

# The Digestive System

Maintenance Systems

Unit 5



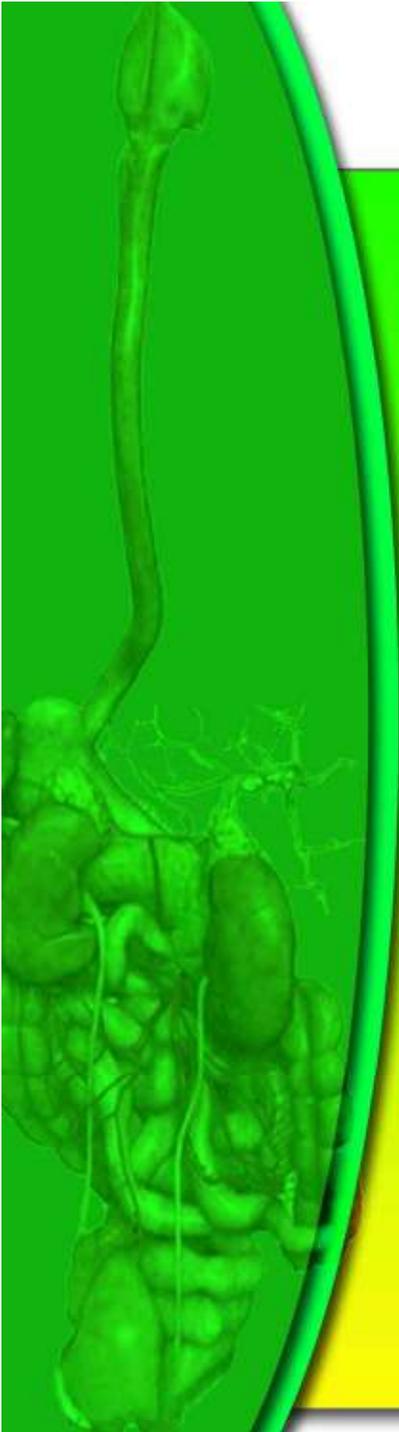
# The Basic Functions of the Digestive System

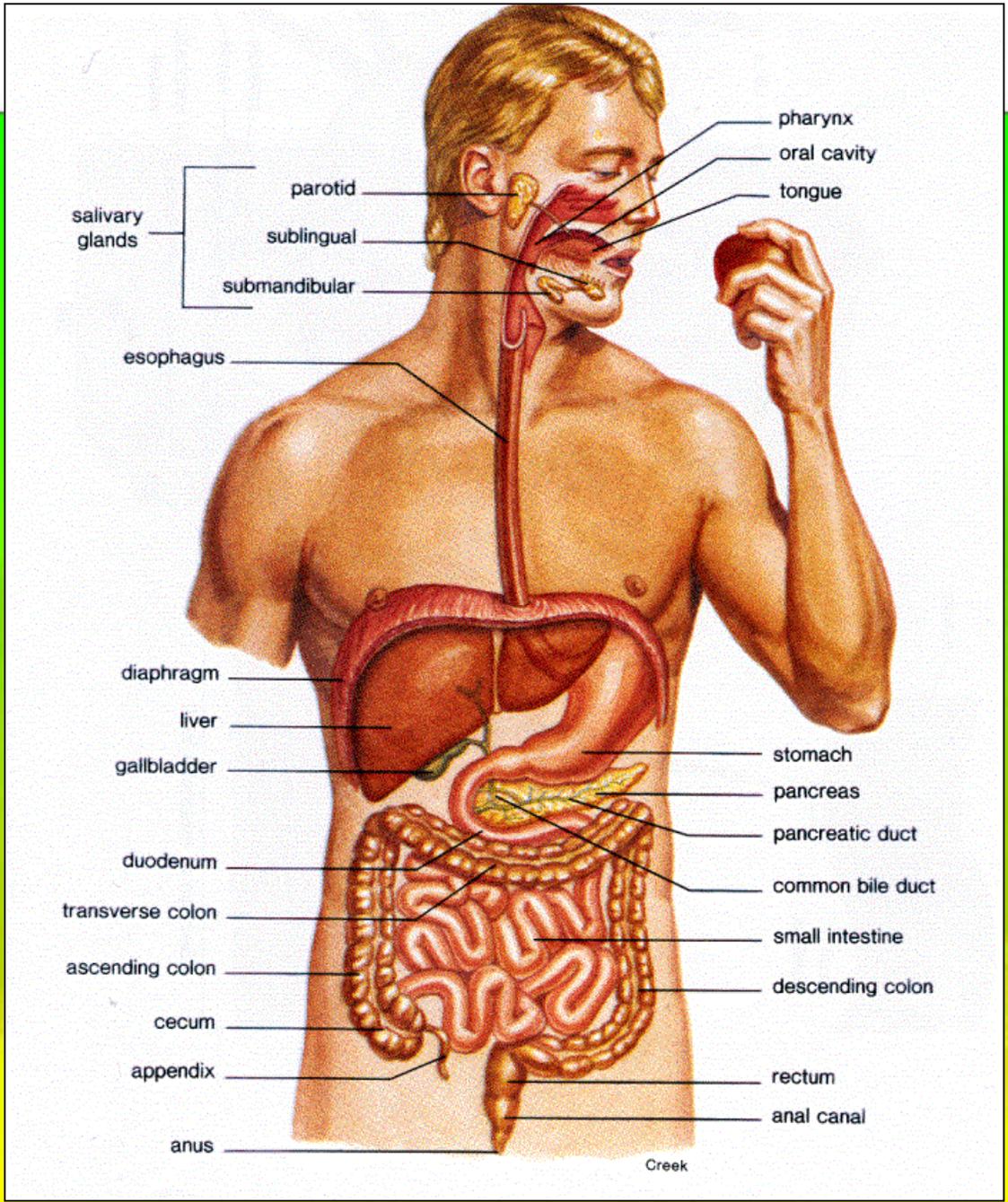
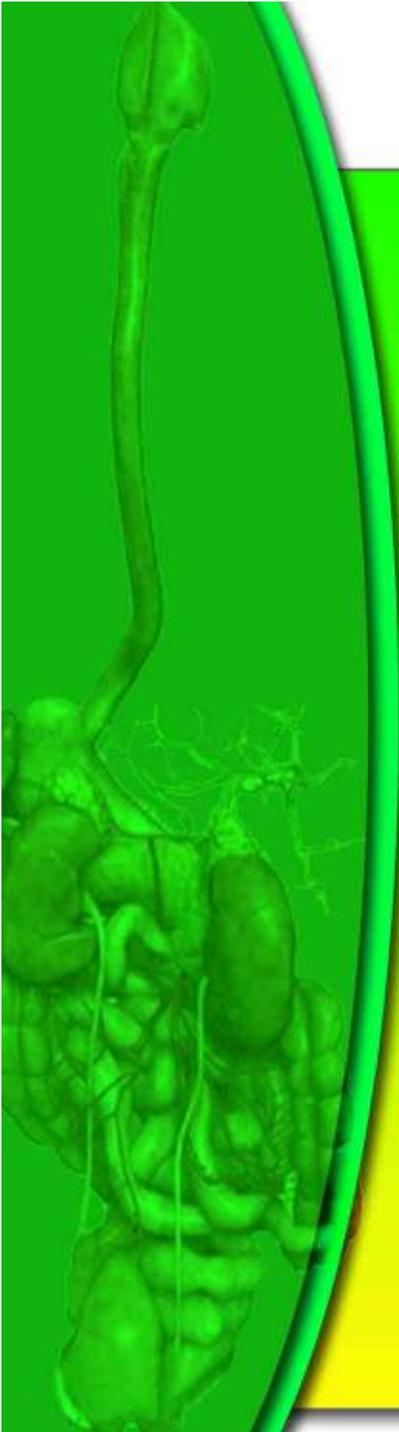
- Ingestion-taking nutrients into the body, i.e., eating
- Digestion-the mechanical and chemical breakdown of food into a usable form
- Absorption-the movement of molecules through the mucosal lining of *the stomach* and small intestine, and into the blood
- Excretion-the removal of solid waste from the body



