

Digestive System Lab

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Histology of the Alimentary Canal

Examine the histological structure of the alimentary canal wall by viewing:

- Viewmaster Set 67 The Digestive System
- Digestive system board, models and your notes/textbook

Describe the structural and functional highlights of each tunic in the wall of gastrointestinal tract.

- mucosa
- submucosa
- muscularis
- serosa

Organs of the GI tract

Utilizing the Digestive System board and models (GI, pancreas, and intestinal villi) and your notes/textbook:

Identify the organs that make up the alimentary canal and indicate the digestive role of each organ.

- mouth
 - tongue
 - uvula
 - tonsils
 - salivary glands
 - teeth
- pharynx
- esophagus (gullet)
- stomach
 - cardiac sphincter
 - fundus
 - body
 - pylorus
 - pyloric sphincter
 - gastric pits
- small intestine
 - duodenum
 - jejunum
 - ileum
 - pancreas
 - liver
 - gall bladder
 - circular folds
 - villi
 - microvilli
 - large intestine
 - cecum

- appendix
- colon
- rectum
- anus

Action of Bile on Fat

Obtain two test tubes containing the below:

To Test Tube 1 add

- 10 drops of water
- 2 drops of vegetable oil

To Test Tube 2 add:

- 10 drops of water
- 2 drops of vegetable oil
- pinch of bile salts

Cover each tube with a small square of Parafilm and shake vigorously, and allow the tubes to stand at room temperature.

After 10-15 minutes, observe both tubes. If emulsification has not occurred, the oil will be floating on the surface of the water. If emulsification has occurred, the fat droplets will be suspended throughout the water, forming an emulsion. In which tube has emulsification occurred? _____

Explain how emulsification increases chemical digestion of lipids by lipases. _____

Observing the Movements of Digestion

Obtain a paper cup and some drinking water and make the following observations:

While swallowing a mouthful of water, consciously notice the movements of your tongue. Record your observations.

Repeat the swallowing process while your laboratory partner watches movements of your larynx that are visible externally. Record your observations. What do these movements accomplish?

Name That Structure

Choose the GI structure from the following list that the phrase describes:

Alimentary canal, duodenum, esophagus, LI, mouth, pharynx, SI, stomach

1. has three layers of smooth muscle _____
2. receives secretions from the salivary glands _____
3. has regions called the cecum, colon, rectum and anal canal _____
4. composed of the duodenum, jejunum and ileum _____
5. receives bile, pancreatic secretions and food from the stomach _____
6. a continuous muscular tube running from the mouth to the anus _____
7. carries food from the pharynx to the stomach _____

FETAL PIG LAB THREE: Digestive System