

Week 9 Digestive System

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LAH3C

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3 Main Functions

- **Digestion:** process of breaking down food
- **Absorption:** transfer of nutrients into circulation
- **Elimination:** removal of undigested waste material

Vocabulary

- Saliva: Produced by the salivary glands, moistens and helps break down the food
- Mastication: chewing
- Bolus: chewing plus action of saliva produces a ball of food that is pushed back and downward by the tongue.
- Emesis: vomit
 - hyperemesis=?

Vocabulary

- Cholecyst: gallbladder
- Hepat: Liver
- Gastri: Stomach
- Colon: Colon
 - Colonoscopy?
- Enter: Intestine
 - Gastrointestinal?
 - Gastroenteritis?

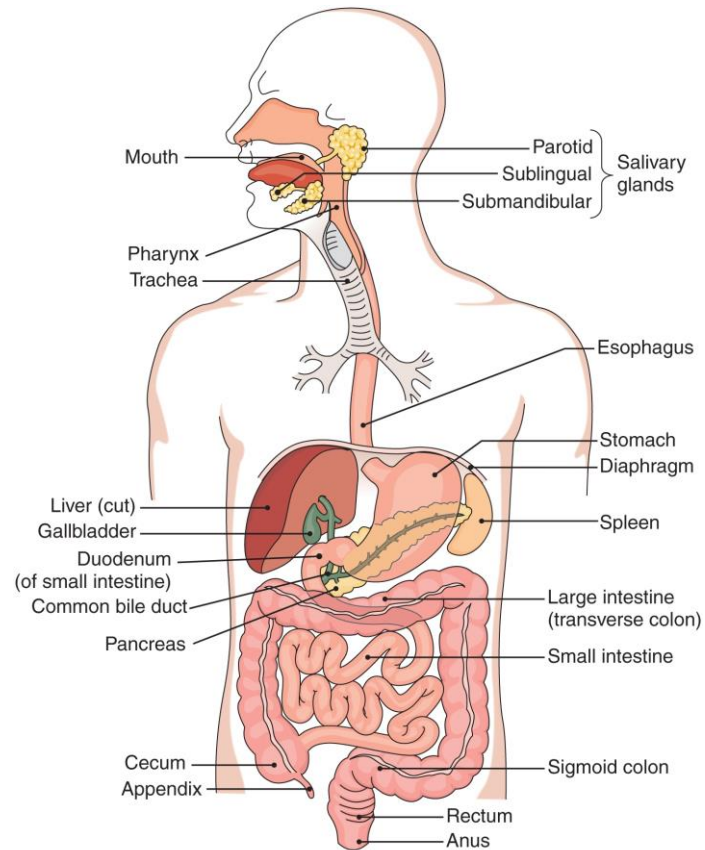
Vocabulary

- Phagia: swallowing
 - Dysphagia?
- Hernia: protrusion of one organ into area of another
 - Hiatal hernia?
- GERD: gastroesophageal reflux disease
- GI: gastrointestinal
- HCL: hydrochloric acid
- BM: bowel movement

Questions

- What is the meaning of absorption in the digestive process?
- Where does absorption take place?
- What is it called when a patient has trouble swallowing?
- Into which digestive organ is Hydrochloric acid secreted?
- If I am masticating my food, what am I doing?