# The Digestive Organs

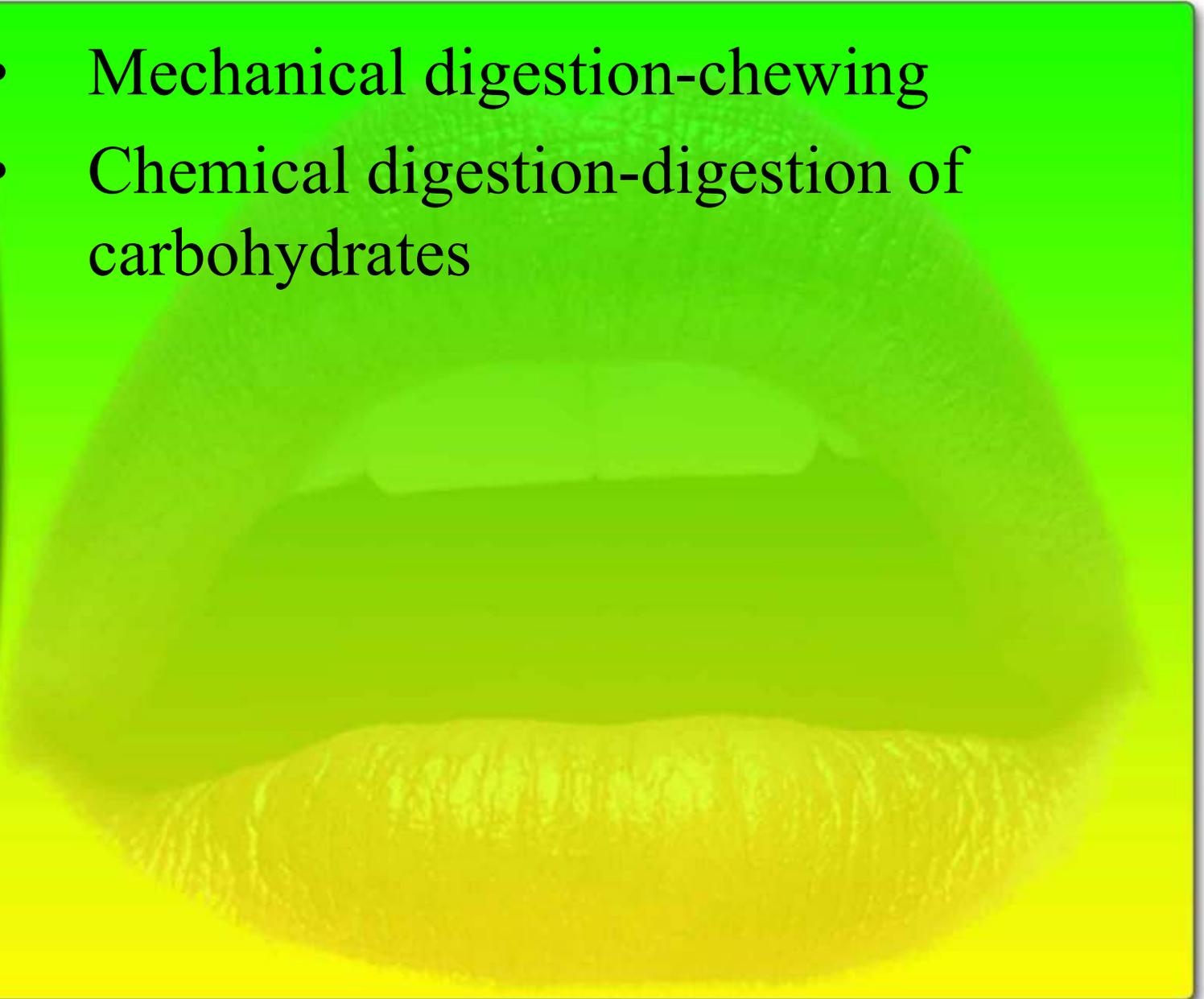
- Mouth
- Pharynx
- Esophagus
- Stomach
- Small Intestines
- Large Intestines
- Rectum
- Anus





