Cornell Guided Notes

Human Anatomy & Physiology (Human Body Systems) | 2027-03-12

Name	Period	Date	Lesson
		2027-03-12	

Lesson focus

Reflex arc and myelin

Key words and questions	Prepared details and student notes

Essential question
What is today's target?

Trace a reflex arc and explain how myelin speeds signal conduction. Big idea: A reflex arc bypasses the brain by processing the response at the spinal cord level; myelin dramatically increases conduction velocity by allowing saltatory conduction.

My notes, examples, and questions

Key words
What vocabulary unlocks the lesson?

- reflex
- reaction time
- stimulus
- response
- myelin
- receptor
- effector

My notes, examples, and questions

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Cornell Notes - Continued

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Must-know ideas **What should I understand by the end?**	- Reflex arc sequence: stimulus, receptor, sensory (afferent) neuron, interneuron (spinal cord), motor (efferent) neuron, effector (muscle or gland). - Saltatory conduction: the action potential jumps between nodes of Ranvier on a myelinated axon, traveling up to 70 m/s compared to 0.5 m/s in unmyelinated fibers. - Demyelinating diseases (such as multiple sclerosis) slow conduction velocity and disrupt reflexes, connecting myelination directly to pathophysiology. **My notes, examples, and questions**
Process notes **What happens during class?**	- 0-8: Intro: why reflexes are faster than voluntary movement - 8-25: Notes: five reflex-arc components and saltatory conduction - 25-45: PLTW online task: reflexes and conduction speed - 45-62: Label reflex-arc diagram: all five components with signal-direction arrows; mark spinal-cord shortcut - 62-75: Write two-sentence myelin explanation: saltatory conduction and speed comparison - 75-80: Submit diagram and explanation; preview Wednesday reaction-time lab **My notes, examples, and questions**

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Steps and evidence **What do I do and turn in?**	- Read the notes on the reflex-arc parts: receptor, sensory neuron, interneuron, motor neuron, effector. - Label a reflex-arc diagram and mark the spinal-cord shortcut. - Complete the PLTW online task on reflexes and conduction speed. - Explain in two sentences how myelin makes signals travel faster. - Submit your labeled reflex-arc diagram and myelin explanation. Evidence: Notebook check - Labeled reflex-arc diagram (all five components, signal-direction arrows, spinal-cord shortcut marked) plus a two-sentence saltatory-conduction explanation. **My notes, examples, and questions**
Checks for understanding **How do I know I got it?**	- You can trace the parts of a reflex arc in order. - You can explain how myelin affects conduction speed. **My notes, examples, and questions**

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Lab or safety notes
What must I handle carefully?

Supplies:
- Reaction-time ruler or reaction timer app
- Reflex hammer
- Stopwatch or timing device
- Data table sheet
- Lab notebook
- Patient case clue cards

My notes, examples, and questions

Summary

Today's lesson focused on Reflex arc and myelin. The main target was: Trace a reflex arc and explain how myelin speeds signal conduction. The evidence of learning is Notebook check: Labeled reflex-arc diagram (all five components, signal-direction arrows, spinal-cord shortcut marked) plus a two-sentence saltatory-conduction explanation.. In my own words, the most important idea from today is:

My summary

My final question or connection