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VIDEO GUIDE · UNIT 1 · TOPIC 1.3

The Neuron and Neural Firing

Watch the lesson

Name _____ Class _____ Date _____

NOTES: FILL IN THE BLANKS WHILE YOU WATCH

Parts of a neuron

1. The nervous system is made of billions of _____, specialized cells that receive and send signals, plus supporting cells.
2. Branching _____ receive incoming signals from other neurons.
3. The _____ is the long fiber that carries the electrical signal away when the neuron fires.
4. Information flows from the dendrites, to the _____, to the axon.

Firing

5. When not firing, a neuron is in a stable electrical state called its _____.
6. A neuron fires only if incoming signals reach its _____.
7. Under the _____, a neuron can't fire halfway (a switch, not a dimmer), so a stronger stimulus makes neurons fire more often, not harder.
8. When a neuron fires, a rapid electrical change called an _____ travels down the axon.
9. In _____, the inside of each section of the axon briefly becomes more positive.
10. After firing, the neuron needs a brief reset, the _____, before it can fire again.

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CHECK YOUR UNDERSTANDING

1. A researcher records from a neuron that is receiving no signals and has not fired for some time. Which state is the neuron in?

(A) Depolarization

(B) Resting potential

(C) Refractory period

(D) Action potential

2. A drug prevents a neuron's dendrites from receiving signals from other neurons. What is the most likely result?

(A) The neuron fires weaker action potentials

(B) The neuron stays in its refractory period

(C) The neuron is less likely to reach threshold and fire

(D) The neuron's axon starts receiving signals instead

3. A researcher monitoring one section of an axon sees the charge inside it swing from negative toward positive as a signal passes through. Which process is she observing?

(A) Depolarization

(B) Refractory period

(C) Resting potential

(D) Threshold

NOTES

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