

Module 2: Biological Basis of Behavior

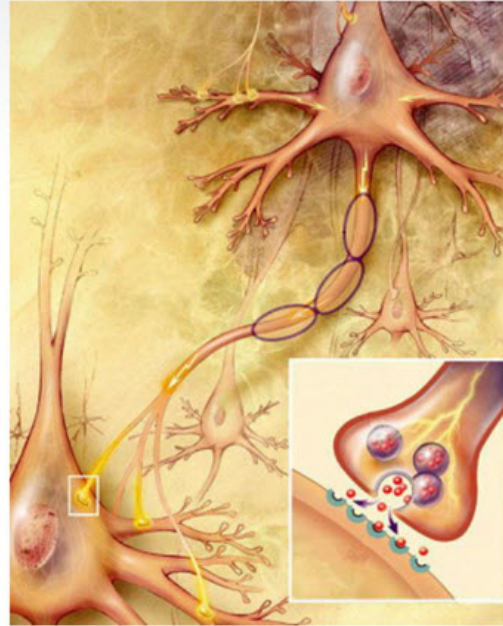
Topic 1 Content: Parts of a Neuron

Introduction

Parts of a Neuron

Introduction

The study of the nervous system begins with its smallest unit, the neuron. Billions of these cells make up the entire nervous system, and although they come in many varieties, neurons function similarly. In this interactivity, click the next and previous buttons on the bottom of the player to learn more about the different features of the neuron.



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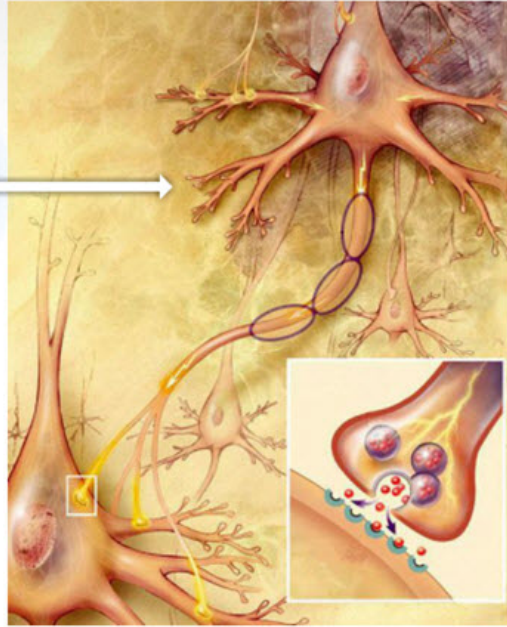
Topic 1 Content: Parts of a Neuron

Dendrite

Parts of a Neuron

Dendrite

Dendrite refers to branch-like fibers that extend from the cell body. Their job is to receive the messages from surrounding neurons and conduct the impulse to the cell body.



The diagram illustrates a multipolar neuron. The cell body (soma) is centrally located and contains a nucleus. Extending from the cell body are several dendrites, which are branch-like structures. One dendrite is highlighted in yellow. An arrow points from the text description to this yellow dendrite. The axon extends from the cell body and is covered by a myelin sheath. An inset in the bottom right corner shows a close-up of a synapse, where a dendrite from one neuron is in contact with the cell body of another neuron, with neurotransmitters being released into the synaptic cleft.

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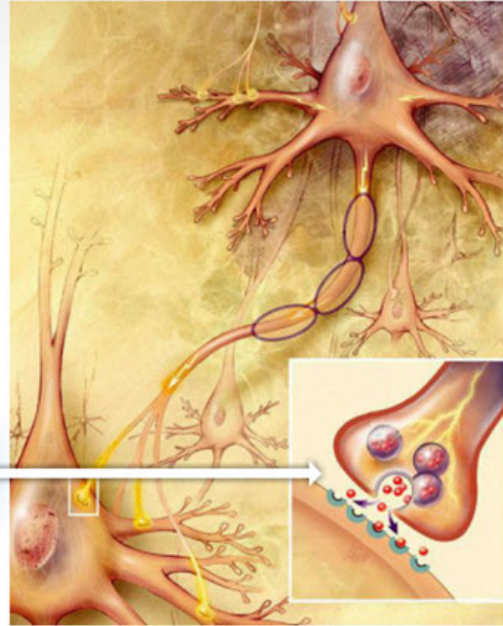
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Synapse

Parts of a Neuron

Synapse

Synapse refers to the gap or junction between the end of one neuron and the dendrite of a neighboring neuron.



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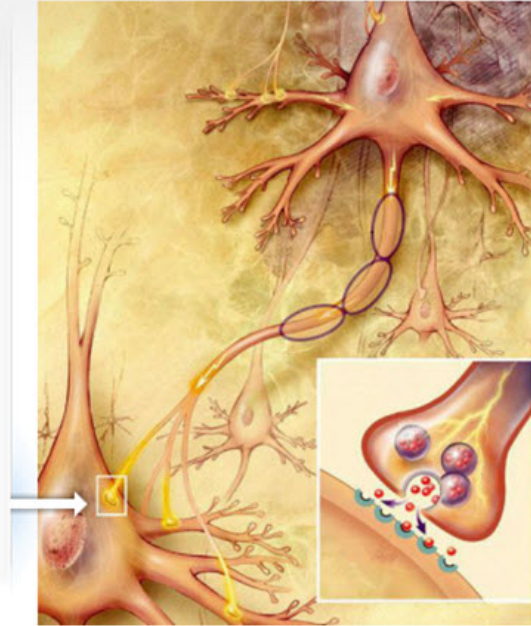
Topic 1 Content: Parts of a Neuron

Axon Terminals

Parts of a Neuron

Axon Terminals

Axon terminals are small fibers that form the end of the neuron and contain chemical messengers. Depending on the message, certain messengers get released in a gap at the end of the neuron.



