

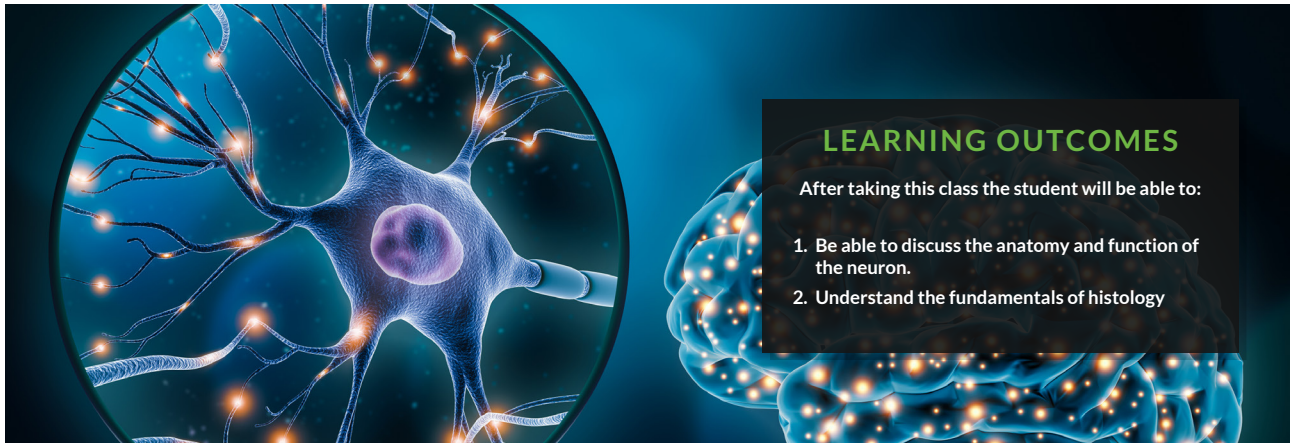


# Neurobiology of the Neuron

This class covers the basics of one of the two main cell types found in the nervous system, namely the neuron. There are many different types of neurons and many ways to classify them. This class will cover some of the ways neuroscientists classify neurons.

You will also learn about the basic features of neurons and you will learn a bit about what is found inside neurons. This class also covers the fundamentals of histology, which is a way of viewing neurons and their cellular components.

## NEUROSCIENCE LEVEL 1 - CLASS 1



### LEARNING OUTCOMES

After taking this class the student will be able to:

1. Be able to discuss the anatomy and function of the neuron.
2. Understand the fundamentals of histology

## LESSON CONTENT

Every lesson has a practice quiz. At the end of the lessons there is a final quiz and if you pass the final quiz, you will receive a certificate of completion.

### 1. Introduction to the Neuron

- In this lesson, we look at the neuron and the various parts of the nervous system where they can be found.
- You will learn about the physical structure of a neuron, and its typical components such as its cell body, dendrites, axon, and terminal button.
- You will also learn about dendritic spines and why they are important.

### 2. The parts of a Neuron

- In this lesson, we will take a closer look at the parts of the neuron.
- This lesson focuses on the axon.
- You will learn about the two methods of communication a neuron can do, electrical and chemical, and where they each occur.

### 3. Inside the Neuron

- In this lesson, we dive inside the neuron and look at what you can find inside a neuron.
- You will also learn about the fundamental properties of neurons.
- You will also learn about the various types of neurons and the different ways neurons can be classified.

### 4. Variations of Neuron Structures

- In this lesson, we will look at the different structural variations neurons can have.
- We look at how you can classify neurons based on their structure.
- You will also learn about how neurons can be classified according to their size or the chemicals (neurotransmitters) they produce.

### 5. Well known Neuron Types

- In this lesson, you will learn about four well-known types of neurons.
- You will learn about the Pyramidal cell, the Stellate Cell, the Purkinje cell, and the Cajal-Retzius cell.
- Each of these well-known neurons is specialised for a particular function and are found in very specific parts of the nervous system.

### 6. Cellular Histology

- In this lesson, you will learn the basics of cellular histology - a way to explore cells such as neurons.
- You will learn about the five main steps involved, including fixation, processing, embedding, sectioning, and staining.
- You will also get to see some examples of well-known stains to identify various parts of neurons.

### SUBJECT TAGS

neuron, neuron structure, dendrite, axon, myelin, dendritic spines, synapse, neurites, axonal transport, excitability, secretion, conductivity, motor neurons, sensory neurons, interneurons, multipolar, bipolar, unipolar, anaxonic, cholinergic, serotonergic, glutaminergic, pyramidal cells, stellate cells, purkinji cells, Cajal-Retzius cells, Histology, microscope, fixation, processing, embedding

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