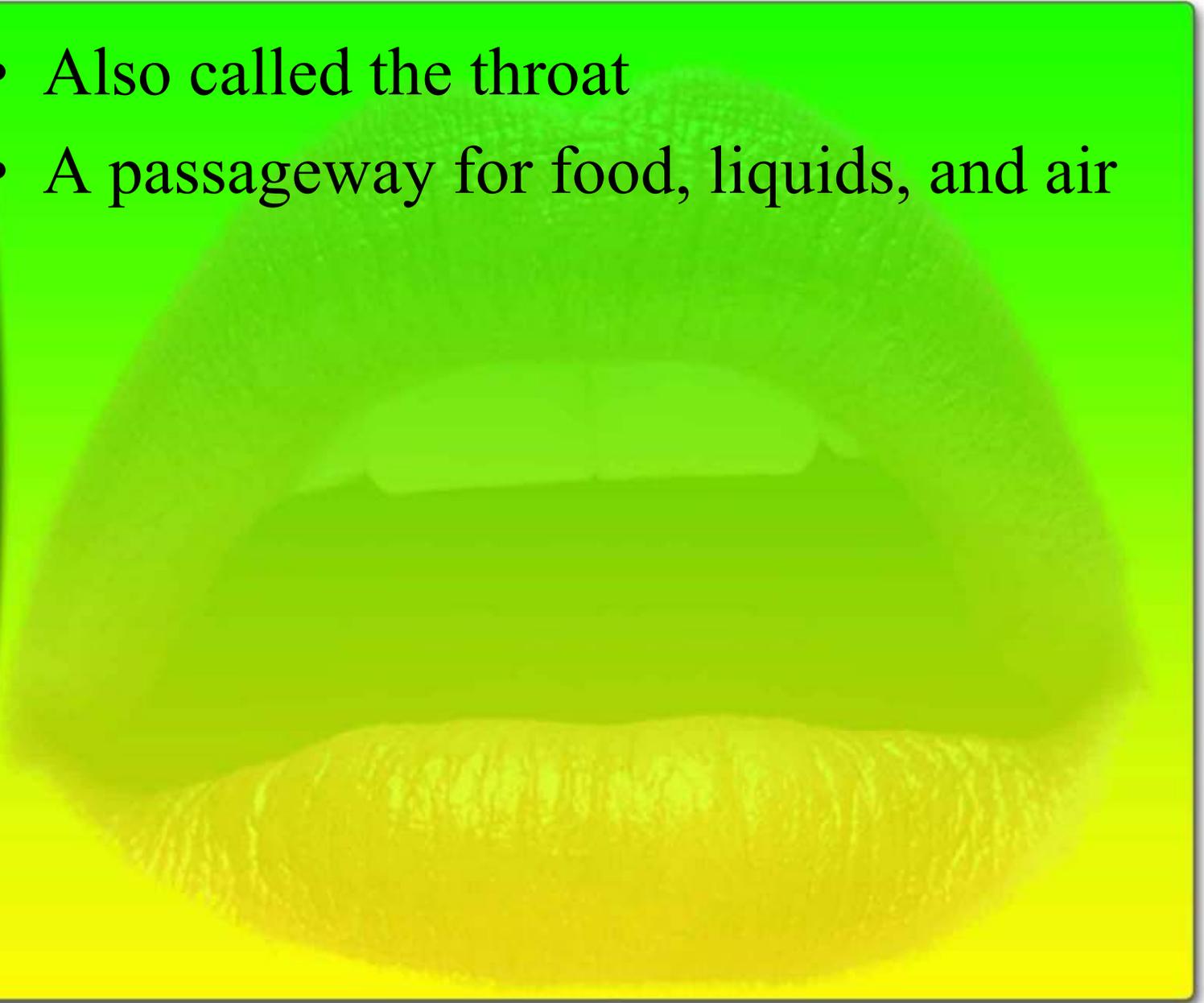
# Mouth

- Mechanical digestion-chewing
- Chemical digestion-digestion of carbohydrates



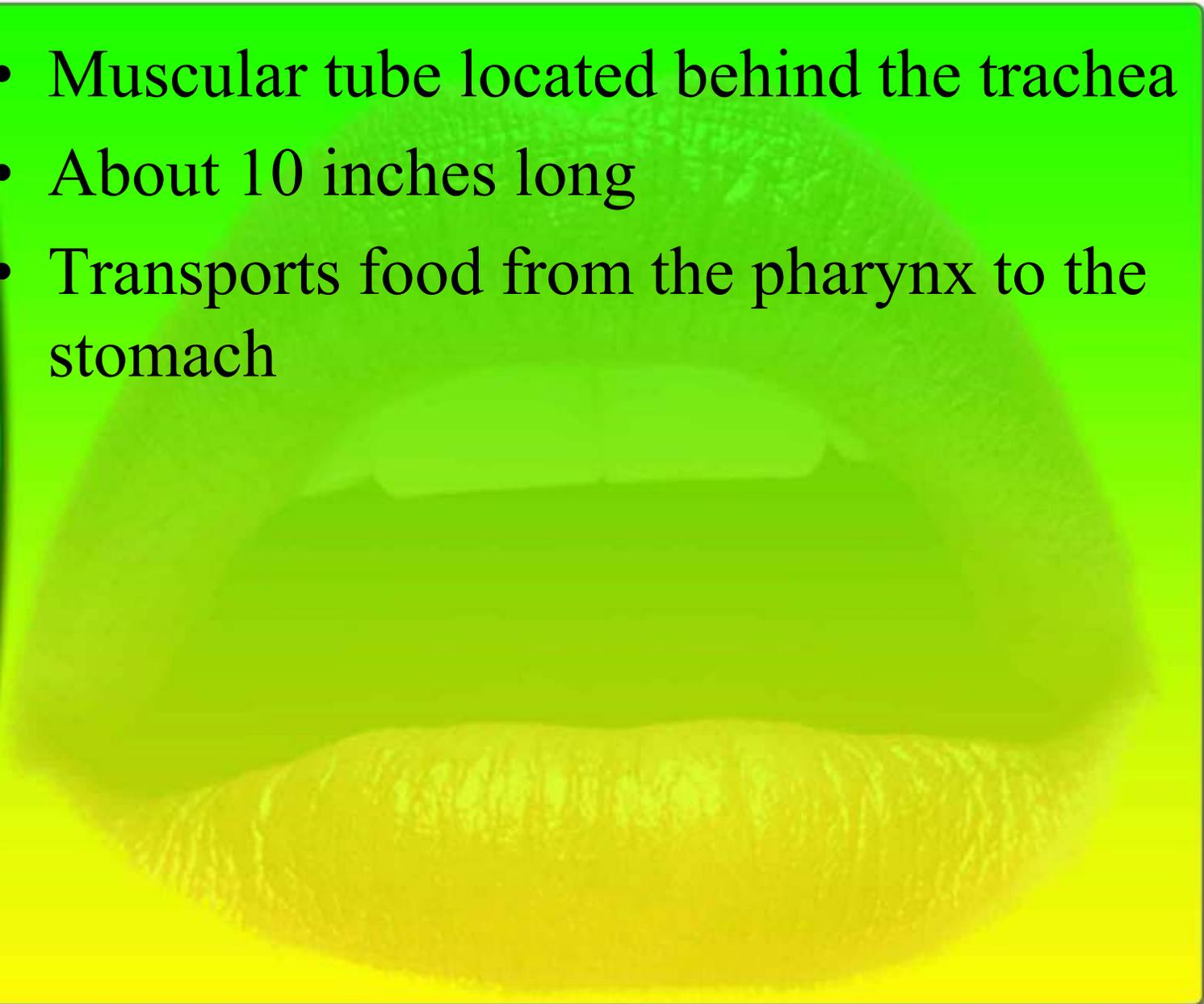
# Pharynx

- Also called the throat
- A passageway for food, liquids, and air



# Esophagus

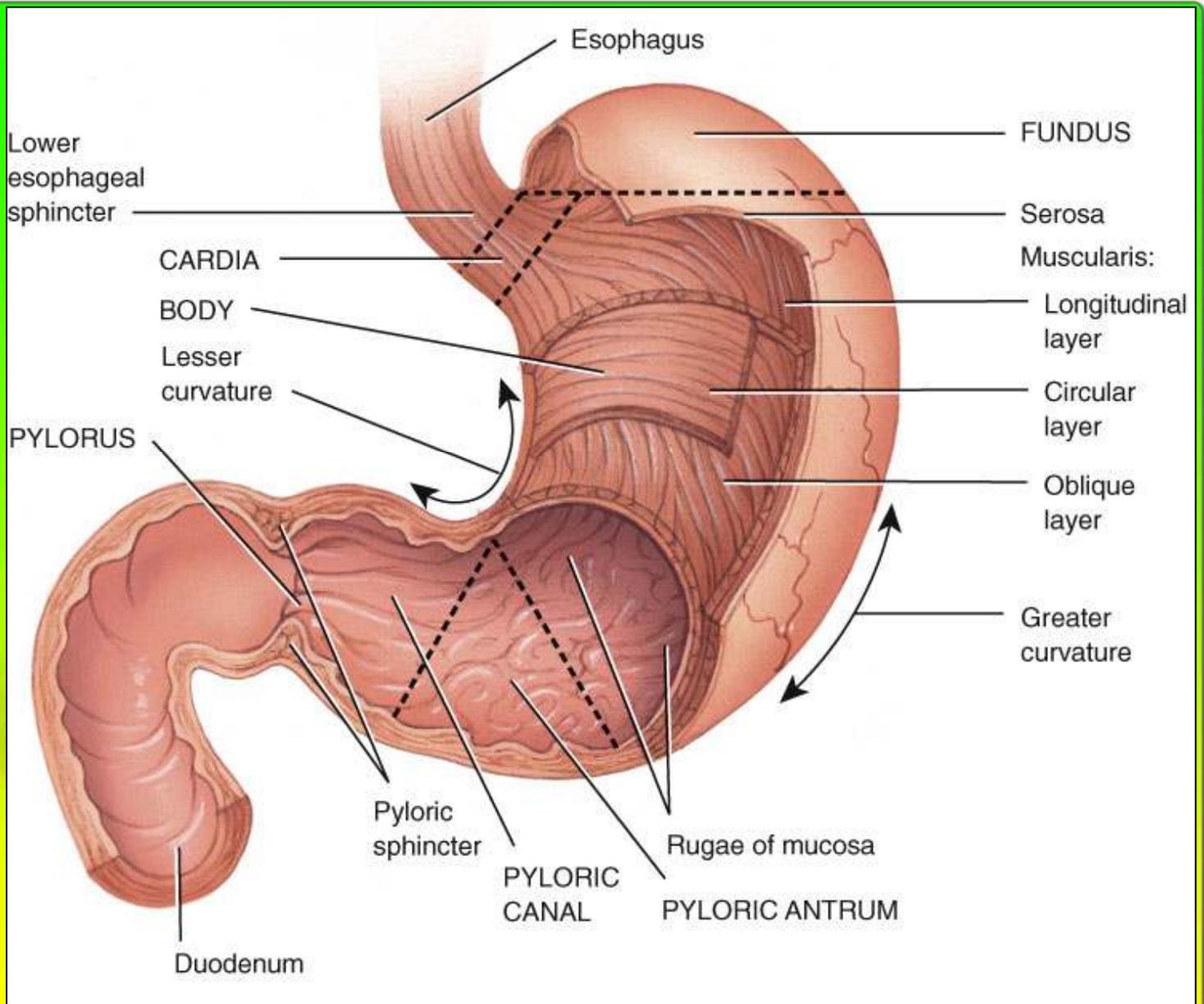
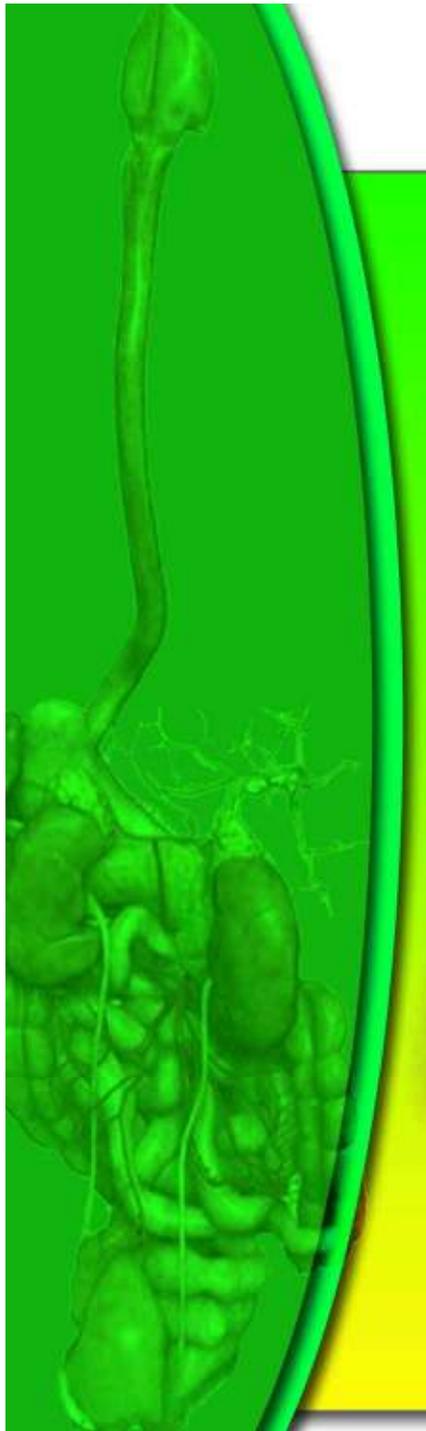