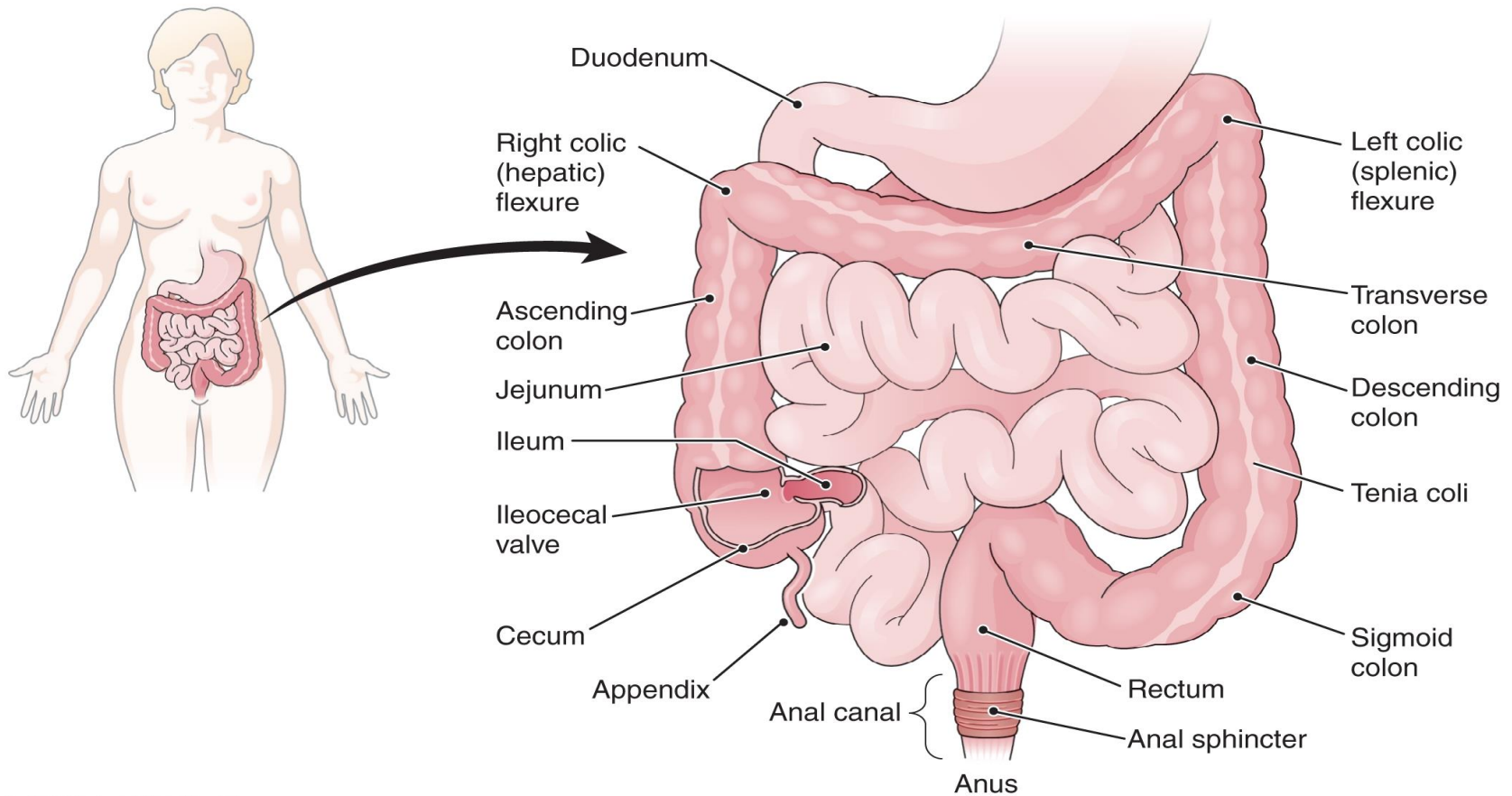
The Digestive System



Organs

- Mouth
- Pharynx
- Esophagus
- Stomach:
 - storage; acids and enzymes break down food.
- Small intestine
- Large intestine

The Small and Large Intestine



Accessory Digestive Organs

- Liver
 - Makes bile
 - Detoxifies harmful substances
 - Makes cholesterol
- Gallbladder
 - Stores and delivers bile to intestines
- Pancreas
 - Digestive enzymes aid in fat digestion
 - endocrine functions: insulin

Major Activities of the Liver

- Production of bile
- Storage of glucose as glycogen
- Modification of fats so they can be used more efficiently
- Storage of vitamins & iron
- Formation of blood plasma proteins
- Destruction of old red blood cells & recycling or elimination of their parts
- Manufacture of urea
- Detoxification of harmful substances

Effects of Aging

- Receptors for taste & smell deteriorate: loss of appetite
- Decrease in saliva & poor gag reflex: difficulty swallowing
- Tooth loss & poorly fitting dentures:
 - difficulty chewing
- Decreased activity of digestive organs: poor absorption & digestion
- Slowing of peristalsis: constipation

Common Diseases/Conditions

- Appendicitis
- Peritonitis
- Gastroesophageal reflux disease (GERD)
- Inflammatory bowel disease (IBD)
- Ulcer
- Cirrhosis
- Hepatitis

- Constipation
- Diarrhea
- Gastritis
- Colon cancer
- Diverticulitis
- Cholecystitis
- Hemorrhoids

Disorders

- Ulcer
 - Hole or break in protective lining of digestive tract
- Crohn's Disease
 - Inflammation of the mucosal lining of intestine
- Appendicitis
 - Inflammation of appendix
 - Rupture causes peritonitis
- Diverticulosis
 - Abnormal pouches in the colon
- Diverticulitis
 - Inflammation of diverticula

Metabolism

- Thousands of coordinated, carefully regulated chemical reactions that sustain life
- Two phases:
 - **Catabolism:** breakdown into molecules & release of energy
 - **Anabolism:** building of materials needed for cellular activities

Nutrients=Energy

- **Carbohydrates:** 55-60%
- **Fats:** 30% or less
- **Proteins:** 15-20%

Nutrients

- **Vitamins**

- Organic compounds found in living things
- Parts of enzymes or other substances essential for metabolism
- Deficiencies lead to nutritional diseases
- Water soluble
- Fat soluble

- **Minerals**

- Inorganic chemical substances
- Needed for formation of bones & teeth, fluid balance, muscle contraction, nerve impulse conduction, & blood clotting

Eating Disorders

Anorexia nervosa

abnormal dieting and use of laxatives

Bulimia

binge eating, vomiting, laxative use

Binge eating

Obesity

connected to many diseases

Disorders

- Crohn's Disease
 - Inflammation of mucosal lining of intestine
- Appendicitis
 - Inflammation
 - Ruptured appendix can lead to peritonitis
- Diverticula/Diverticulosis
 - Abnormal pouches in colon
- Diverticulitis
 - Inflammation of diverticula

And....

- Cholelithiasis
 - Stones in the gallbladder
- Cholecystitis
 - Inflammation of the gallbladder
- Hepatitis
 - Inflammation of the liver; causes jaundice
- Jaundice
 - Yellow appearance of skin and eyes
- Cirrhosis
 - Chronic liver disease and damage to liver

Pharmacology

- Antibiotics are used to treat
 - Crohn's Disease, ulcers, diverticulitis
- Antacids
 - Usually OTC.
 - Taken after meals to neutralize stomach acid
- Anti-nausea medications
 - Compazine

Situation

- Reggie, a middle-aged man began feeling a burning sensation in his upper abdomen one month ago. He took OTC antacids. Now the pain is worse. He does not have SOB, nausea or chest pains. His appetite is normal. His BP is slightly elevated. He has a family history of HTN. His WBC count is normal. Endoscopy revealed a 1 cm. ulcer

questions

- 1. Define all underlined terms and definitions.