

7 Enzymes and absorption – Part 2

Name: _____ Class: _____ Date: _____

Vocabulary 词汇

Write each word three times. 把每个单词抄写三遍。

English	中文	Write it 3 times (English)		
Chemical digestion	化学消化	_____	_____	_____
enzymes	酶	_____	_____	_____
soluble	可溶	_____	_____	_____
amylase	淀粉酶	_____	_____	_____
starch	淀粉	_____	_____	_____
sugars	糖	_____	_____	_____
protease	蛋白酶	_____	_____	_____
protein	蛋白质	_____	_____	_____
amino acids	氨基酸	_____	_____	_____
lipase	脂肪酶	_____	_____	_____
fatty acids	脂肪酸	_____	_____	_____
glycerol	甘油	_____	_____	_____
hydrochloric acid	盐酸	_____	_____	_____
microorganisms	微生物	_____	_____	_____
villi	绒毛	_____	_____	_____

English	中文	Write it 3 times (English)
surface area	表面积	_____
absorption	吸收	_____
capillary	毛细血管	_____
lacteal	乳糜管	_____

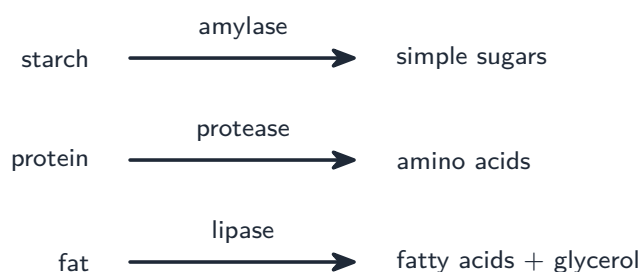
Recall

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

New ideas

Read these first, then do the Practice.

■ 1 The digestive enzymes

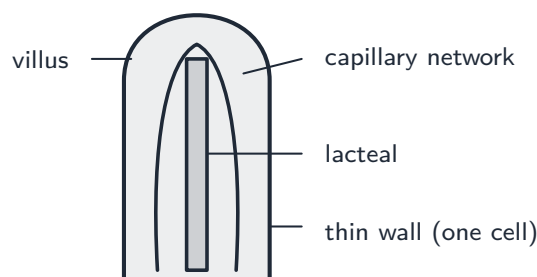


Enzyme	Breaks down	Into
amylase 淀粉酶	starch 淀粉	simple sugars 糖
protease 蛋白酶	protein 蛋白质	amino acids 氨基酸
lipase 脂肪酶	fats	fatty acids 脂肪酸 and glycerol 甘油

The stomach also makes **hydrochloric acid** 盐酸, which kills **microorganisms** 微生物 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** 绒毛 that give a huge **surface area** 表面积 for **absorption** 吸收:



Each villus has a thin wall (a short distance to travel), a **capillary** 毛细血管 network (takes up sugars and amino acids) and a **lacteal** 乳糜管 (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]