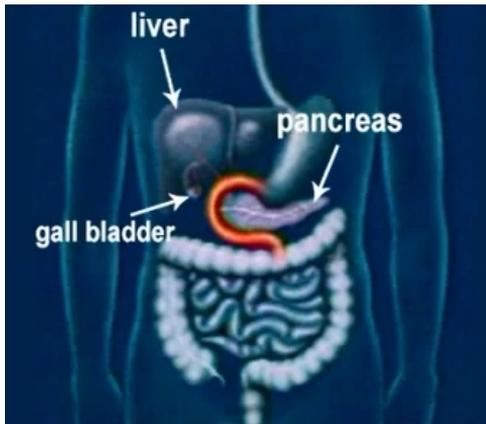


The small intestine

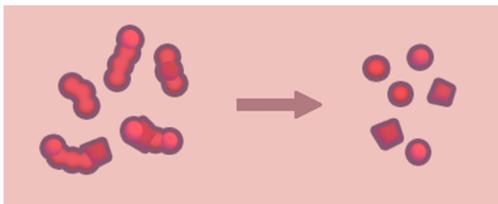
THE DUODENUM

The duodenum is the first segment of the small intestine. It is an important segment because it receives **pancreatic juice** and **bile** at the same time.



Pancreatic juice comes from the **pancreas** and contains several digestive enzymes, mainly pancreatic amylase, chymotrypsin, trypsin and lipase.

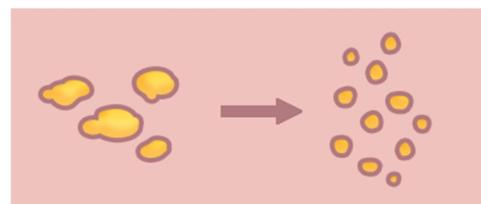
Pancreatic amylase continues to transform **complex carbohydrates** such as starch and glycogen. These substances are mainly transformed into **glucose** and **maltose**.



Protein transformation starts with pepsin in the stomach and continues in the duodenum through the action of several enzymes, namely trypsin and chymotrypsin. These enzymes break down **small chains of amino acids** into **small peptides** and **amino acids**.

Lipases are enzymes that transform **lipids** into **fatty acids** and **glycerol**.

Bile emulsifies lipids to help lipases do their job. An **emulsion** is a mixture of two liquids that normally cannot be mixed together, such as oil and water. A third ingredient, called an 'emulsifier', stabilises this mixture. The emulsion allows for the formation and coating of micro-droplets of fat to prevent them from sticking together.



THE PANCREAS IN DIGESTIX

The pancreas is an important element of the digestive system and this is also true in DIGESTIX.



Pancreatic juice transforms carbohydrates into glucose and maltose. Just like gastric juice, it also transforms proteins and lipids. So, in DIGESTIX, the pancreas has three specific targets.

THE LIVER IN DIGESTIX

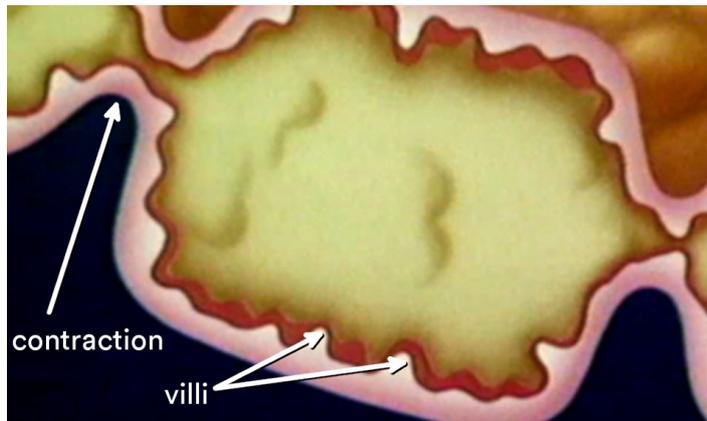
Bile comes from the liver. It has a yellowish colour and is stored in the gall bladder.



The liver is another digestive piece in DIGESTIX. It has an impact on the transformation of lipids. The game mentions the gall bladder together with the liver, but keep in mind that the gall bladder only stores bile; it does not secrete any enzymes.

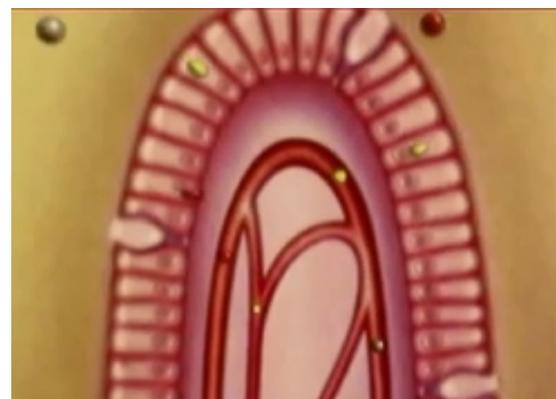
THE ABSORPTION OF NUTRIENTS

Nutrients travel through the small intestine with the help of peristaltic waves, which are the same type of **contractions** found in the oesophagus and stomach.



Once in the small intestine, nutrients have been sufficiently transformed to allow them to cross the intestinal wall and be absorbed by the body. The small intestine is lined with millions of folds, called **villi**. These folds greatly increase the absorption surface.

Nutrients then move into the blood, which brings them to the body's cells where they will be used.



The small intestine

What is the first section of the small intestine called?

- The duodenum
- The duodanem
- The duodenan

What fluid does not go into the duodenum?

- Bile
- Gastric juices
- Pancreatic juice

What effect do the enzymes in pancreatic juice have on certain nutrients?

- Simplification
- Swelling
- Disappearance

Carbohydrates are not broken down into...

- glucose
- maltose
- fatty acids

Lipids are not transformed into...

- fatty acids
- amino acids
- glycerol

Where does undigested matter go?

- Into blood vessels
- Into cells
- Into the colon

Answers

What is the first section of the small intestine called?

The duodenum

Well done! That's right!

The duodanem

Wrong! That's not the right answer.

The duodenan

Wrong! That's not the right answer.

What fluid does not go into the duodenum?

Bile

Wrong! Bile flows into your duodenum.

Gastric juices

Well done! Gastric juices are produced in your stomach.

Pancreatic juice

Wrong! Pancreatic juice flows through your duodenum.

What effect do the enzymes in pancreatic juice have on certain nutrients?

Simplification

Well done! Enzymes help reduce the size of some nutrients.

Swelling

Wrong! That's not the right answer.

Disappearance

Wrong! Nice try, though.

Carbohydrates are not broken down into...

glucose

Wrong! Some carbohydrates are broken down into glucose.

maltose

Wrong! Some carbohydrates are broken down into maltose.

fatty acids

Well done! Lipids are broken down into fatty acids.

Lipids are not transformed into...

fatty acids

Wrong! Lipids are broken down into fatty acids.

amino acids

Well done! Proteins are broken down into amino acids.

glycerol

Wrong! Lipids are broken down into glycerol.

Where does undigested matter go?

Into blood vessels

Wrong! Nutrients enter your bloodstream.

Into cells

Wrong! That's not right.

Into the colon

Well done! Anything that is not digested goes into your colon.