

GI Anatomy Quiz Answer Key PDF

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Which layer of the GI tract wall contains smooth muscle responsible for peristalsis?

- A. mucosa
- B. Submucosa
- C. Muscularis externa ✓**
- D. Serosa

What is the main function of the gallbladder?

- A. Produces insulin
- B. Stores bile ✓**
- C. Secretes digestive enzymes
- D. Absorbs nutrients

Which enzymes are secreted by the pancreas? (Select all that apply)

- A. Amylase ✓**
- B. Lipase ✓**
- C. Pepsin
- D. Trypsin ✓**

Explain the process of peristalsis and its importance in the GI tract.

Peristalsis is the process by which smooth muscles in the walls of the gastrointestinal (GI) tract contract in a coordinated manner to propel food and liquids from the esophagus to the stomach and through the intestines. This rhythmic movement is essential for the proper digestion and absorption of nutrients, as it ensures that food is mixed with digestive juices and moved along the digestive system.

Discuss the impact of liver dysfunction on digestion and metabolism.

Liver dysfunction impacts digestion by reducing bile secretion, which is essential for fat emulsification and absorption, and it affects metabolism by impairments in glucose regulation, protein synthesis, and detoxification processes.

How does the structure of the stomach aid in its function of digestion?

The stomach has a muscular wall that churns food and mixes it with gastric juices, which contain enzymes and acids that break down food particles.

What are the primary functions of the stomach? (Select all that apply)

- A. Protein digestion ✓**
- B. Nutrient absorption
- C. Food storage ✓**
- D. Mechanical breakdown of food ✓**

Which part of the small intestine is primarily responsible for iron absorption?

- A. Duodenum ✓**
- B. Jejunum
- C. Ileum
- D. Cecum

Which of the following are symptoms of GERD? (Select all that apply)

- A. Heartburn ✓**
- B. Diarrhea
- C. Acid regurgitation ✓**
- D. Abdominal pain ✓**

What are the main differences between the small intestine and the large intestine in terms of structure and function?

The main differences between the small intestine and the large intestine are that the small intestine is longer, has a more complex structure with villi for nutrient absorption, and is primarily involved in digestion and absorption, whereas the large intestine is shorter, wider, and focuses on water absorption and the formation of feces.

Which part of the GI tract is involved in water absorption?

- A. Stomach
- B. Small intestine
- C. Large intestine ✓**
- D. Esophagus

Which hormone stimulates the secretion of gastric acid?

- A. Insulin
- B. Glucagon
- C. Gastrin ✓**
- D. Secretin

Which hormones regulate digestive processes? (Select all that apply)

- A. Gastrin ✓**
- B. Cholecystokinin ✓**
- C. Adrenaline
- D. Secretin ✓**

Which organ is primarily responsible for nutrient absorption?

- A. Stomach
- B. Small intestine ✓**
- C. Large intestine
- D. Esophagus

Which structures are part of the large intestine? (Select all that apply)

- A. Cecum ✓**
- B. Jejunum
- C. Colon ✓**
- D. Rectum ✓**

What is the primary role of the pancreas in digestion?

- A. Absorbs nutrients
- B. Produces bile
- C. Secretes digestive enzymes ✓**
- D. Stores vitamins

Outline the steps involved in the digestion and absorption of carbohydrates in the GI tract.

1. Ingestion: Carbohydrates are consumed in food. 2. Salivary Amylase: In the mouth, salivary amylase begins breaking down starches into maltose. 3. Stomach: Carbohydrate digestion pauses in the acidic environment of the stomach. 4. Pancreatic Enzymes: In the small intestine, pancreatic amylase continues starch digestion. 5. Brush Border Enzymes: Enzymes on the intestinal lining convert disaccharides (maltose, sucrose, lactose) into monosaccharides (glucose, fructose, galactose). 6. Absorption: Monosaccharides are absorbed through the intestinal walls into the bloodstream via active transport and facilitated diffusion.

Which artery supplies blood to the stomach?

- A. Superior mesenteric artery
- B. Inferior mesenteric artery
- C. Celiac trunk ✓**
- D. Renal artery

Describe the role of the enteric nervous system in gastrointestinal function.

The enteric nervous system plays a crucial role in regulating gastrointestinal function by controlling peristalsis, secretion of digestive enzymes, and blood flow within the gut.

Which of the following are functions of the liver? (Select all that apply)

- A. Detoxification ✓**
- B. Bile production ✓**
- C. Insulin production
- D. Protein synthesis ✓**