

7 Enzymes and absorption – Part 2

Name: _____ Class: _____ Date: _____

Vocabulary

Write each word three times.

English	Write it 3 times (English)		
Chemical digestion	_____	_____	_____
enzymes	_____	_____	_____
soluble	_____	_____	_____
amylase	_____	_____	_____
starch	_____	_____	_____
sugars	_____	_____	_____
protease	_____	_____	_____
protein	_____	_____	_____
amino acids	_____	_____	_____
lipase	_____	_____	_____
fatty acids	_____	_____	_____
glycerol	_____	_____	_____
hydrochloric acid	_____	_____	_____
microorganisms	_____	_____	_____
villi	_____	_____	_____

English**Write it 3 times** (English)

surface area

absorption

capillary

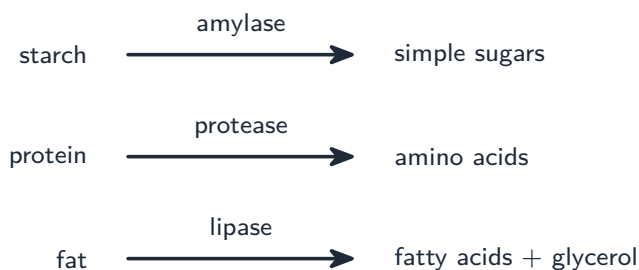
lacteal

Recall

Large food molecules are too big to enter the blood. **Chemical digestion** uses **enzymes** to break them into small, **soluble** molecules.

New ideas

Read these first, then do the Practice.

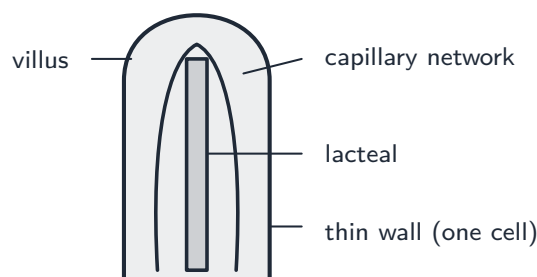
■ 1 The digestive enzymes

Enzyme	Breaks down	Into
amylase	starch	simple sugars
protease	protein	amino acids
lipase	fats	fatty acids and glycerol

The stomach also makes **hydrochloric acid**, which kills **microorganisms** and gives the best pH for its protease.

■ 2 Absorption in the villi

The small intestine is lined with millions of tiny finger-shaped **villi** that give a huge **surface area** for **absorption** :



Each villus has a thin wall (a short distance to travel), a **capillary** network (takes up sugars and amino acids) and a **lacteal** (takes up fats).

Watch out: match each enzyme to its food – **amylase** → starch, **protease** → protein, **lipase** → fats. The **villi** are adapted for fast absorption: a huge surface area, thin walls and a rich blood supply.

Practice

Try these in order.

7.6 Which enzyme breaks down starch, and what does it make? [2]

7.7 Protease breaks protein down into what? [1]

7.8 Give two jobs of the acid in the stomach. [2]

7.9 Why is the small intestine lined with villi? [1]

7.10 Name the two transport vessels found inside a villus. [2]

7.11 Challenge. Explain how **two** features of a villus help it absorb digested food quickly. [2]