Anatomy and Physiology I
Learning Guide: Neurology

Overview – This module focuses on neurology or nervous tissue. As nervous tissue is crucial to maintaining many aspects of homeostasis and the coordination of the entire body, its importance is self-evident. Here, we will look at the anatomy and physiology of nervous tissue.

Learning Objectives

- Classify the cellular and tissue components of the nervous system both structurally and functionally.
- Compare and contrast the anatomical and physiological characteristics of the neuroglia and the neuron.
- Describe how a resting membrane potential is maintained and its role in setting the stage for impulse conduction.
- Describe how an action potential is initiated and maintained and how it affects a postsynaptic effector cell.
- Explain why saltatory conduction is faster in myelinated neurons than in unmyelinated neurons.
- Describe how excitatory and inhibitory postsynaptic neurons are used in neuronal circuitry.

Getting Started – Neurology is a large unit. Start by studying and learning the nervous system's introductory information and the nervous system cell structures and functions. As we transition to physiology, pay close attention to the topic of the resting membrane potential, as this will be the foundation for understanding nerve impulse conduction. When impulse conduction is discussed, note how the axon's various parts respond during the conduction process.

Once you have concluded and understood the physiology of impulse conduction, you will apply this process to how neuronal circuits are organized and how inhibitory and excitatory interneurons work together to integrate neuronal information.

Exam – The exam is fairly typical, employing a variety of question types. There is the possibility of an illustration or two. A ***guided essay*** on resting membrane potential and impulse propagation will assess your understanding of the physiology.

Please also recall that grades associated with the last unit are not droppable. These grades count, so please approach this content with this in mind.

Final Point – As this is a relatively large unit, so starting promptly is essential. The physiology is interesting and provides important underpinnings for future topics in physiology.