

Review 03

●●Know structures & functions of diagram in text, p. 666●●
●●●●●●●●●●and diagram on p. 6 of Lecture Notes●●●●●●●●●●

Structures (and functions) of digestive system

mouth (mechanical and enzymatic breakdown)

lips, teeth, tongue, salivary glands

pharynx

back of throat; forms into esophagus and joined with trachea

epiglottis prevents swallowed food from entering glottis

(opening to trachea)

with swallowing, epiglottis pushed over glottis, which pushed up by trachea

DIGESTIVE SYSTEM

Cross-sectional structure of digestive tract (esophagus to anus):

outermost layer...coats, protects, holds in place	serosa, mesentery
next are smooth muscles...circular and longitudinal; movement & mixing	muscularis
then come large blood and lymph vessels	sub-mucosa
innermost layer...blood and lymph capillaries, lined with epithelial cells which may be specialized for production of various fluids or absorption	mucosa

Swallowed food moves down esophagus toward stomach via peristaltic contractions (peristalsis); locked in stomach via cardiac (esophagyl) and pyloric sphincters

Moves from stomach into small then large intestines and finally out of body through rectum, anal canal and anus.

Know these structures (and functions) of digestive system:

Mouth (lips, teeth, tongue, salivary glands)

pharynx; epiglottis; esophagus; stomach

small intestine (duodenum, pancreas, gall bladder, liver)

large intestine; rectum; anus

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“Tube within a tube” structure of digestive system

nothing within the tube is a part of body until absorbed

digestive system provides nice micro-habitats for a variety of small and microorganisms

Processing of food

Mechanical

MOUTH—chewing; increases surface area of food for digestion

STOMACH—churning; mixes food as liquefaction proceeds

Chemical

Non-enzymatic:

MOUTH—SALIVA [salivary glands]—liquefaction of food

STOMACH—HYDROCHLORIC ACID [stomach]

- ① **softening of connective tissues in meats and cell walls of plant materials**
- ② **non-specific digestion of molecules**
- ③ **death to various bacteria, fungi, spores, and other critters in the food**
- ④ **solubilization of minerals for absorption**

GALL BLADDER—BILE [liver]—emulsifies fat droplets (also aids in absorption of fat soluble vitamins)

Enzymatic

See review of enzymes, page 8 of Lecture Notes

MOUTH—SALIVARY AMYLASE, LIPASE [in the saliva]

STOMACH—PEPSIN [from the mucosa]