◉ Brown: Large Intestine
- ◉ Purple: Liver
- ◉ Green: Gall Bladder
- ◉ Yellow: Pancreas

Great Job!



References and Links

- ◉ [Your Digestive System and How It Works](#)
 - > Digestive system diagram comes from this site
- ◉ [The Real Deal on the Digestive System](#)
- ◉ [Pancreas: Introduction and Index](#)
- ◉ [Your Gross and Cool Body - Digestive System](#)
- ◉ [Laurentian Regional High School Data Base](#)
 - you must know the Username and Password