**Human Digestion Introduction Lecture**

**_is the process that changes food into a form that is usable by your body._**

**The Alimentary Canal**
- The ____________ of food from your ____________ to your ____________.

A. Eight Parts of the Alimentary Canal
   1. ________________  
   2. ________________  
   3. ________________  
   4. ________________
   5. ________________  
   6. ________________  
   7. ________________  
   8. ________________

**Accessory Organs**
Food does no pass directly through these organs. However, these organs aid in ____________ with the use of ____________ and ____________.
- ________________ = produces bile salts that ____________ fats in the small intestine.
- ________________ = small, thin sac near the liver that stores ____________.
- ________________ = found near the spleen and produces enzymes for the breakdown of all categories of food.

**Phases of Digestion**
1. Mechanical Digestion
   - Chewing, churning, and mixing done by the ____________ and the ____________.
   - ________________ breakdown of large food ____________ to smaller food globules.
2. Chemical Digestion
   - Utilizes ____________ from glands to chemically break the ____________ between the molecules.
   - ________________ (large) break down into ________________ (small).

**Terms Associated with Mechanical Digestion**
1. ________________  
2. ________________  
3. ________________  
4. ________________  
5. ________________  
6. ________________

**Chemical Digestion (fill in the terms below).**
In the diagram, ____________, gets broken down into ____________ by the _____________. then the ____________ molecules pass though the ____________ of the intestine into the ____________ ____________ where the nutrients can travel to where they are needed.

**The Mouth**
A. Gets ____________ ready for ____________.
B. Teeth ____________ break up food making it ____________ to digest.
C. Salivary glands ____________ (mucous and enzymes Amylase) that ____________ carbohydrates.
   - ________________ Gland = largest, ____________ when you have the mumps.
   - ________________ Gland = located at the ____________ of the jaw.
   - ________________ Gland = located ____________ the tongue and causes the mouth to water.
D. The tongue is a ____________ organ that helps in chewing and swallowing and moves around the mouth to keep the ____________ clean.
The Esophagus

A. Connects the ______________ to the ______________.

B. ______________ and longitudinal (smooth) muscles move the food ________________ to the stomach via ________________.

C. Located ______________ to the trachea.

D. The name of the mass of food in the diagram is called the ________________.

The Stomach

*The Stomach ________________ and ________________ food.

A. Gastric Glands in the stomach lining…
   1. Secretes Hydrochloric Acid (_______)
      a. Kills bad ________________ present on the food.
      b. Regulates the stomach’s lower ________________ ________________ valve.
      c. Controls the stomach _______ level.
   2. Secretes the enzyme ________________.
      a. Pepsin is the first step in ________________ digestion—breaks down protein ________________ into smaller chains of ________________ acids called polypeptides and ________________.
      a. Mucous ________________ the stomach ________________ from digesting itself.
      b. If mucous levels are ________ in a body, then that person may develop ulcers = a ________________ or raw area in the stomach lining or duodenum of the small intestine.

B. ______________ stays in the stomach for ________________ hours.

C. Food (__________) enters into the small intestine through the ________________ valve (sphincter).

Gastric Ulcers are found in the ________________ whereas duodenal ulcers are in the ________________

The Small Intestine

Small Intestine divided into 3 regions: ***Remember ________________ !!!

1. ________________(10-12 in)—attached to the ________________ stomach.
   a) Receives ________________ from the Gall Bladder and enzymes from the ________________.
   b) High pH ________________ here neutralizes ________________ from the stomach.

2. ________________(8 feet)—middle section of small intestine.

3. ________________(12 feet)—last section that connects ________________ to the large intestine. The appendix (__________________) is found in this region.

Enzymes from the Small Intestine

Four Different Enzymes Secreted Here:

1. ________________—finishes ________________ digestion that started in the stomach.
   a) ________________ dipeptides into amino acids.

2. ________________—changes maltose to glucose.

3. ________________—changes lactose to glucose.

4. ________________—changes sucrose to glucose.

*Notice that enzymes all end in –______ and the root words are the same as the sugars they break down.

Enzymes from the Pancreas

= an accessory organ found ________________ the liver near the ________________.

Enzymes pass from the pancreas through the pancreatic ________________ into the ________________.

1. ________________—converts polypeptides to dipeptides.

2. ________________—digests carbohydrates.
3. ______________—digests small fats.

The Liver = An____________________organ found in the _____________abdominal cavity.

A. The Liver makes bile:
   1. **Bile** is a ______________that ______________(breaks up) large fat globules into smaller ones.
   2. **Bile** ______________the enzyme ________________to break down fats.
   3. **Bile** enters the _________________ through the common bile duct.

B. The Liver has other functions:
   1. Removes ______________from the blood and stores it as ______________ (medium-term NRG)
   2. Breaks down amino acids (=__________________) for energy.
   3. _______________the blood of any ________________.

The Colon (=Large Intestine)

The last part of the___________________canal attached to the small intestine.

A. Receives ________________food from the ______________intestine.
B. Function: it squeezes out _______________ to solidify the ________________.
C. If material passes slow = ___________________. (______________________)
   If material passes quick = ___________________. (______________________)
   If material doesn’t move =______________________ 🙃! Get out the latex gloves.
D. Feces collect in the _______________. The _______________ contracts to hold in the poo! When it relaxes, then you ________________.
E. **There’s a bacterium in my colon!**
   1. **Escherichia coli** (aka E.coli) forms a _________________relationship with humans.
   2. **E. coli** digests _________________(it’s food source) that we can’t breakdown (like CORN).
   3. Then, **E. coli** produces _______________gas as a _______________of digestion. (=flatulence)
   4. If **E. coli** comes in contact with our _________________, we can get sick. So, wash up children!

**Draw the intestinal cross section diagram from Slide #7 of the lecture.**