

14 Hormones and homeostasis – Part 2

Name: _____ Class: _____ Date: _____

Vocabulary

Write each word three times.

English	Write it 3 times (English)		
hormones	_____	_____	_____
gland	_____	_____	_____
target organs	_____	_____	_____
adrenaline	_____	_____	_____
Homeostasis	_____	_____	_____
pancreas	_____	_____	_____
liver	_____	_____	_____
insulin	_____	_____	_____
glycogen	_____	_____	_____
glucagon	_____	_____	_____
Type 1 diabetes	_____	_____	_____

Recall

Besides nerves, the body uses **hormones** – chemicals made by glands and carried in the blood.

New ideas

Read these first, then do the Practice.

■ 1 Nerves vs hormones

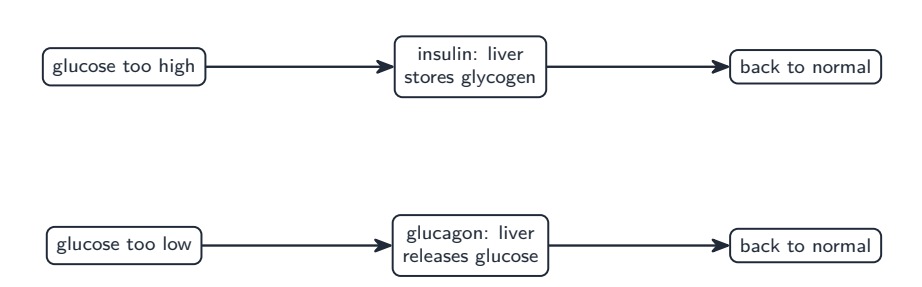
A hormone is made by a **gland** and carried in the blood to its **target organs** :

	nervous	hormonal
speed	fast	slower
lasts	short	longer
travels by	nerves	blood

For example, **adrenaline** prepares the body for action ('fight or flight').

■ 2 Controlling blood glucose

Homeostasis means keeping a steady internal environment. The **pancreas** and **liver** keep blood glucose steady:



- **insulin** lowers high glucose (stored as **glycogen**);
- **glucagon** raises low glucose.

In **Type 1 diabetes** the pancreas cannot make insulin.

Watch out: **nervous** control is fast and short-lived (along nerves); **hormonal** control is slower but longer-lasting (through the blood). For blood glucose, **insulin** lowers it and **glucagon** raises it – opposite hormones.

Practice

Try these in order.

14.6 What is a *hormone*? [1]

14.7 Give one difference between nervous and hormonal control. [1]

14.8 What does insulin do when blood glucose is too high? [2]

14.9 What does glucagon do when blood glucose is too low? [1]

14.10 What is the problem in Type 1 diabetes? [1]

14.11 Challenge. After a sugary meal a person's blood glucose rises. Explain how insulin brings it back to normal. [3]