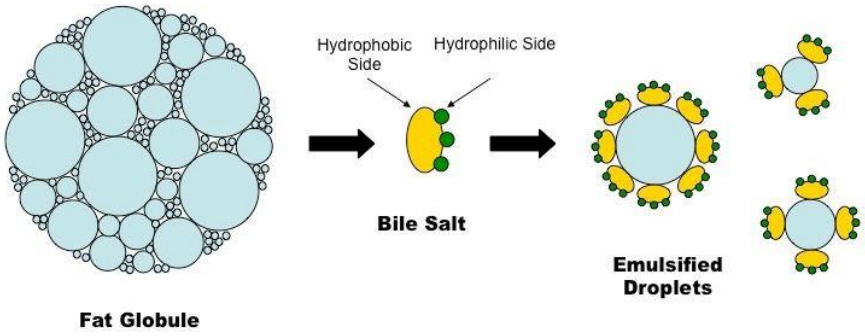
Biology: Digestion

Key word	Definition
Digestion	Breaking down nutrients into smaller molecules.
Carbohydrase	A type of enzyme which breaks down carbohydrates. E.g. Amylase
Protease	A type of enzyme which breaks down protein. E.g. Pepsin
Lipase	A type of enzyme which breaks down fats.
Bile	Molecules which surround fat to make it easier to digest. It is not an enzyme.
Emulsification	The process of turning large fat pieces into smaller pieces. The fat is surrounded by the emulsifier (bile).
Absorption	The uptake of nutrients into the blood via the small intestine.
Villi	Projections in the small intestine to increase surface area.
Microvilli	Smaller projections on the villi which further increase the surface area.

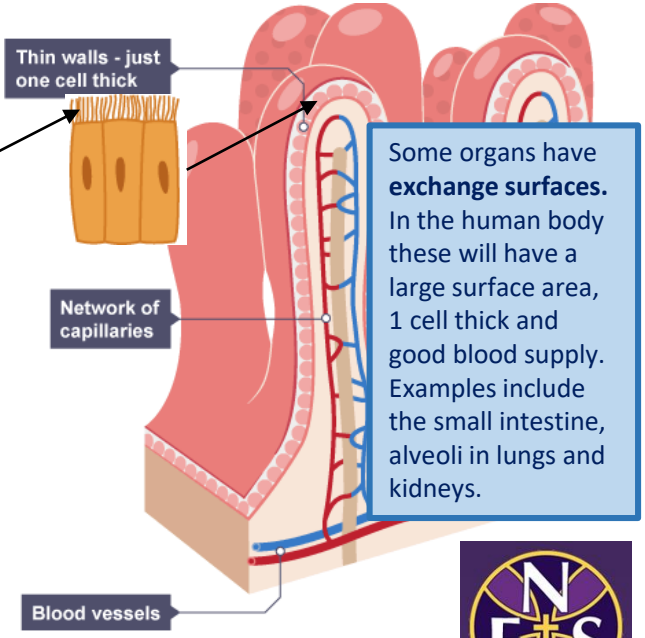


Enzyme	Found in the: Salivary Glands	Stomach	Pancreas	Small Intestine	Breaks Down	Into
Amylase	✓		✓	✓	Starch	Sugar
Lipase		✓	✓	✓	Fats	Fatty Acids and Glycerol
Protease e.g. Pepsin		✓	✓	✓	Proteins	Amino Acids

Enzymes are found throughout the digestive system. They **speed up** the breakdown of the nutrients so we can **absorb** them efficiently.
Once inside the body they are used for **growth and repair**.

The small intestine is an exchange surface adapted to absorbing nutrients.

- It has a large surface area (folded, villi, microvilli)
- It has lots of capillaries to allow substances to diffuse into the blood
- Its just 1 cell thick to provide a short diffusion distance



Some organs have **exchange surfaces.** In the human body these will have a large surface area, 1 cell thick and good blood supply. Examples include the small intestine, alveoli in lungs and kidneys.

Bile emulsifies fat from large pieces to smaller pieces.

Bile is made in the liver and stored in the gall bladder.