- Muscular tube located behind the trachea
- About 10 inches long
- Transports food from the pharynx to the stomach



# Stomach

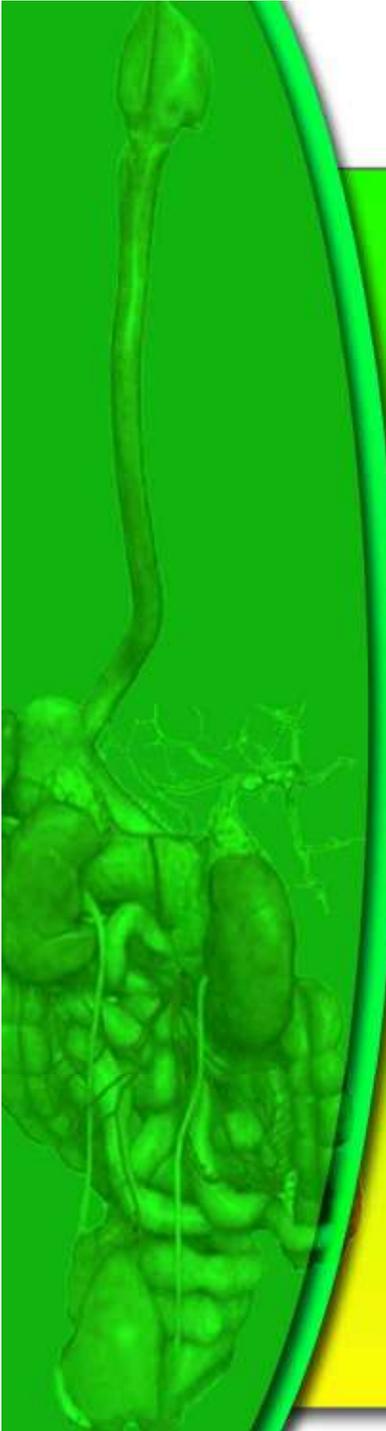
- J-shaped pouch located below the diaphragm
- Chemical digestion of protein occurs in the stomach due to gastric juice secretion
- Mechanical digestion occurs in the stomach due to maceration (churning)

