

The Digestive System: Digestion and Absorption

1. List the three major nutrient classes (a.k.a. macronutrients).

2. Which of the following carbohydrates is NOT a disaccharide?

maltose

lactose

starch

sucrose

3. Match the following pairs of molecules with their monomers by placing the number next to the matching letter:

Sucrose _____

Maltose _____

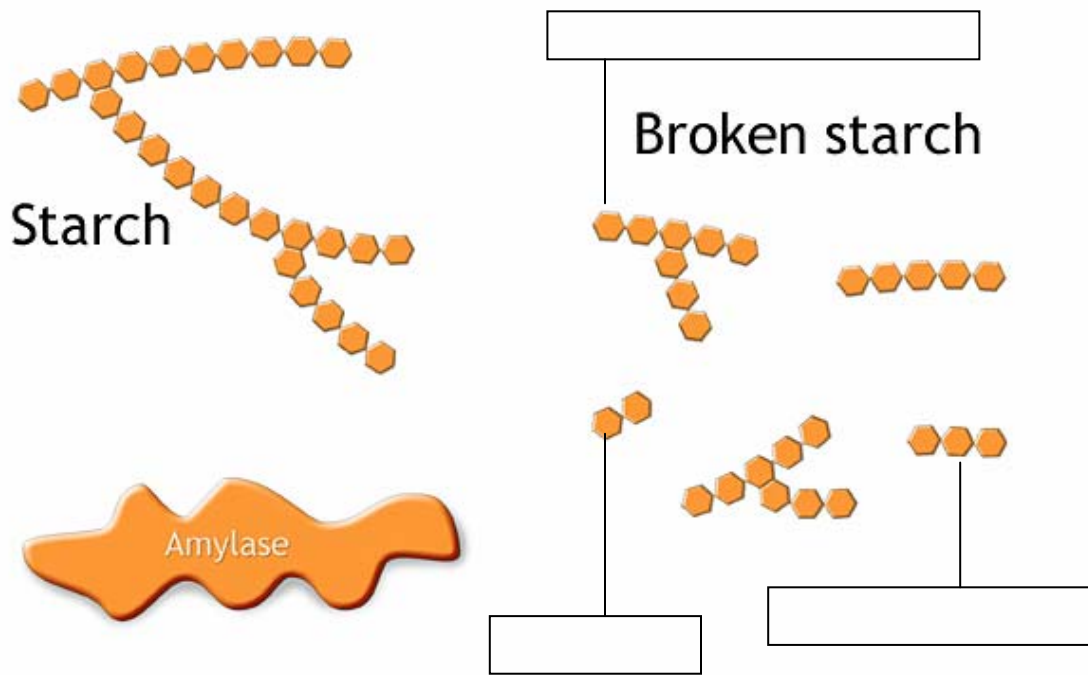
Starch _____

Lactose _____

The monomers:

1. Many glucose monomers
 2. glucose + fructose
 3. glucose + galactose
 4. glucose + glucose
4. The breakdown products (monomers) of proteins are _____ .
5. The breakdown products of triglycerides include monoglycerides and _____ .
6. Place the following labels on the diagram below:

- *maltose*
- *maltotriose*
- *limit dextrin*



7. Once food is acidified in the stomach, amylase continues to digest starch.
 - a. True
 - b. False
8. The digestive enzyme _____ begins the breakdown of proteins in the stomach.
9. Pepsin is inactivated in the duodenum.
 - a. True
 - b. False
10. Pancreatic _____ is responsible for the majority of fat digestion.
11. Most water and salt are absorbed in the colon.
 - a. True

