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VIDEO GUIDE · UNIT 1 · TOPIC 1.4

Neuroplasticity

Watch the lesson

Name _____ Class _____ Date _____

NOTES: FILL IN THE BLANKS WHILE YOU WATCH

1. _____ is the brain's ability to change and reorganize its connections in response to injury, learning, and experience; it occurs throughout life but tends to be greater when we're younger, and it can't necessarily make up for severe damage.
2. After brain injury, undamaged areas may reorganize their connections so different _____ help perform a disrupted function; with rehabilitation, some lost function can return.
3. Learning also changes the brain: repeated practice activates the same _____ again and again, strengthening their connections.
4. Connections strengthen through increased _____ release or more _____ on the receiving neuron, making a skill easier and more automatic.

CHECK YOUR UNDERSTANDING

1. After a stroke, a patient regains some of his speech through months of therapy, but not all of it. Which statement best explains this outcome?

(A) Neuroplasticity has limits and can't necessarily make up for severe damage

(B) Neuroplasticity only occurs in childhood

(C) Damaged neurons always regrow exactly as before

(D) Therapy has no effect on how the brain reorganizes

2. A woman who has been blind since early childhood reads Braille with her fingertips. Brain scans show that areas of her occipital lobe normally used for vision become active while she reads. This best illustrates:

(A) Sensory adaptation

(B) Sensory interaction

(C) Synesthesia

(D) Neuroplasticity

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3. A classmate says, "Each brain area has a fixed job, so the brain can't change after childhood." Which response is most accurate?

(A) Correct; plasticity ends in childhood

(B) Partly correct; only injury can change the brain

(C) Incorrect; learning reshapes connections throughout life, though plasticity is greater when young

(D) Incorrect; brain areas don't specialize in different functions

NOTES

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