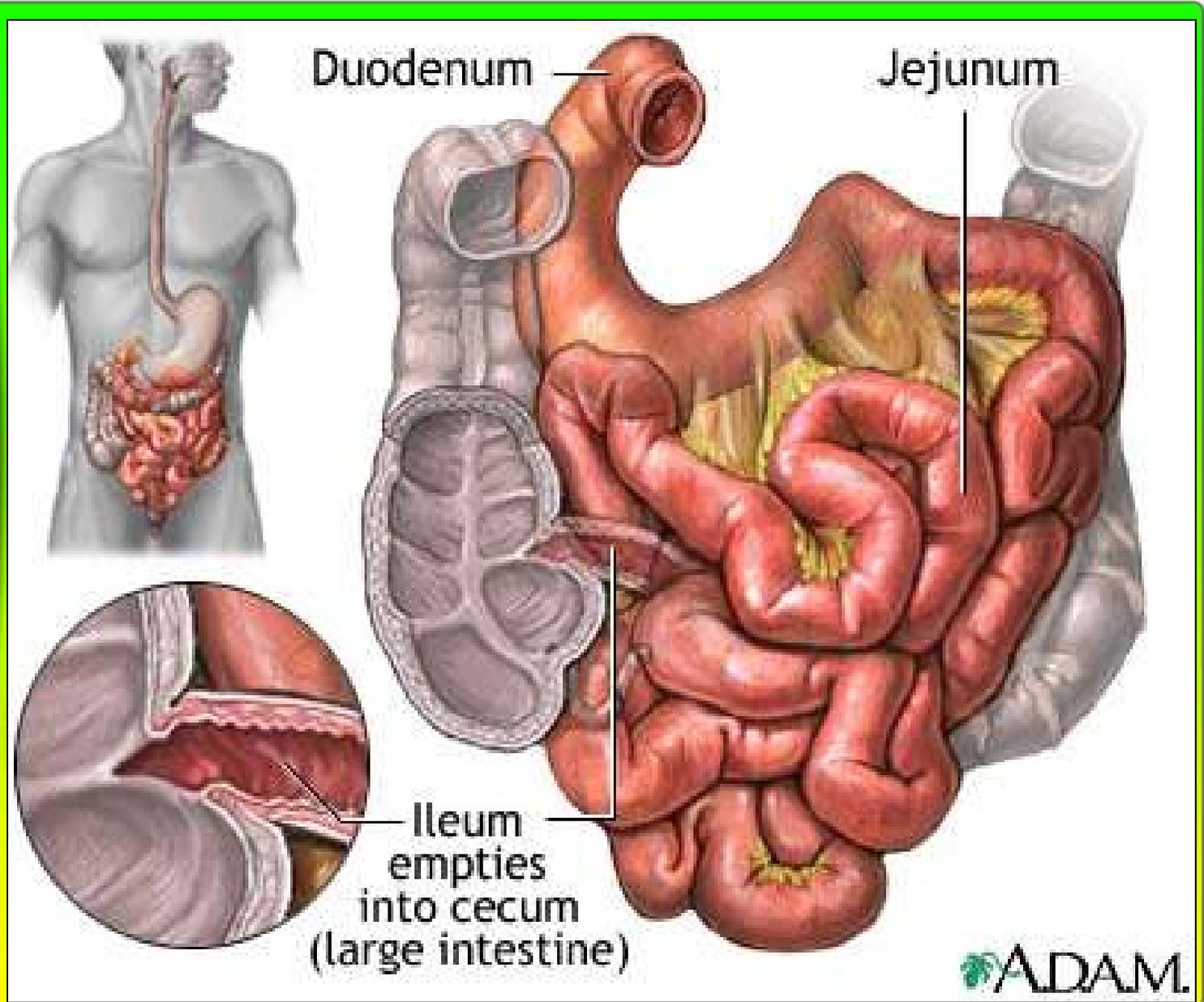




# Small Intestines

- Chemical digestion of nutrients and absorption of nutrients is completed in the small intestines
- Three divisions of the small intestines:
  - Duodenum – first portion of the small intestine where the majority of chemical digestion occurs.
  - Jejunum – middle portion of the small intestine where the majority of absorption of nutrients occurs.
  - Ileum – final portion of the small intestine where absorption occurs.





