

What is Nervous Tissue?

Worksheet

Nervous tissue is composed of neurons, which transmit electrical impulses, and neuroglia, which support and protect neurons, enabling rapid communication throughout the body.

Questions

1. Which part of a neuron receives incoming signals?
 - A) Axon
 - B) Dendrite
 - C) Myelin sheath
 - D) Synapse
2. What speeds up electrical impulse conduction along an axon?
 - A) Neurotransmitters
 - B) Myelin sheath
 - C) Dendrites
 - D) Synaptic cleft
3. What happens at the synapse?
 - A) Ions are digested
 - B) Neurotransmitters cross the gap to the next neuron
 - C) The axon divides
 - D) The cell body multiplies
4. What is the main function of neuroglia?
 - A) Generate electrical impulses
 - B) Contract to produce movement
 - C) Support and protect neurons
 - D) Secrete digestive enzymes
5. A neuron receives a chemical signal from another cell. What structure receives this input first?
6. Which structure speeds up signal conduction along a long axon?
7. What happens at the synapse when an electrical signal reaches the axon terminal?
8. Define: What are the two main cell types in nervous tissue?
9. Define: What is the function of dendrites?
10. Define: What does the myelin sheath do?

Answer Key

1. B) Dendrite - Dendrites are branch-like extensions specialized to receive signals from other neurons.
2. B) Myelin sheath - The myelin sheath insulates the axon and allows signals to jump between nodes, speeding conduction.
3. B) Neurotransmitters cross the gap to the next neuron - At the synapse, neurotransmitters are released and bind receptors on the next neuron, propagating the signal.
4. C) Support and protect neurons - Neuroglia (glial cells) support, nourish, and protect neurons but do not typically transmit impulses themselves.
5. Signal reception happens at branch-like extensions of the neuron. These structures are called dendrites.
Answer: The dendrite receives the incoming signal.
6. Faster conduction requires insulation that allows signals to jump between gaps. This fatty insulating layer is called the myelin sheath. Answer: Myelin sheath (produced by Schwann cells or oligodendrocytes).
7. Electrical signals cannot cross the gap between neurons directly. The axon terminal releases neurotransmitters into the synaptic cleft. Answer: Neurotransmitters bind receptors on the next neuron, transmitting the signal chemically.
8. Neurons (signal transmission) and neuroglia (support cells).
9. They receive signals from other neurons and carry them toward the cell body.
10. It insulates the axon, speeding up electrical signal conduction.

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