

14 The nervous system – Part 1

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)		
coordinate	协调	_____	_____	_____
nervous system	神经系统	_____	_____	_____
electrical impulses	电脉冲	_____	_____	_____
neurones	神经元	_____	_____	_____
central nervous system	中枢神经系统	_____	_____	_____
brain	大脑	_____	_____	_____
spinal cord	脊髓	_____	_____	_____
peripheral nervous system	周围神经系统	_____	_____	_____
impulse	冲动	_____	_____	_____
reflex	反射	_____	_____	_____
response	反应	_____	_____	_____
stimulus	刺激	_____	_____	_____
receptor	感受器	_____	_____	_____
effector	效应器	_____	_____	_____

Recall

Your body must react to changes and **coordinate** 协调 its parts. The **nervous system** 神经系统 does this with fast **electrical impulses** 电脉冲 along **neurones** 神经元.

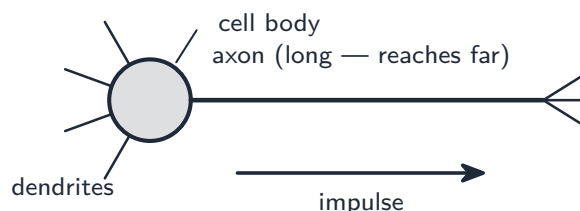
New ideas

Read these first, then do the Practice.

■ 1 Parts of the nervous system

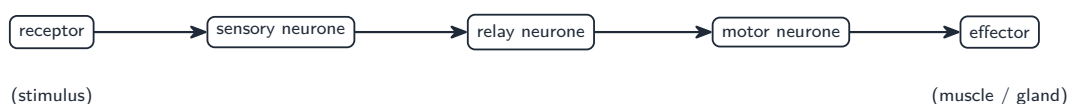
- the **central nervous system** 中枢神经系统 (CNS) — the **brain** 大脑 and **spinal cord** 脊髓;
- the **peripheral nervous system** 周围神经系统 — all the nerves outside the CNS.

A neurone carries an **impulse** 冲动 along a long fibre:



■ 2 The reflex arc

A **reflex** 反射 is a fast, automatic **response** 反应 to a **stimulus** 刺激. It follows a fixed path:



receptor 感受器 → sensory → relay → motor neurone → **effector** 效应器 (a muscle or gland).

Watch out: a **reflex** is fast and automatic because the impulse takes a fixed short path (the reflex arc) and does **not** wait for the brain to decide. The order is **receptor** → **sensory** → **relay** → **motor** → **effector**.

Practice

Try these in order.

14.1 What are the two parts of the central nervous system? [2]

14.2 What carries impulses around the body? [1]

14.3 What is a *reflex action*? [1]

14.4 Put the reflex arc in order: motor neurone, receptor, effector, sensory neurone, relay neurone. [2]

14.5 Give one example of an effector. [1]

14.6 Challenge. Explain why a reflex action, like pulling your hand off a hot object, is faster than a thought-out movement. [2]