Duodenum

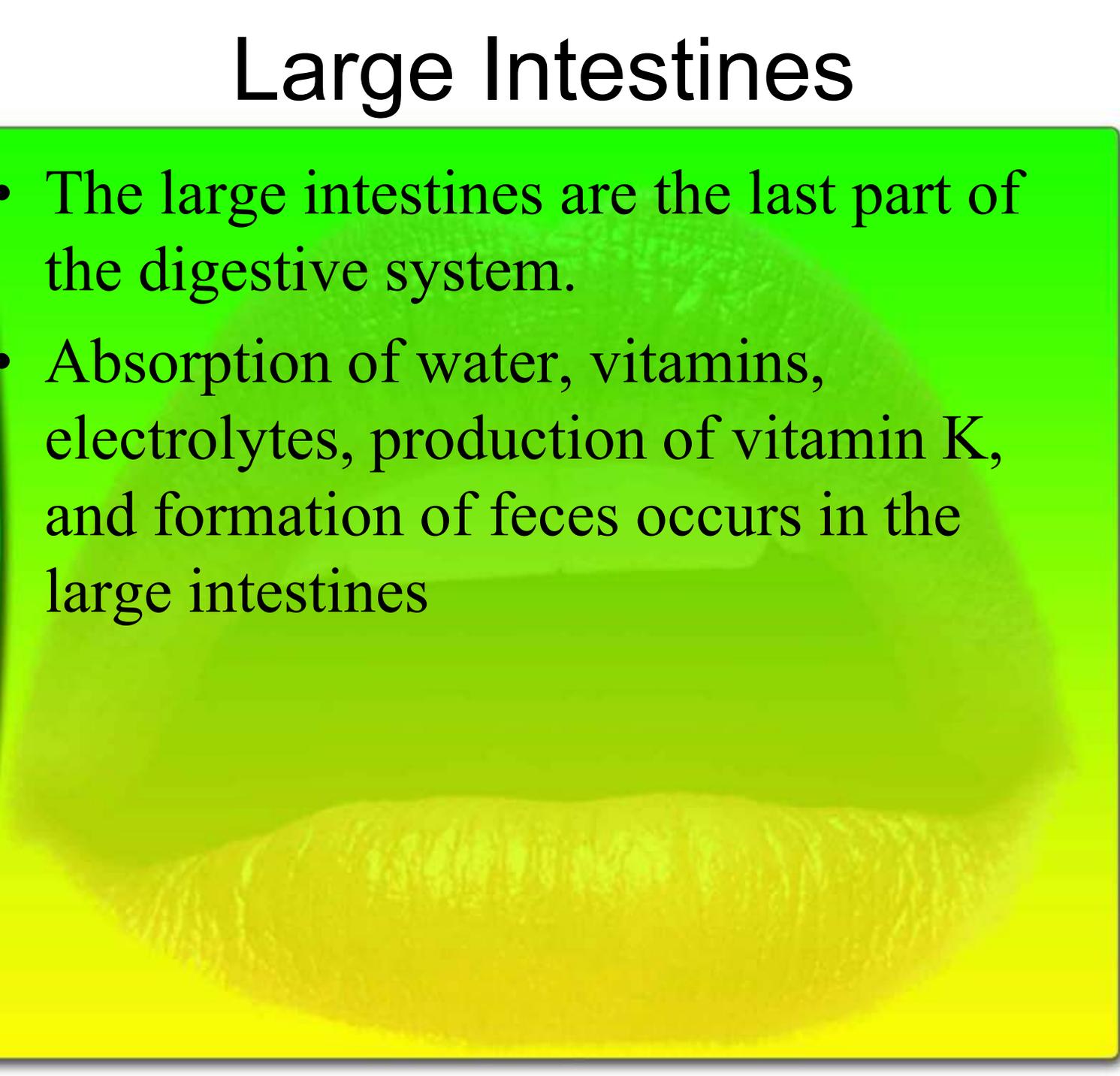
Jejunum

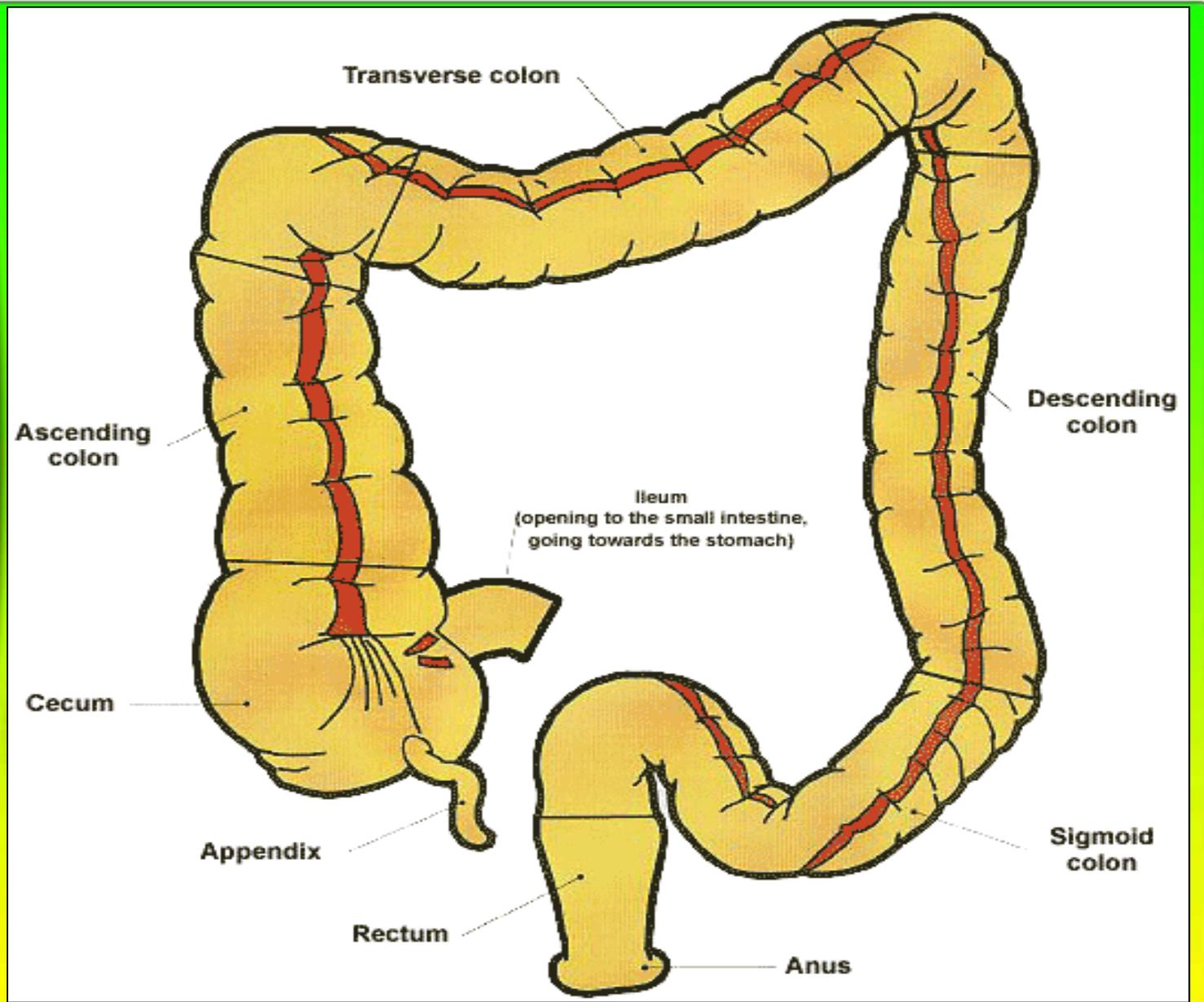
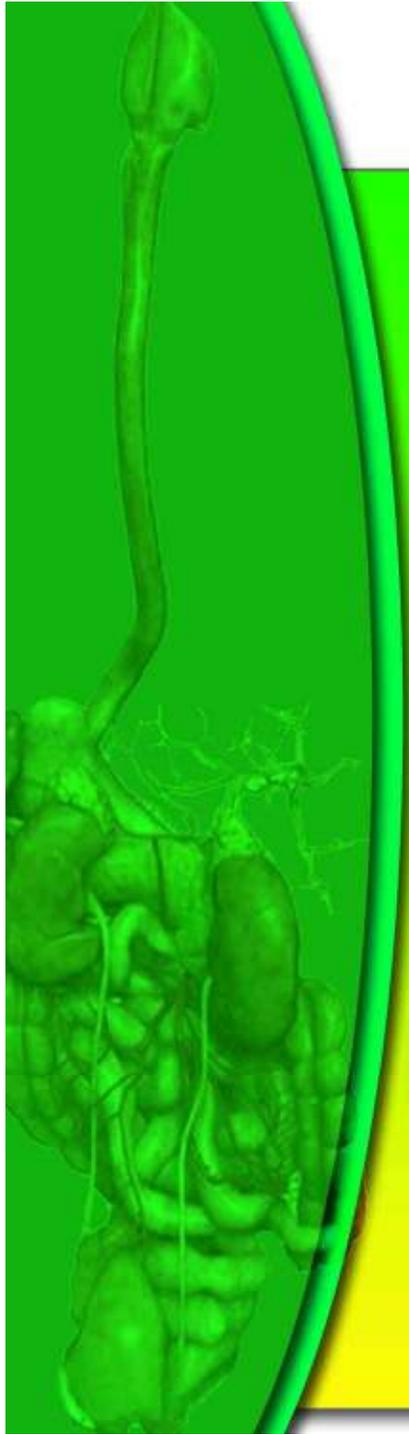
Ileum  
empties  
into cecum  
(large intestine)

ADAM.

