

14 Hormones and homeostasis – 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)
hormones	激素	_____
gland	腺体	_____
target organs	靶器官	_____
adrenaline	肾上腺素	_____
Homeostasis	稳态	_____
pancreas	胰腺	_____
liver	肝脏	_____
insulin	胰岛素	_____
glycogen	糖原	_____
glucagon	胰高血糖素	_____
Type 1 diabetes	一型糖尿病	_____

Recall

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

New ideas

Read these first, then do the Practice.

■ 1 Nerves vs hormones

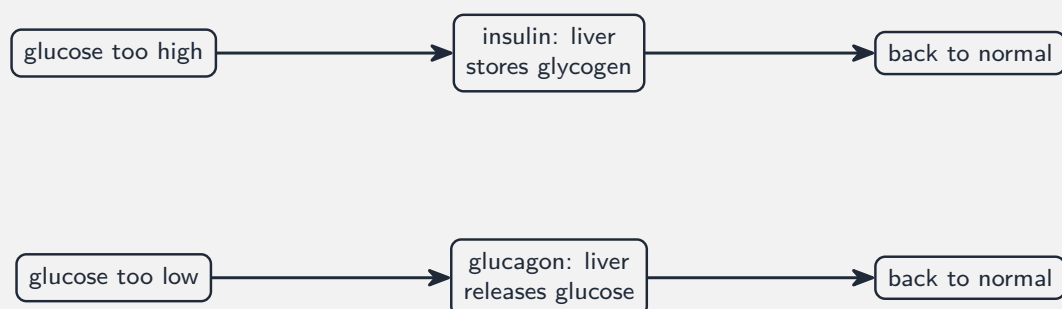
A hormone is made by a **gland** 腺体 and carried in the blood to its **target organs** 靶器官:

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

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

■ 2 Controlling blood glucose

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



- **insulin** 胰岛素 **lowers** high glucose (stored as **glycogen** 糖原);
- **glucagon** 胰高血糖素 **raises** low glucose.

In **Type 1 diabetes** 一型糖尿病 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]