

Learning Goals and Outcomes for REACH-DL Physiology Exercises

Human Nerve Chapter

General Goals and Outcomes per HAPS (<http://www.hapsweb.org>)

1. Describe the nervous system as a control system identifying nervous system elements that are sensory receptors, the afferent pathway, control centers, the efferent pathway, and effector organs.
2. Define threshold.
3. Interpret a graph showing the voltage vs. time relationship of an action potential, and relate the terms depolarize, repolarize, and hyperpolarize to the events of an action potential
4. Define absolute and relative refractory periods.
5. Explain the physiological basis of the absolute and relative refractory periods.
6. Discuss the consequence of a neuron having an absolute refractory period.
7. Define the term reflex.
8. Describe reflex responses in terms of the major structural and functional components of a reflex arc.
9. Explain the terms spinal reflex and intersegmental spinal reflex.
10. Describe a stretch reflex, a flexor (withdrawal) reflex, and a crossed-extensor reflex, and name all components of each reflex arc.
11. Demonstrate a stretch reflex (e.g., patellar or plantar)
12. Propose how specific reflexes would be used in clinical assessment of nervous system function.

Eyes vs Ears

Learning Goals:

1. Students will gain an understanding of a reflex arc and how the spinal cord and peripheral nerves function in the human body
2. Students will be able to successfully record responses to auditory and visual stimuli.
3. Students should be able to measure the response time to different cues and relate it to the functioning of the spinal nerves.
4. Students will continue to be successful at using the LabScribe software to move cursors, analyze data, record data to the Journal, and add functions to the Analysis window.

Outcomes: Students who have successfully completed this exercise will:

1. understand and be able to draw a reflex arc.
2. have recorded responses to both auditory and visual stimuli.
3. determine a response time to various cues.

4. feel comfortable transferring data to the Journal and interpreting that data to answer questions about their recordings.
5. have used the functions available in the Analysis window to determine values necessary for this exercise.