

Name: _____

Key

U2: Digestive System Review

What is on this test?

mechanical digestion

muscles

peristalsis

chemical digestion

bile

saliva

HCl

digestive anatomy

digestive disorders

projects

problems

enzymes

biomolecules

nutrients

§ monomers

what §

where?

tongue, teeth, trachea, epiglottis,
esophagus, stomach, intestines,
liver, pancreas, gall bladder,
appendix, rectum, anus, etc.

Fill in each blank with the correct word from the pool of words below. Each word may only be used once, but there are more words than blanks.

tongue	saliva	alimentary canal	rectum	sphincter
teeth	peristalsis	hydrolysis	peristalsis	gastric juice
anus	ileum	stomach	feces	pancreas
small intestine	jejunum	large intestine	esophagus	liver
pancreas	mucus	appendix	pharynx	bile
gall bladder	duodenum			

The long tube, made up of many structures, through which food passes and is digested, and through which wastes exit the body is called the alimentary canal.

Digestion begins in the mouth, where teeth grind the food and enzymes

in the saliva start to chemically break down the food. The food is moved around the mouth by the tongue, a muscular, pink structure.

The partially digested food then passes down a long tube called esophagus that eventually leads to the stomach. Muscular contractions of the wall of the esophagus help to move the food along. This is called peristalsis. The stomach churns to digest the food and contains acidic juices to help to break down the food. The opening to the stomach and the place where food leaves the stomach is a muscular ring that can open and close. This is like your mouth or your anus. Such a structure is called a(n) sphincter.

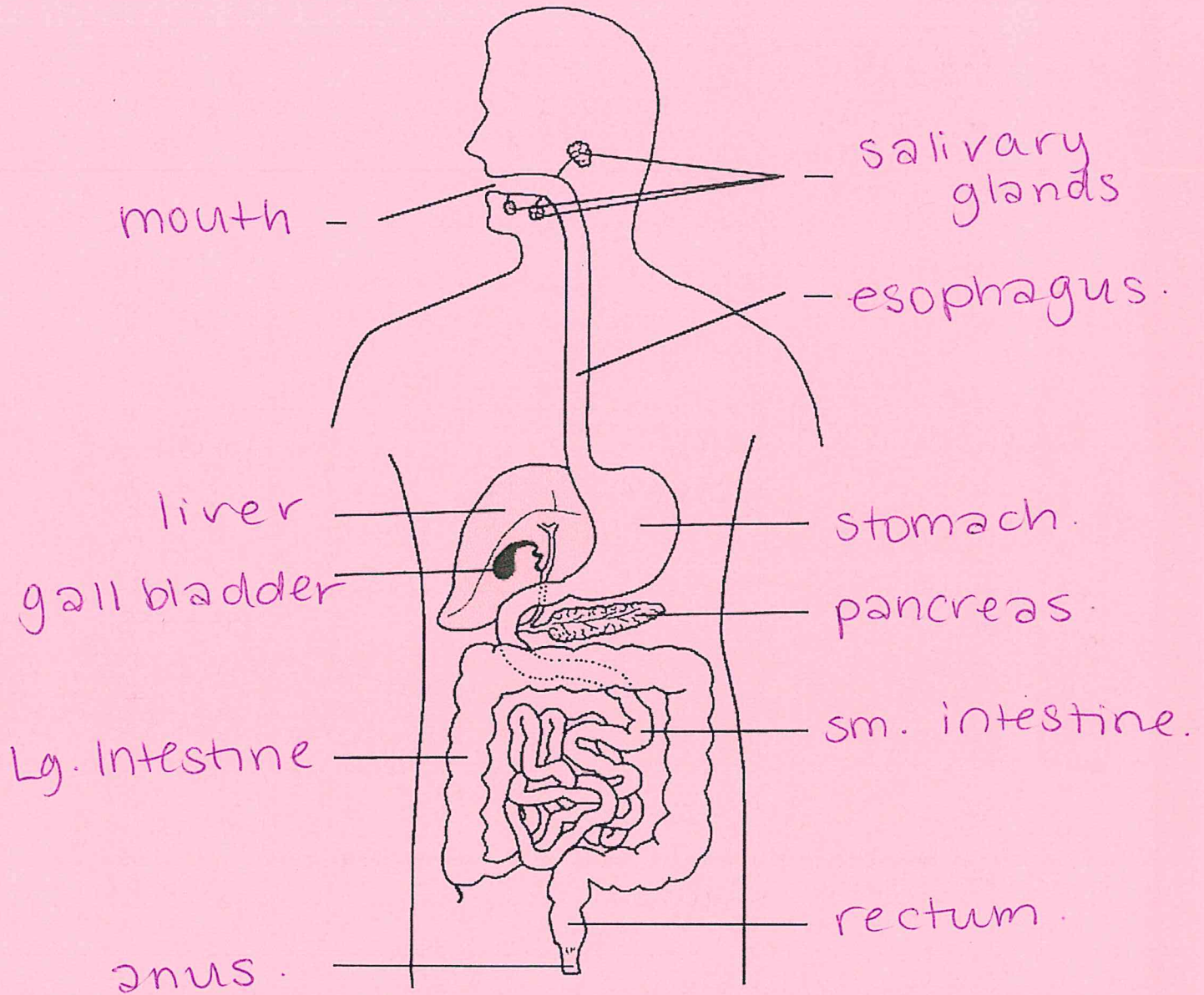
Food then passes to a long, coiled structure called the sm. intestine. Here, nutrients are absorbed and returned to the bloodstream. The duodenum, jejunum, and ileum are all parts of the small intestine. The undigested food then passes into a larger-diameter and shorter coiled structure called the lg. intestine. Water is reabsorbed here and reused by the body.

