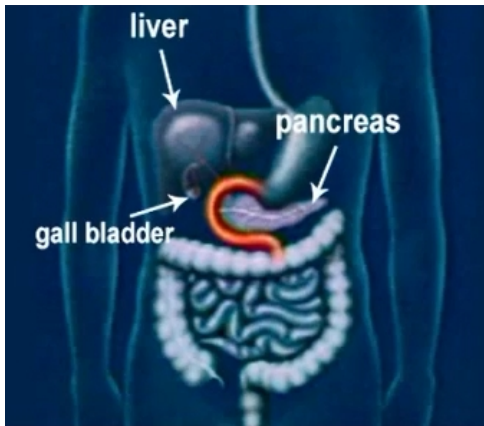


The small intestine

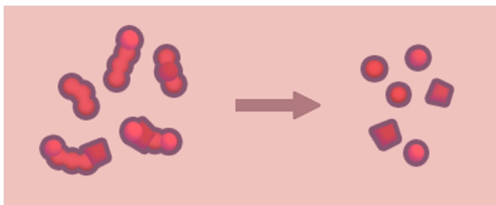
THE DUODENUM

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.

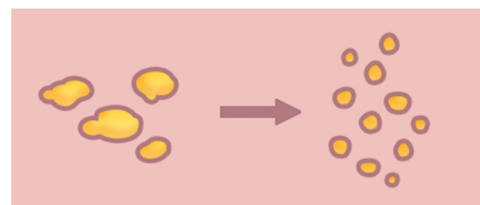
Pancreatic amylase continues to transform **complex carbohydrates** such as starch and glycogen. These substances are mainly transformed into **glucose** and **maltose**.



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

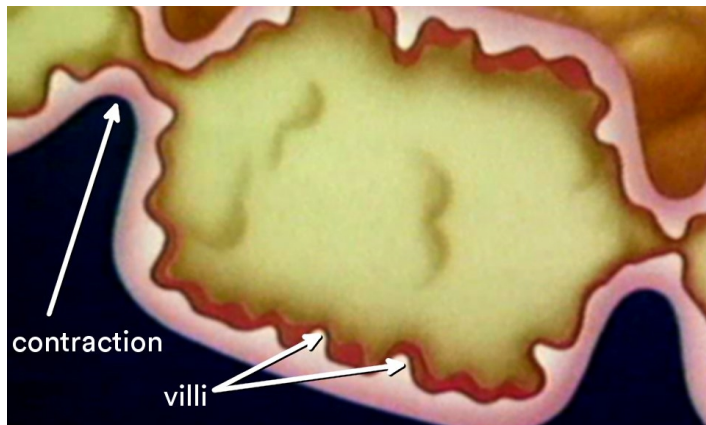
Bile comes from the liver. It has a yellowish colour and is stored in the gall bladder.



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.

