Your notes

GCSE Biology: revision notes

Controlling blood glucose and diabetes

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Controlling blood glucose

- Blood glucose concentration is monitored and controlled by the **pancreas**.
- If blood glucose is too high, the **pancreas** releases **insulin**. **Insulin** makes glucose move from the blood into cells.
- In liver and muscle cells, excess glucose is converted into **glycogen** for storage.

Glucagon (Higher)

- If blood glucose is too low, the **pancreas** releases **glucagon**.
- **Glucagon** makes liver cells convert **glycogen** back into glucose, which is released into the blood.
- **Insulin** and **glucagon** work against each other in a **negative feedback** cycle to keep blood glucose steady.

Type 1 diabetes

- In **Type 1 diabetes**, the **pancreas** produces too little **insulin**, so blood glucose can rise to dangerously high levels.
- It is treated with **insulin** injections, usually several times a day, and by controlling carbohydrate intake.

Type 2 diabetes

- In **Type 2 diabetes**, the body's cells no longer respond properly to **insulin**.
- It is treated with a carbohydrate-controlled diet and regular exercise; medication may also be used.
- Obesity is a major risk factor for **Type 2 diabetes**.

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Key terms

Insulin	A hormone from the pancreas that makes glucose move from the blood into cells.
Glucagon	A hormone from the pancreas that makes the liver convert glycogen into glucose.
Glycogen	A storage carbohydrate made from glucose in the liver and muscles.
Type 1 diabetes	A condition in which the pancreas produces too little insulin.
Type 2 diabetes	A condition in which body cells no longer respond properly to insulin.
Pancreas	The organ that monitors blood glucose and releases insulin and glucagon.
Negative feedback	A control system that reverses a change to keep conditions steady.

Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

1. Which organ monitors blood glucose concentration?
2. What does insulin do?
3. What is excess glucose stored as in the liver?
4. What is released when blood glucose is too low? (Higher)
5. What does glucagon do? (Higher)
6. What is the cause of Type 1 diabetes?
7. What is the cause of Type 2 diabetes?
8. How is Type 1 diabetes treated?

Answers

1. Pancreas
2. Makes glucose move from the blood into cells
3. Glycogen
4. Glucagon
5. Makes the liver convert glycogen into glucose
6. The pancreas produces too little insulin
7. Body cells no longer respond properly to insulin
8. Insulin injections

What to do next

Practise 12 questions on this topic

Try 7 exam questions, with mark schemes

Read the lesson, one step at a time

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