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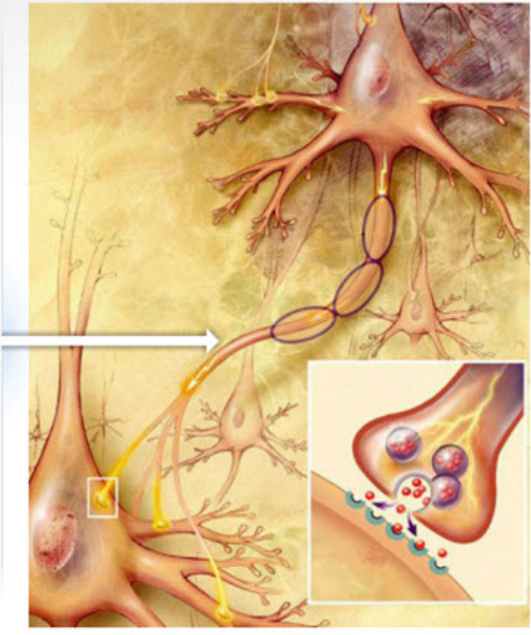
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Axon

Parts of a Neuron

Axon

An axon is the thin extension that transmits an electrical signal or impulse down the length of the neuron.



The diagram illustrates a neuron with its cell body (soma) and branching dendrites. A long, thin axon extends from the cell body, covered by a myelin sheath. The axon terminates at a synapse, where it meets another neuron. An inset shows a close-up of the synapse, highlighting the release of neurotransmitters from the presynaptic terminal into the synaptic cleft, where they bind to receptors on the postsynaptic terminal. A yellow arrow indicates the direction of an electrical signal traveling down the axon.

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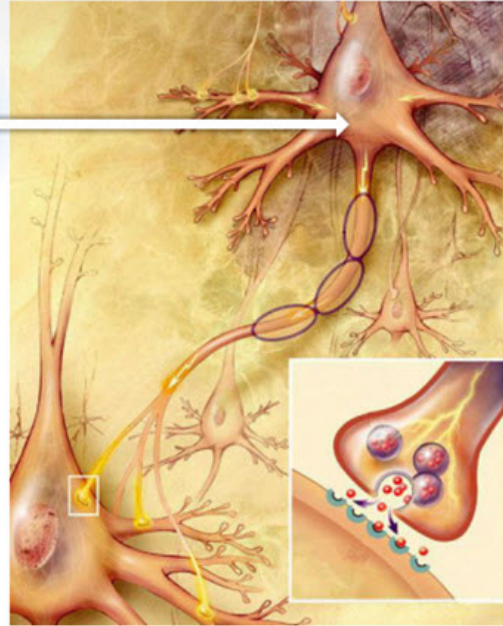
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Cell Body

Parts of a Neuron

Cell Body

This is the body of the cell. Like other cells, neurons have a cell body with a nucleus that produces energy for the cell's activity.



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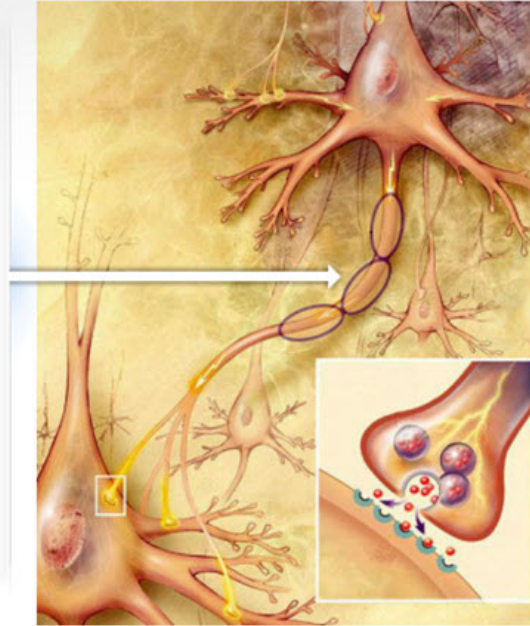
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Myelin Sheath

Parts of a Neuron

Myelin Sheath

The myelin sheath is the fatty substance that coats and protects the axon. It helps the electrical signal move quickly.



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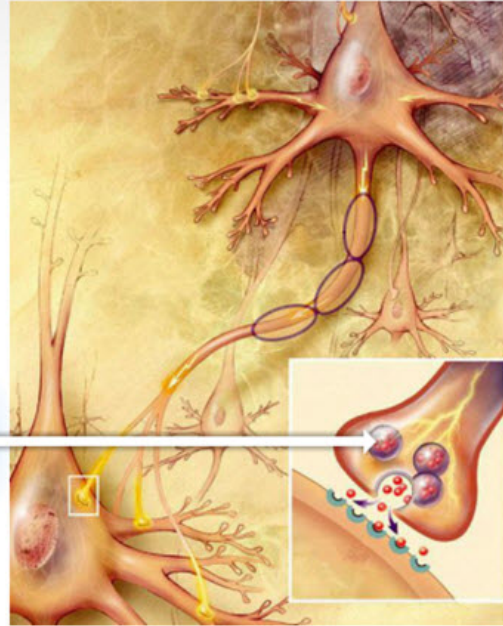
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Neurotransmitters

Parts of a Neuron

Neurotransmitters

Neurotransmitters are chemical messengers held in the axon terminals. The message being sent determines which neurotransmitter will be released into the synapse.



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