b. False

12. The active transport of sodium is necessary for water absorption in the small intestine.

a. True

b. False

13. The final digestion of carbohydrates is accomplished with _____ enzymes.

14. Which of the following is NOT a brush border enzyme?

a. Amylase

b. Sucrase

c. Dextrinase

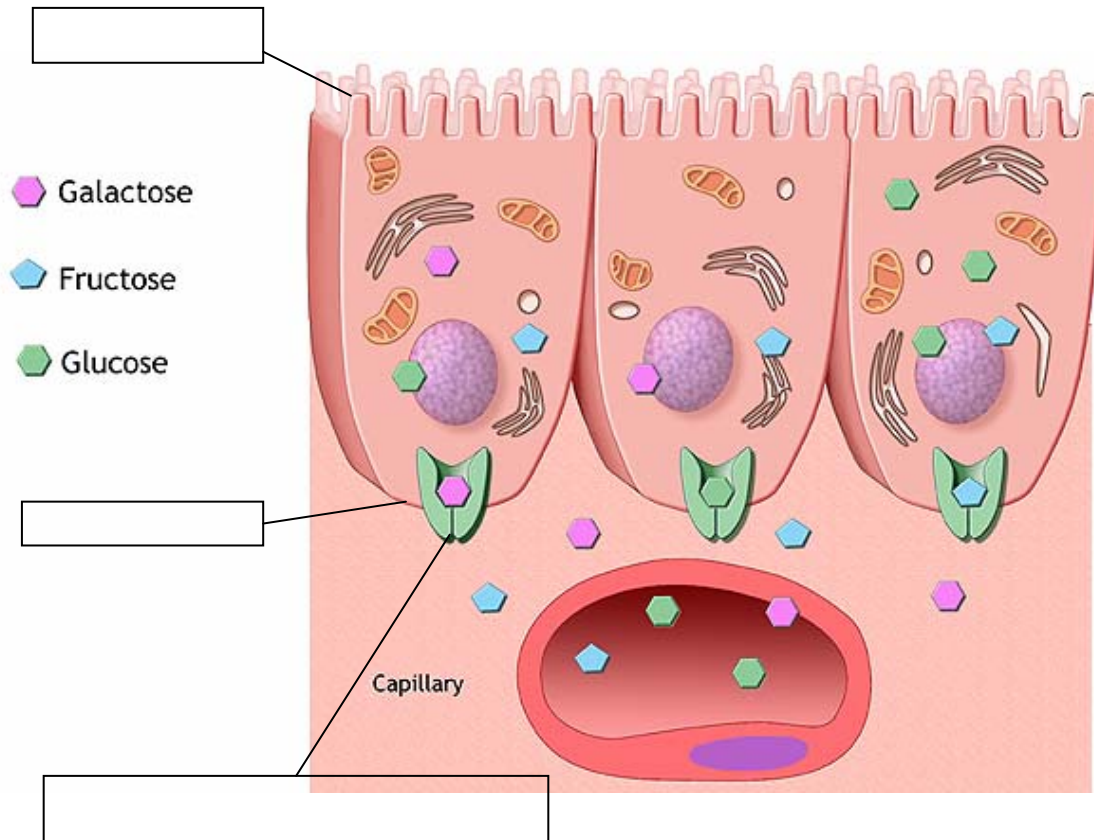
d. Glucoamylase

15. Place the following labels on the figure below:

Luminal side

Facilitated diffusion transporter

Basolateral side



16. List the three major pancreatic proteases.

a. _____

b. _____

c. _____

17. Only single amino acids are absorbed in the small intestine.

a. True

b. False

18. List the two main brush border proteases

a. _____

b. _____

19. List the two mechanisms that help to increase the surface area of lipids for subsequent digestion with pancreatic lipase.

a. _____

b. _____

20. Bile salts surround monoglycerides and free fatty acids to form tiny droplets called _____.

21. Triglycerides combine with lipoproteins inside the intestinal epithelial cells to form _____.

22. Chylomicrons exit the intestinal epithelial cells and then enter the _____ lymphatic capillaries.

23. The colon epithelium produces substantial amounts of digestive enzymes.

a. True

b. False

24. Colic bacteria produce substantial quantities of _____ as a by product of their metabolism.

25. List the three main substances that are absorbed in the large intestine.

a. _____

b. _____

c. _____