

Study Guide — HBS Unit 4: Patient Perspectives (Pretest / Diagnostic)

Human Body Systems · Unit 4 — Patient Perspectives · Modeled on the PLTW Guided Review format

Vocabulary to know cold

Term	Definition
Neuron	The signaling cell of the nervous system, made of dendrites, cell body, and axon.
Dendrite	Branched neuron extension that RECEIVES incoming signals.
Axon	Long neuron fiber that carries the signal AWAY from the cell body.
Hormone	Chemical messenger secreted by an endocrine gland into the blood to act on target cells.
Pituitary gland	The 'master gland' at the base of the brain that releases tropic hormones controlling other glands.
Homeostasis	Maintenance of a stable internal environment (temperature, glucose, pH) despite external change.
Reflex	A rapid, automatic, involuntary response to a stimulus.
neur/o	Combining form meaning nerve (neuron, neurology).
encephal/o	Combining form meaning brain (encephalitis, electroencephalogram).
-esthesia	Suffix meaning sensation or feeling (anesthesia = without sensation).
Cornea	Clear front layer of the eye that lets in and begins focusing light.
Cochlea	Spiral inner-ear structure that converts sound vibrations into nerve signals for hearing.

Worked examples (follow the reasoning)

Example 1. Build the medical term for 'inflammation of the brain' from its word parts, then identify the combining form and the suffix.

- Start with the combining form for brain: 'encephal/o'.
- Add the suffix meaning inflammation: '-itis'.
- Drop the combining vowel before a suffix that begins with a vowel: encephal + itis.
- The word is 'encephalitis'.

Answer: Encephalitis — combining form encephal/o (brain) + suffix -itis (inflammation).

Example 2. A nurse needs to decide whether a patient's reaction is a reflex or a conscious decision. The patient instantly jerks a hand off a hot pan before saying 'ouch.' Explain why this is a reflex.

- Identify the stimulus: heat/pain at the hand.
- Note the timing: the response happens BEFORE the brain consciously processes the pain.
- Recall that a reflex is routed quickly through the spinal cord, not waiting for conscious thought.
- Because the response is rapid, automatic, and involuntary, it is a reflex.

Answer: It is a reflex: a rapid, automatic, involuntary response that occurs before conscious awareness of the pain.

Practice questions (with reasoning)

1. Which neuron part receives signals from other neurons?

- A. Axon
- B. Dendrites
- C. Axon terminal
- D. Myelin

Answer: B. Dendrites receive signals; the axon sends them away.

2. The endocrine system sends messages using:

- A. Hormones in the blood
- B. Bones
- C. Digestive enzymes
- D. Light

Answer: A. Endocrine glands release hormones into the bloodstream to reach target cells.

3. Keeping a constant body temperature is an example of:

- A. Digestion
- B. Homeostasis
- C. Reflex
- D. Hearing

Answer: B. Stable internal temperature is part of homeostasis.

4. The combining form 'neur/o' means:

- A. Brain
- B. Nerve
- C. Gland
- D. Eye

Answer: B. 'Neur/o' means nerve; 'encephal/o' means brain.