# Large Intestines

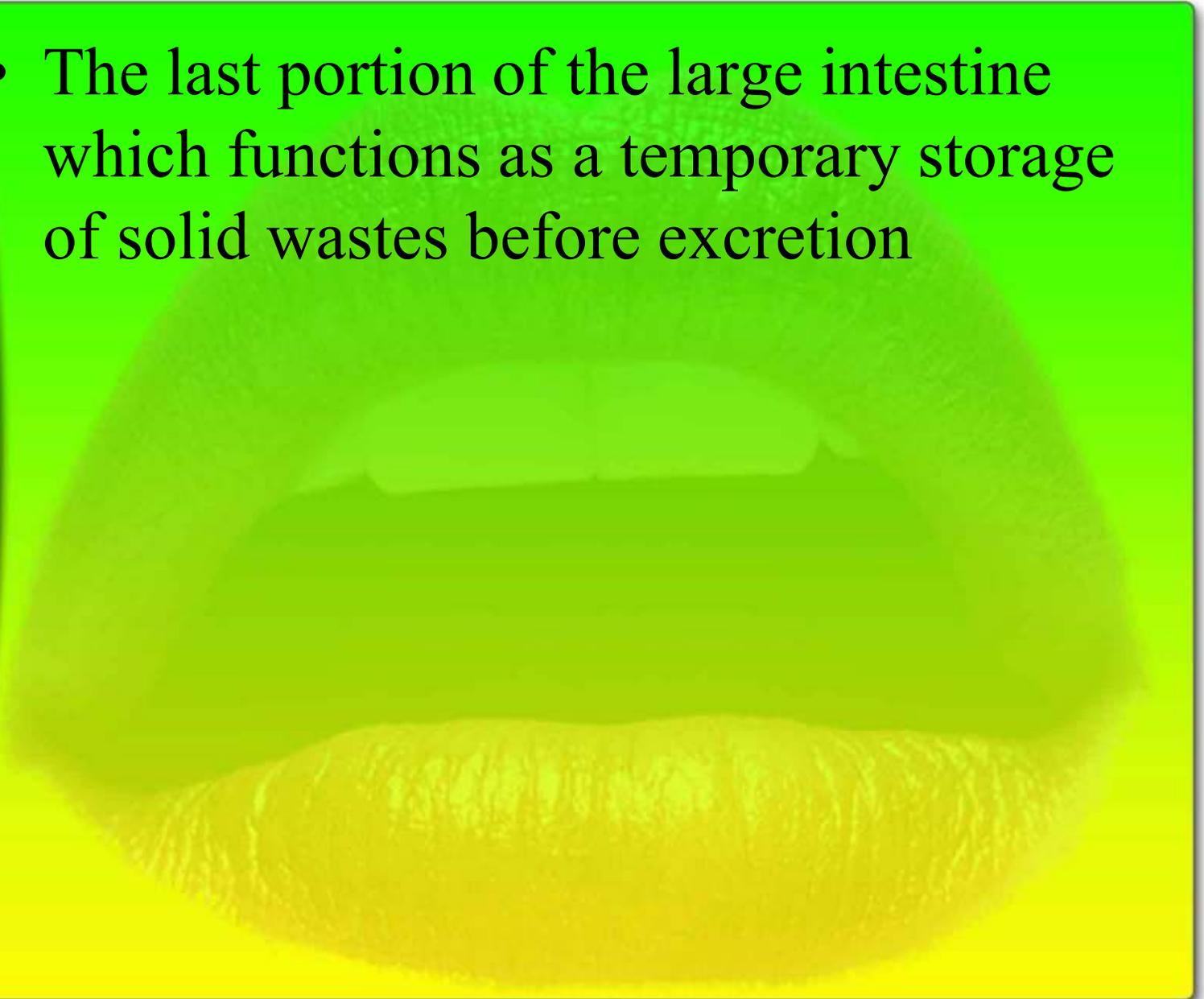
- The large intestines are the last part of the digestive system.
- Absorption of water, vitamins, electrolytes, production of vitamin K, and formation of feces occurs in the large intestines





