Explain this reflex?
Which structure (bundle of nerves) links the 2 hemispheres of the brain?

- The corpus callosum
Name the 3 major parts of the neuron

- Dendrites, cell body, axon
Explain what is meant by threshold

- The minimum depolarization of the membrane potential of a neuron in order for the voltage gated Na channels to open so that an AP may be generated.
Name two factors that could increase the speed of an action potential traveling down an axon.

- The width of the axon and it being myelinated.
Image a neuron is myelinated by a Schwan cell... Which division of the NS is this cell located?

- PNS
Name two factors that could increase the speed of an action potential traveling down an axon.

- The width of the axon and it being myelinated
What is the junction where a neuron communicates with its target cell?

- **Synapse**
At the synapse, there is a presynaptic cell and a postsynaptic cell. Which cell is sending the signal and which is receiving the signal?

- Presynaptic-sending
- Postsynaptic-receiving
What are the chemical signals used by the nervous system

- Neurotransmitters
Explain what occurs at the synapse to allow the release, reception, and clean up of neurotransmitters.

- AP reaches synaptic terminal of presynaptic cell. Calcium enters cell leads to exocytosis of NT containing vesicles. NTs released into synapse, diffuse across synaptic cleft and bind to receptors of postsynaptic cell.
- NTs are recycled by reuptake by presynaptic cell, broken down by enzymes, or diffuse away.
Review

- Made up of the medulla oblongata, pons, and midbrain. Controls homeostatic functions such as breathing rate, conducts sensory and motor signals between the spinal cord and higher brain centers, and regulates sleep and arousal.

**Brain stem**

- Helps to coordinate motor/balance, perceptual, and cognitive functions

**Cerebellum**

- Main center through which sensory and motor information passes to and from the cerebrum

**Thalamus**
Review

- Regulates homeostasis; basic survival behaviors such as the “4 F’s” feeding, fighting, fleeing, and reproducing; also works as a thermostat, appestat, thirst center, and circadian rhythms.

  **hypothalamus**

- Has two hemispheres, each with a covering of gray matter over white matter. Information processing is centered here. This region is greatly expanded in mammals.

  **Cerebrum**

- Controls voluntary movement and cognitive function.

  **Cerebral Cortex**

- A thick band of axons that enables communication between the right and left hemisphere.

  **Corpus Callosum**
What is the role of the suprachiasmatic nucleus?

- The **SCN** acts as a **pacemaker**, synchronizing the biological clock. It resets our circadian rhythm to correspond with the light dark cycle.
- It receives information about light from the optic nerve coming from the retina of the eye.
Which structure of the NS has direct connections with the endocrine system?

- Hypothalamus
Which part of the pituitary does the hypothalamus make hormones for and have neurons that project directly into?

- Posterior Pituitary
How does the hypothalamus elicit control over the anterior pituitary?

- Uses releasing hormones through a portal vessel system
What are tropic hormones

- Hormones that target other endocrine tissues
Explain the antagonistic control of blood sugar
Illustrate an example of positive feedback.
Explain the difference of lipid soluble hormones vs. water soluble hormones in reception

- Intracellular receptors vs membrane bound receptors
Explain the difference of lipid soluble hormones vs. water soluble hormones in their travel through the blood

- Protein carriers vs float free
Explain the difference of lipid soluble hormones vs. water soluble hormones in their effects on the target cells

- Regulates transcription vs. modifies proteins and regulates transcription