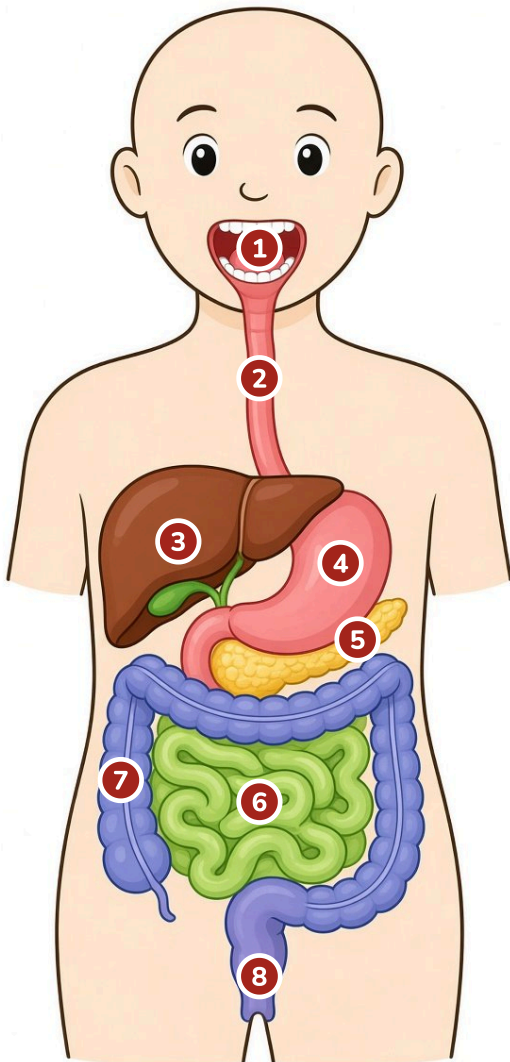




Instructions: No word bank: name the numbered parts from memory or from the module. Number the discoveries in order and write each date. Analyse the source, explain significance, then write full-sentence answers and plan the essay.

1. Name the parts (no word bank)



1	2	3	4
5	6	7	8

Did you know?

- Villi give the small intestine a surface of about 30 square metres.
- The stomach makes a new lining every few days so its acid does not digest it.
- The liver does hundreds of different jobs.
- Beaumont tied food on a string and lowered it into his patient's stomach to watch digestion.

Background

Food is made of big molecules like starch, protein and fat. They are too big to pass into your blood. Digestion breaks food down into small molecules, such as glucose, amino acids and fatty acids, that can be absorbed and carried to your cells. Your digestive system is a long tube from mouth to bottom, about 8 to 9 metres long in an adult, plus helper organs.

2. Timeline: order and date

Number the events 1 to 7 (1 = earliest) and write the date of each.

#	Event	Date
1	Beaumont begins studying a patient's stomach	
2	Insulin is discovered	
3	Beaumont publishes on gastric juice	
4	Insulin structure worked out	
5	Réaumur studies digestion using a hawk	
6	Pavlov wins the Nobel Prize for digestion research	
7	Bacteria found to cause stomach ulcers	

4. Significance

Scientist or term	Who or what? Why does it matter?
William Beaumont	
Ivan Pavlov	
Frederick Banting	
Barry Marshall	
Digestion	

6. Longer answers (full sentences)

1. Explain the role of enzymes in digestion with one example.

2. Describe how food is absorbed and where it goes next.

3. Why does the pancreas belong to two body systems?

4. What did Barry Marshall's discovery change?

5. Explain in your own words: Explain the jobs of the small intestine and the large intestine.

3. Source analysis

I placed pieces of meat into the stomach through the opening, and after an hour or two found them partly dissolved, the outside soft and broken down.

William Beaumont, Experiments and Observations on the Gastric Juice (1833), (paraphrased)

1. What did Beaumont observe?

2. What does this show about the stomach?

3. Why are Beaumont's experiments seen as raising questions about ethics today?

5. Cause and consequence

1. Explain why fibre is important for digestion.

2. Explain one consequence of the discovery of insulin.

7. Essay question

Essay: 'The small intestine is the most important digestive organ.' How far do you agree? Plan an essay.

Plan: introduction · point for (evidence) · point against (evidence) · conclusion with your judgement.
