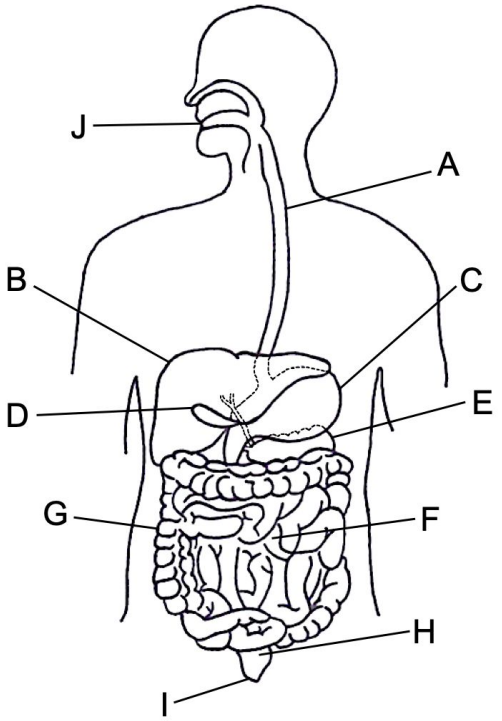
WJEC Wales Biology GCSE

1.3 (e) to (i) - The Digestive System

Flashcards

Identify the structures of the digestive system labelled in the diagram



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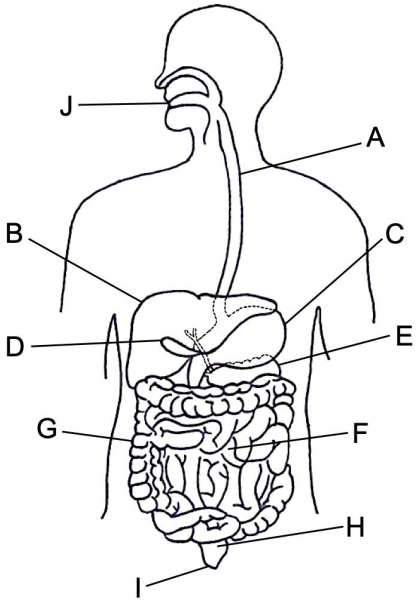


A	oesophagus	**F**	small intestine
B	liver	**G**	large intestine
C	stomach	**H**	rectum
D	gallbladder	**I**	anus
E	pancreas	**J**	mouth

Name the three processes that occur in the digestive system

Name the three processes that occur in the digestive system

- Digestion
- Absorption
- Egestion

What is the function of the mouth?

What is the function of the mouth?

- Food is chewed and broken down into smaller pieces - mechanical digestion
- Amylase in the saliva breaks down starch into maltose

What is the function of the oesophagus?

What is the function of the oesophagus?

Carries food to the stomach

What is the function of the stomach?

What is the function of the stomach?

- Secretes protease which breaks down proteins into amino acids
- Contains hydrochloric acid which kills any bacteria present in the food

What is the function of the pancreas?

What is the function of the pancreas?

Secretes carbohydrase and lipase which are transported to the small intestine

What occurs in the small intestine?

What occurs in the small intestine?

Digestion is completed:

- Carbohydrases break down carbohydrates into simple sugars
- Proteases break down proteins into amino acids
- Lipases break down lipids into fatty acids and glycerol

Food molecules are absorbed into the bloodstream

Describe how the small intestine is adapted for the absorption of food molecules

Describe how the small intestine is adapted for the absorption of food molecules

- Surrounded by a **network of capillaries** which provide a good blood supply, maintaining a high concentration gradient
- Many **villi** (in walls of small intestine) and **microvilli** (in walls of villi) to increase the surface area for absorption
- Walls of villi **one cell thick** giving a short diffusion distance

What is the function of the large intestine?

What is the function of the large intestine?

Reabsorbs water into the bloodstream

What is the function of the liver?

What is the function of the liver?

Produces bile

What is the function of the gallbladder?

What is the function of the gallbladder?

Stores bile prior to its release into the small intestine

What is the name of the tube that transports bile from the gallbladder to the small intestine?

What is the name of the tube that transports bile from the gallbladder to the small intestine?

Bile duct

What is bile?

What is bile?

A liquid secreted by the liver that aids digestion of lipids in the small intestine

Describe the two main functions of bile in the small intestine

Describe the two main functions of bile in the small intestine

- Neutralises acid from the stomach to provide optimum conditions for enzymes in the small intestine
- Emulsifies lipids, providing a greater surface area for lipases to digest them

How is food moved through the digestive system?

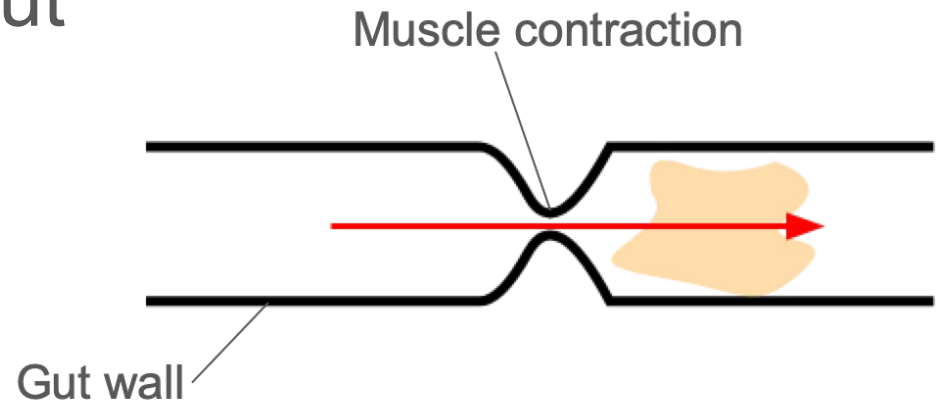
How is food moved through the digestive system?

By peristalsis

Describe the process of peristalsis

Describe the process of peristalsis

Wave of muscle contractions behind the food forces it down the gut



What is the function of the rectum?

What is the function of the rectum?

Stores faeces prior to egestion

What process occurs via the anus?

What process occurs via the anus?

Egestion

What is egestion?

What is egestion?

The removal of undigested waste material from the body

How can the gut be modelled?

How can the gut be modelled?

Using visking tubing

Describe the limitations of the visking tubing model

Describe the limitations of the visking tubing model

Structure	Visking tubing
Gut wall consists of living cells which can transport molecules via active transport	Non-living cells so no active transport
No pores in gut wall	Pores in visking tubing
Villi and microvilli provide large surface area	Smaller surface area as no villi
Bloodstream maintains steep concentration gradient	Uses distilled water so concentration gradient is not maintained