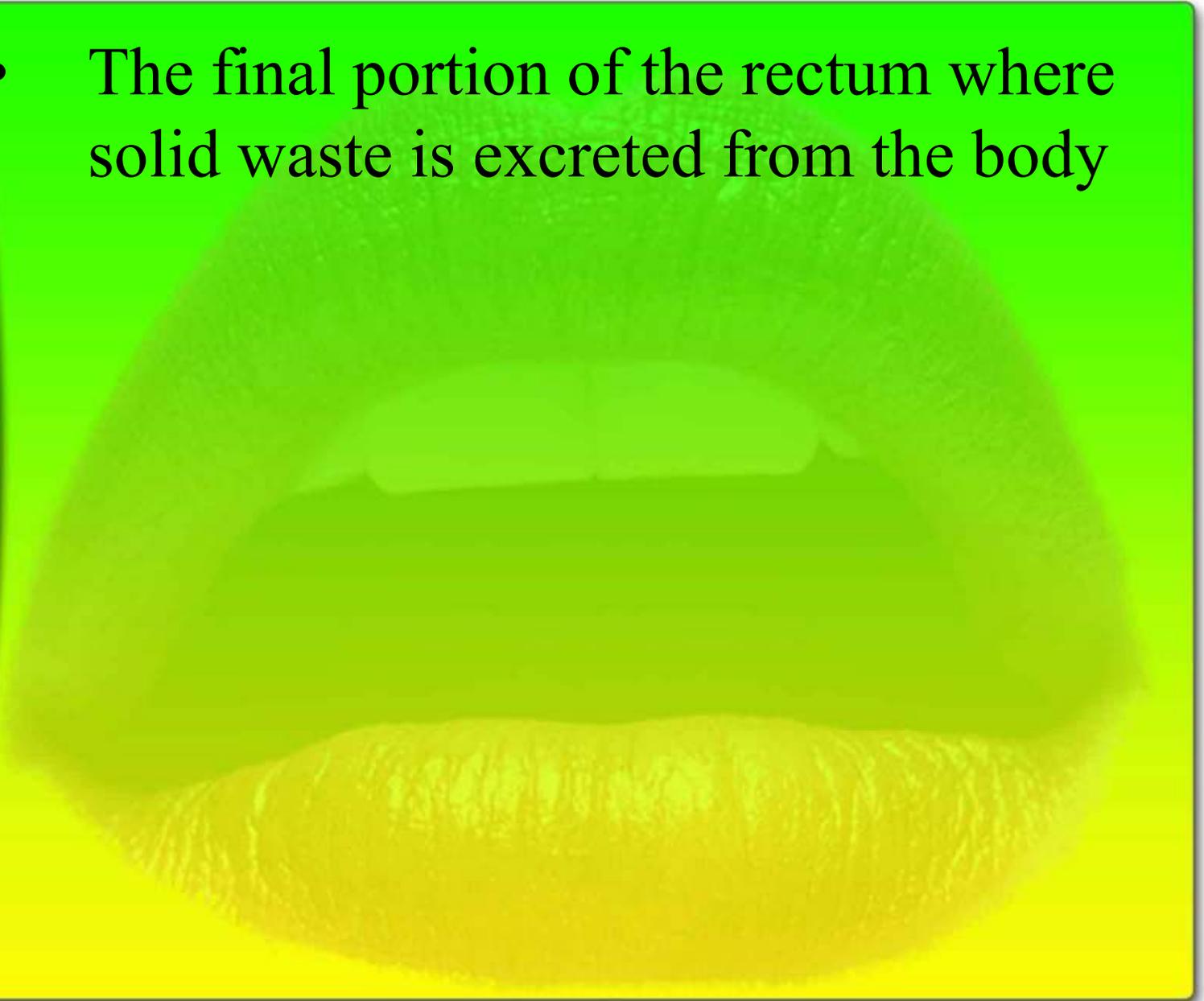
# Rectum

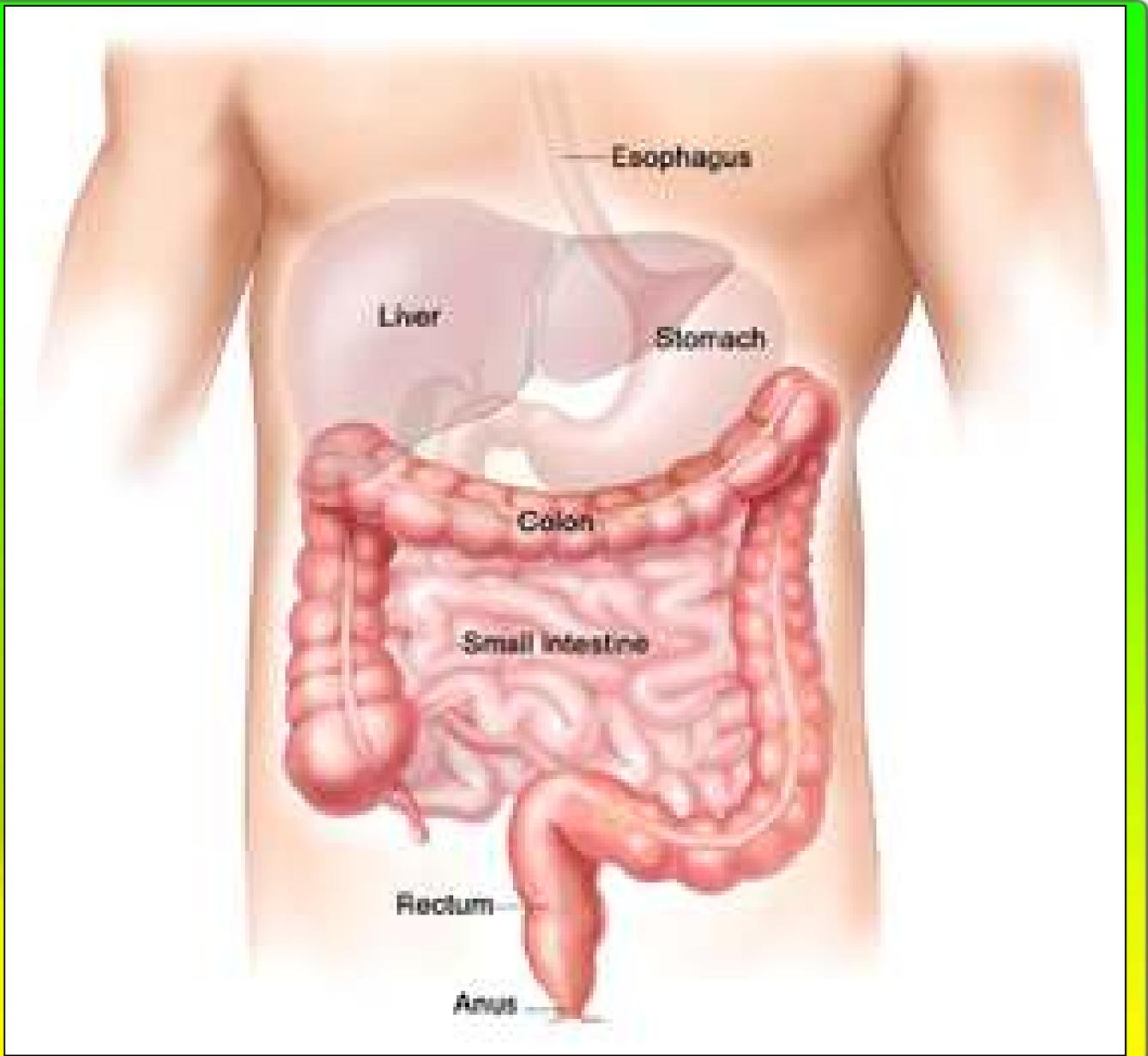
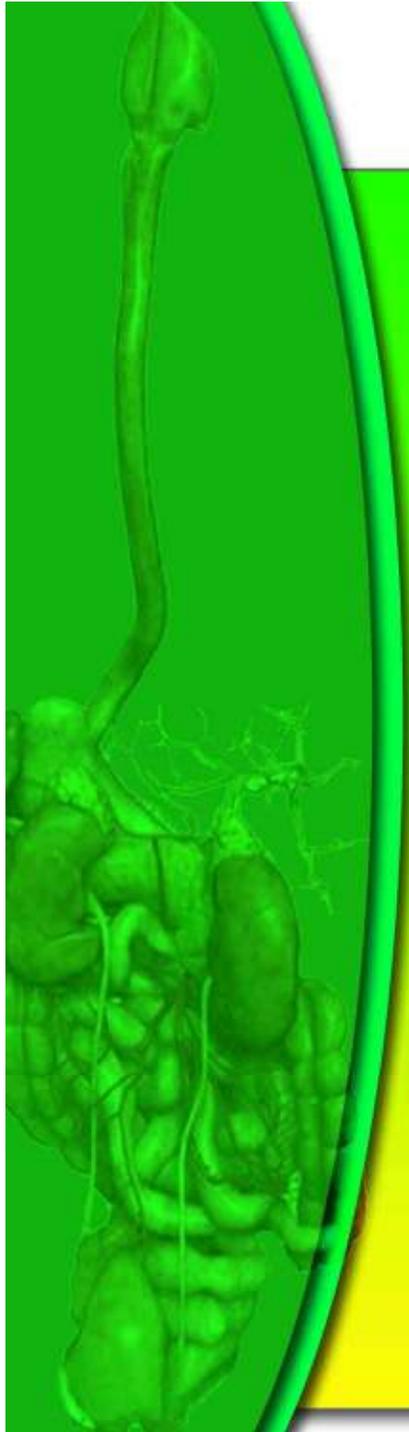
- The last portion of the large intestine which functions as a temporary storage of solid wastes before excretion



# Anus

- The final portion of the rectum where solid waste is excreted from the body





# Diseases and Disorders of the Digestive System



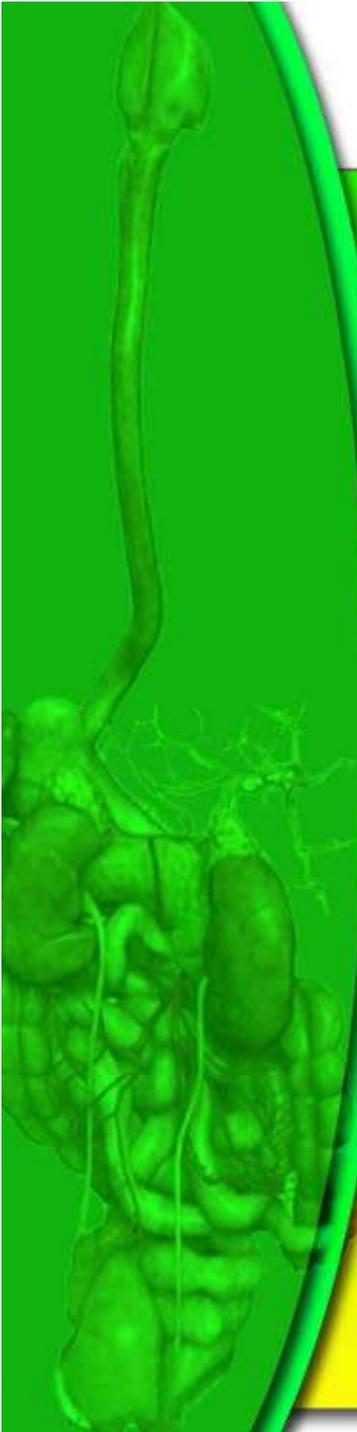
# Colon Cancer

- Most of the cancers of the large intestine are believed to have developed from polyps (benign tumors).
- Cancer of the colon and rectum, also called colorectal cancer can invade and damage adjacent tissues and organs.
- Symptoms include fatigue, weakness, shortness of breath, change in bowel habits including diarrhea or constipation, red or dark blood in stool, weight loss, abdominal pain, cramps, or bloating.
- Surgery is the most common treatment for colon cancer.



# Chron's Disease

- Chron's disease is an ongoing disorder that causes inflammation of the digestive tract.
- The disease can affect any area of the GI tract, from the mouth to the anus, but it most commonly affects the lower part of the small intestine, the ileum.
- The swelling extends deep into the lining of the affected organ.
- The swelling can cause pain and can make the intestines empty frequently, resulting in diarrhea.
- Chron's disease may be caused by an abnormally functioning immune system.
- Treatment includes prescription medications, nutritional supplements, surgery, or a combination of these.
- There is no cure.



# Celiac Disease

- Celiac disease is a digestive disease that damages the small intestine and interferes with absorption of nutrients from food.
- People who have celiac disease cannot tolerate a protein called gluten, found in wheat, rye, and barley.
- When people with celiac disease eat foods or use products that contain gluten, their immune system responds by damaging the small intestine.
- Celiac disease is an autoimmune disease that is genetic.
- The most common symptoms include pain in the digestive system or other parts of the body.
- The only know treatment is a gluten-free diet.



# Appendicitis

- Appendicitis, inflammation of the appendix, is the most common surgical disease.
- It results from the obstruction of the opening to the appendix by a mass, stricture or infection.
- Symptoms of appendicitis include generalized abdominal pain, pain localized in the lower right abdomen, nausea, vomiting, possibly fever, and an elevated white blood cell count.
- Treatment involves the removal of the appendix and antibiotics.



# Inguinal Hernia

- Inguinal hernias occur when a part of the intestine protrudes through a weak point or tear in the abdominal wall.
- This protrusion creates a bulge which can be painful.
- Some inguinal hernias occur at birth when the abdominal lining does not close properly.
- Other inguinal hernias occur later in life when muscles weaken or deteriorate.
- The most common treatment is surgery.

