

7.3 Physical digestion

Name: _____ Class: _____ Date: _____

Total: 7 marks

KEY WORDS physical digestion 物理消化 • teeth 牙齿 • bile 胆汁 • surface area 表面积 • molars 臼齿

Objective

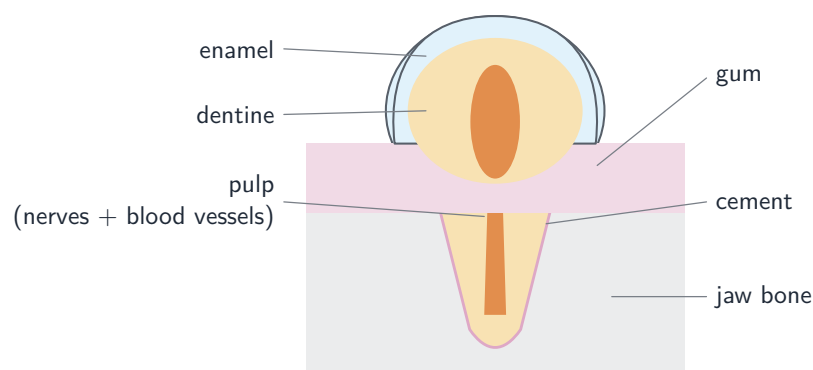
Build the skills to answer exam questions on **physical digestion** 物理消化 — the **teeth** 牙齿, the stomach, and **bile** 胆汁.

You must be able to:

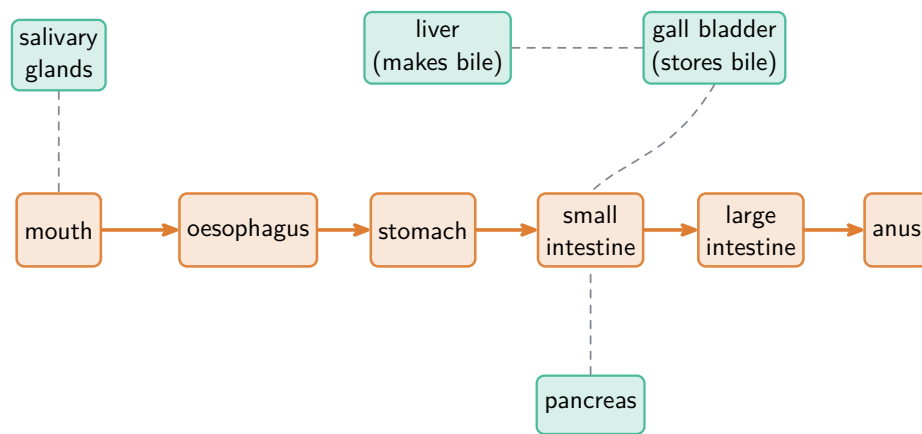
- name the four types of tooth and their jobs
- describe physical digestion (smaller pieces, larger surface area)
- explain how bile emulsifies fats

1 Worked examples

■ Teeth and bile



Physical digestion breaks food into smaller pieces — a larger surface area for enzymes



→ food's path - - juices added

Teeth begin mechanical digestion in the gut

- **teeth:** incisors (bite), canines (tear), premolars/molars (chew/grind).
- **bile** (from liver, stored in gall bladder) emulsifies fats → larger surface area for lipase. Bile has no enzymes.

2 Practice

2.1 Name the type of tooth used for biting and cutting. [1]

2.2 State why physical digestion is useful for later (enzyme) digestion. [1]

3 Exam-style questions

3.1 Bile emulsifies fats, which means it: [1]

- **A** digests fat into fatty acids
 - **B** breaks large fat drops into small droplets
 - **C** neutralises acid
 - **D** absorbs fat
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3.2 Bile is made in the liver.

(a) State where bile is stored. [1]

(b) Explain why emulsifying fat speeds up its digestion. [2]

3.3 State the job of the molars and premolars. [1]

Solutions

2.1 incisors.

2.2 it makes the pieces smaller, giving a larger surface area for enzymes to act on.

3.1 B. Emulsifying breaks large fat drops into many small droplets.

3.2 (a) the gall bladder.

(b) small droplets give a much larger surface area; so lipase can digest the fat faster.

3.3 chewing and grinding food.