

# Aandp exercises



**ASSIGN  
BUSTER**

REVIEW SHEET EXERCISE 3 Neurophysiology of Nerve Impulses NAME: LAB  
TIME/DATE: Eliciting (Generating) a Nerve Impulse

1. Why don't the terms depolarization and action potential mean the same thing? Action potential is a quick depolarization followed by a repolarization. Depolarization is a one way trip. It also takes a substantial depolarization to cause an action potential.
2. What was the threshold voltage in Activity 1? 3. 0 V
3. What was the effect of increasing the voltage? How does this change correlate to changes in the nerve? there was a slight increase
4. How did the action potential generated with the unheated rod compare to that generated with the heated rod?
5. Describe the types of stimuli that generated an action potential.
6. If you were to spend a lot of time studying nerve physiology in the laboratory, what type of stimulus would you use and why?
7. Why does the addition of sodium chloride elicit an action potential? Hint: Think about the sodium permeability of the neuron (Figure 3. 2e).

Inhibiting a Nerve Impulse

8. What was the effect of ether on eliciting an action potential?
9. Does the addition of ether to the nerve cause any permanent alteration in neural response?
10. What was the effect of curare on eliciting an action potential?
11. Explain the reason for your answer to question 10 above.
12. What was the effect of lidocaine on eliciting an action potential?

Nerve Conduction Velocity

13. What is the relationship between size of the nerve and conduction velocity?
14. Keeping your answer to question 13 in mind, how might you draw an analogy between the nerves in the human body and electrical wires?
15. How does myelination affect nerve conduction velocity? Explain, using your data from Chart 1.
16. If any of the nerves used were reversed in their placement on the stimulating and recording electrodes, would any differences be seen in conduction velocity? Explain.