

Pal worksheet: digestive system, wk10

1. Imagine you have just started eating a cheese burger.

What do we call the product after mastication in the oral cavity?

What do we call the product after stomach churning?

What do we call the product stored in the rectum?

2. Oral cavity (some of these may have more than one answer)

What teeth would you use to tear a piece of food:

What teeth would use to cut a piece of food:

What teeth would use to grind a piece of food:

What teeth would you use to chew a piece of food:

3. Think about the muscular movements that propel food down the GI tract.

What do we call movement of the jaw and jaw muscles that initiates breakdown of food in the oral cavity?

What do we call the movement of the esophagus that propels food towards the stomach?

What do we call the muscular movement of the stomach that mixes the food?

What do we call the movement of the small intestine and large intestine that propels food towards rectum?

What do we call the movement that expels feces from the anus?

Make a diagram of the GI tract in which you indicate with arrows where each of the movement types takes place

4. Draw a representative tooth, include neural innervation and major layers of the tooth

5. Draw a picture of the head and indicate the general location of the salivary glands as well as their names

6. What type of GI process takes place in:

Oral cavity:

Esophagus:

Stomach:

Small intestine:

Large intestine:

Rectum/anus:

7. Oropharynx

What is the opening from back of oral cavity to oropharynx called?

What structure prevents food from lodging in nasopharynx during swallowing?

8. Esophagus

a. Does the esophagus contain cardiac, smooth or skeletal muscle?

b. Where is this muscular compartment located?

c. Describe the neural innervation (autonomic? Somatic?)

8. Draw a picture in which you refer to the muscular layers of the stomach from external to internal – label –

9. Draw a picture of the stomach in which you indicate the major anatomical zones of the stomach as well as location of any sphincters

10. What cell types associated with the stomach secrete chemical substances involved in digestion? List the cell types and function

11. Small intestine

a. Name the three components of the small intestine – which segment plays the major role in digestion/chemical break-down of food?

b. Bile is released into which part of the small intestine?

c. Pancreatic digestive enzymes are released into what part of the intestine?

d. Draw a picture in which you include liver, gall bladder, pancreas, and duodenum and indicate how gall bladder and pancreas release products into duodenum, indicate what substances are released:

12. Large intestine

a. Draw the large intestine including major zones, flexures; include three macroscopic characteristics that help distinguish large intestine from small intestine

Rectum/Anus

b. Draw a longitudinal cross section of the anus and include pectinate line: why is this line important? Discuss vasculature, epithelium and neural innervation

13. Sphincters

a. Make a diagram in which you indicate all the major sphincters associated with the GI tract

b. Are any of these sphincters under voluntary control? If so, which ones?

c. What type of muscle is associated with these sphincters?

14. Physiology:

a. Where does chemical digestion first take place?

b. What is the name of the molecule involved?

c. Where does it come from?

d. What chemical and mechanical processes take place in the stomach?

e. What prevents the stomach from being degraded by stomach acid?

f. Name the cell types of the stomach that release important hormones or digestive enzymes – next to each cell type list the important hormone or digestive enzyme it releases

15. What are the accessory organs of digestion?

a. What functions take place in these accessory organs?

16. Where does most chemical digestion and absorption take place:

17. Which sphincters control movement of food matter through the GI tract? Where are they located?

18. What is the primary function of the large intestine?

19. Draw the small intestine and large intestine including component parts and names

in your diagram, include three macro characteristics that help differentiate large intestine from small intestine:

20. Working from esophagus to stomach to small intestine to large intestine draw a simple picture that helps to visualize the internal anatomy of the tube (muscle type? Smooth or rough or edged or ridged? If ridged, what do we call the ridges?)

21. Movement of jaw muscles to chew food is termed mastication. What words are used to describe the movement of the esophagus, stomach, small intestine and large intestine that take place during digestion?

Esophagus:

Stomach:

Small intestine:

Large intestine:

Thought question:

22. Given the absorption and secretion that takes place in the GI tract, what type of epithelium would you expect to encounter in most of the GI tract:

23. Where would you expect to find keratinized stratified squamous epithelium in the GI tract? Why?

24. During a review of the portal system to the liver you examine the contents of the hepatic portal vein – to your surprise, the portal vein seems to lack fats – draw a diagram in which you illustrate where in the GI tract fat absorption takes place and the route it takes to bloodstream (eventually):