A small sac attached to the large intestine that can become infected and sometimes has to be removed is called the appendix.

The liver and the pancreas are organs that are associated with the alimentary canal and are part of the digestive system. The liver produces bile while is stored in the gall bladder and aids in the digestion of fats. The pancreas produces digestive juices that sent to the small intestine.

The last section of the large intestine is called the rectum. Undigested materials, dead bacteria, dead cells, water and other materials make up the feces which is pushed out from the body.

Be able to label digestive system diagrams (look up other too, it might not look exactly like this!)



List each step of the digestive system. Make sure to include which organs are involved and details of what happens:

ORGAN	WHAT HAPPENS?	CHEMICAL or MECHANICAL?	WHICH NUTRIENTS?
MOUTH -teeth -tongue -salivary	- bolus formed -saliva breakdown	both	Carbs + starch
esophagus	- passage of bolus	mech.	X
stomach	- HCl breakdown	both.	proteins ‡ ALL
Sm. intestine	- major absorption	both.	carbs lipids proteins
Lg. intestine	- absorbs H ₂ O + salts + vitamins	both.	X
Liver.	-bile -absorption -	Chem.	stores glucose.
Anus.	sphincter expells feces.	mech.	indigestible materials (feces)

Sample Questions:

You have probably experienced a burning sensation after you have thrown up. This is the acid from your stomach burning the delicate lining of your throat. What function do acidic gastric juices serve?

chemical breakdown of nutrients.

What is an ulcer?

stomach lining burned by HCl.

What is appendicitis?

appendix leaking / bursting

What are enzymes and how do they work?

- biological catalyst (proteins)



substrate

combined = product.

active site.

lock + key special fit to breakdown substrates of nutrients

Draw and label an enzyme:

Name the four main biomolecules, and their monomers:

nucleic acid (nucleotide) proteins
carbs (monosaccharide) (amino acids)
lipids (glycerol + fatty acids)

What are two functions of saliva?

→ protect GI tract.
→ chem. breakdown.

What side effects might occur if you had your gallbladder removed?

bile secretion inhibited
- digestive issues w/
chem. breakdown.

You may hear that digestion can start even before food enters the mouth. Why is this possible?

saliva produced by
sight / smell of foods.

The stomach is not affected by the presence of Hydrochloric acid. Why does it hurt when the stomach acid backs up into the esophagus?

Stomach has mucus protection,
esophagus does not.

What are the three main salivary glands called?

parotid
sublingual
submandibular.

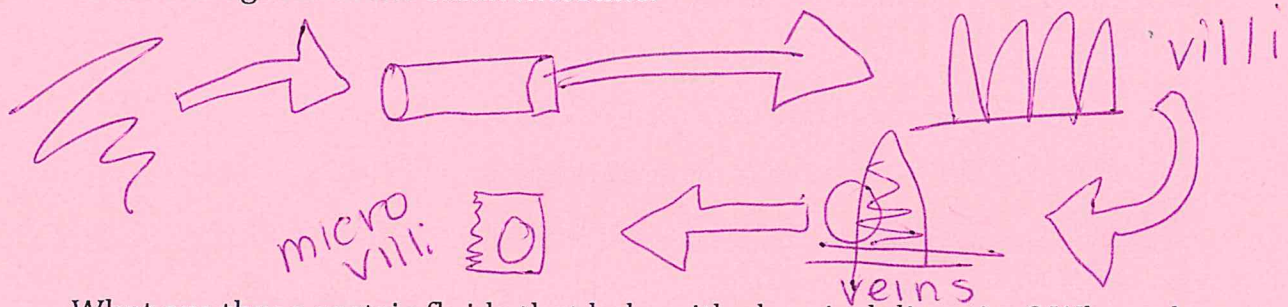
What is peristalsis?

mechanical movement of bolus (muscle contractions).

What might occur in your body if you experience liver failure?

- indigestion
- blood infections.
- ↓ cholesterol
- diabetes.
- ↓ iron
- blood clotting issues

Draw a diagram of the small intestine:



What are three gastric fluids that help with chemical digestion? Where does each fluid come from?

bile	liver
saliva	salivary glands
HCl	stomach

Where is the colon?

Lg. Intestine.

Fill in the blanks

1. amylase enzyme produced in the mouth used to break down starch into sugar
2. chem. dig mixing food with acid and enzymes for breakdown
3. trachea the back of the throat connects to the esophagus
4. mech. dig physically crushing, mashing and churning food
5. peristalsis smooth muscle contraction, moves food through body
7. esophagus muscular valve that allows food to enter the stomach
8. pharynx cartilage tube that brings air to the lungs
9. cardiac sphincter muscular tube that delivers food to the stomach
10. epiglottis tissue flap that protect from food entering the trachea
11. bolus food that has been mixed with gastric juice
12. HCO₃ protects the stomach from being digested
13. the folded inner lining of the stomach: allows stomach to get bigger
14. stomach acid a mix of water, HCl & enzymes made in the stomach
15. pyloric sphincter muscular valve that allows food to exit the stomach
16. duodenum the first part of the small intestine
17. villi finger-like projections of the small intestine lining
18. bile digestive fluid produced by cells of the small intestine
19. Sm. intestine major organ of digestion and absorption
20. microvilli tiny, hair-like projections found on the cells that line the villi
21. Liver produces powerful digestive enzymes
22. Liver makes bile to help digest fat
23. colon another name for the large intestine
24. gallbladder stores and delivers bile to the duodenum
25. lg. intestine organ responsible for the re-absorption of water from digestive tract