

A modern kitchen with white cabinetry, a wooden countertop, and a bar stool. The background is slightly blurred and has a dark overlay.

Neuron Structural Functional Unit Neural System

Research Report

August 05, 2025

☒ Neuron – The Basic Unit of Nervous System

- A **neuron** is the **structural and functional unit** of the neural system.
- It is a **microscopic**, highly specialized cell designed to **receive, conduct, and transmit** electrical impulses.
- Each neuron has **three main parts**:
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☒ 1. Cell Body (Soma or Cyton):

- Central part of the neuron.
- Contains:
- **Cytoplasm**
- **Cell organelles** like nucleus, mitochondria, etc.
- Special **granular structures** called **Nissl's granules**:
- Made of rough endoplasmic reticulum and ribosomes.
- Important for **protein synthesis** in neurons.
- This is the **metabolic centre** of the neuron.
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☒ 2. Dendrites:

- **Short, branched projections** coming out from the cell body.
- **Contain Nissl's granules.**
- **Function:** Receive nerve impulses (stimuli) from other neurons or sensory receptors and **carry them towards the cell body.**
- Think of them as **antennae** that pick up signals.

| **Axon** | Long fibre, ends in synaptic knobs | Carries impulses **away** from cell body |

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☒ **Key Terms:**

- **Nissl's granules:** Unique to neurons, involved in protein synthesis.
- **Synaptic knob:** End of axon branch, releases neurotransmitters.
- **Neurotransmitters:** Chemicals that pass the signal to the next neuron/muscle.

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Let me know if you want a labeled diagram or a flowchart for quick revision!