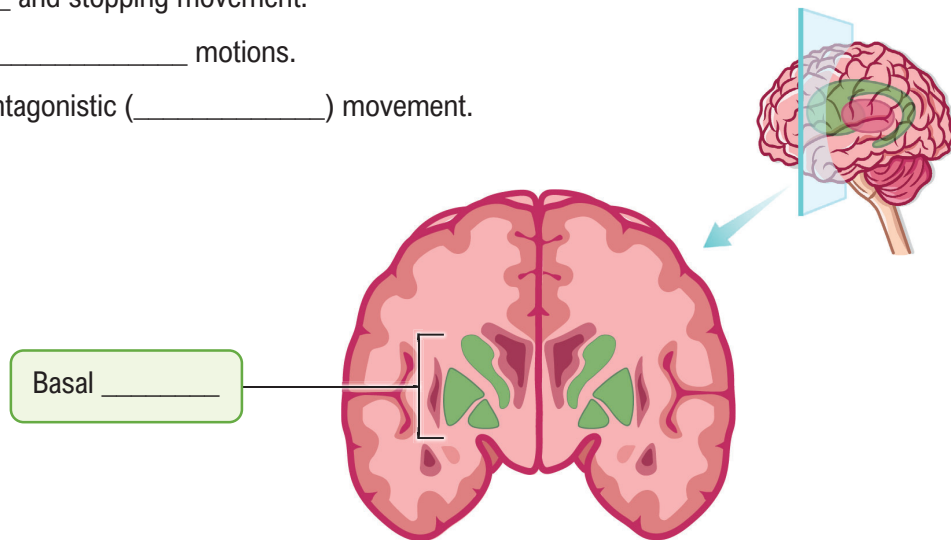


## TOPIC: THE SUBCORTICAL FOREBRAIN

### The Basal Ganglia (Basal Nuclei)

- ◆ **Basal Ganglia:** A group of subcortical structures that play a role in reward processing and **movement**.
- ◆ Help send messages from the \_\_\_\_\_ regions of the cortex down to the \_\_\_\_\_ cord.
- ◆ The basal ganglia play a role in:
  1. \_\_\_\_\_ and stopping movement.
  2. Controlling \_\_\_\_\_ motions.
  3. Inhibiting antagonistic (\_\_\_\_\_) movement.



Basal \_\_\_\_\_

### EXAMPLE

Parkinson's disease (PD) is a neurodegenerative disorder which involves impairment of the function of the basal ganglia. Based on this description, what kinds of symptoms would you expect to see in PD?

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### PRACTICE

The basal ganglia functions as a bridge between what two parts of the nervous system?

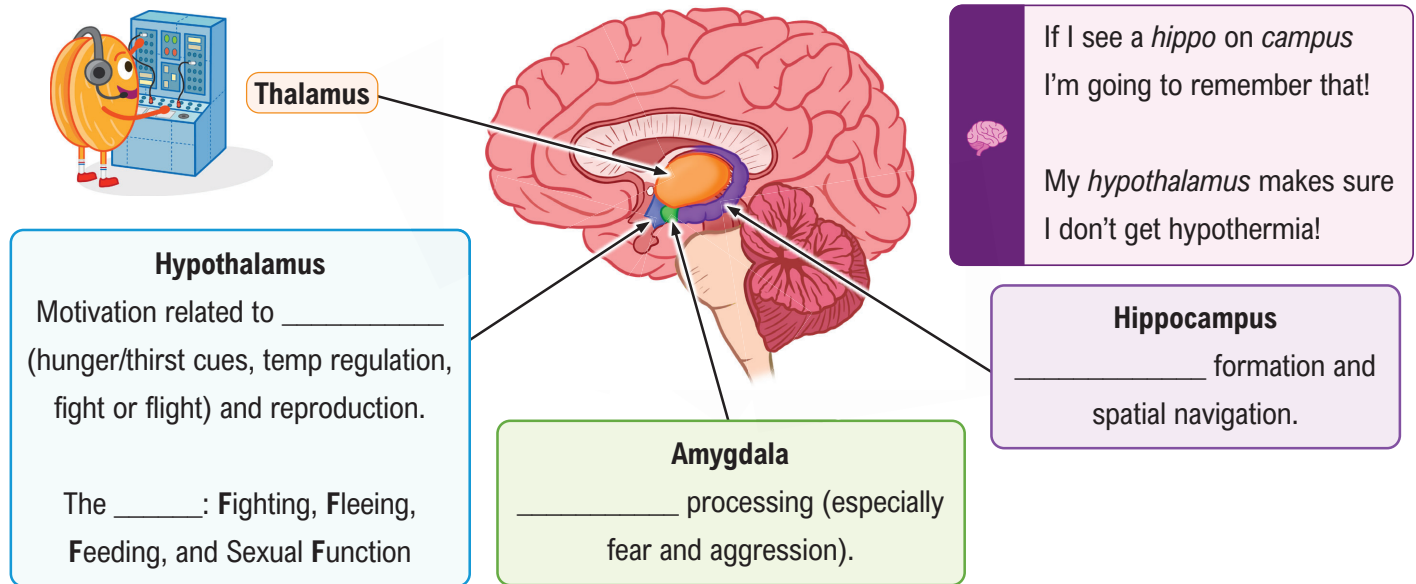
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- a) Right and left hemispheres.
- b) Frontal and temporal lobes.
- c) Parietal and occipital lobes.
- d) Motor regions and spinal cord.

## TOPIC: THE SUBCORTICAL FOREBRAIN

### Thalamus and The Limbic System

- ◆ **Thalamus:** A subcortical “\_\_\_\_\_ station” for most sensory signals.
  - Processes information from sensory organs, relays signals to appropriate area of cerebral cortex.
  - Also plays a role in consciousness and \_\_\_\_\_.
- ◆ \_\_\_\_\_ **System:** Multiple interconnected structures involved in emotion, memory, and motivation.



### EXAMPLE

Given below are three descriptions of different structures of the limbic system. Write the name of the structure on the line next to the description of it.

- a) This structure is important for processing emotions, especially fear: \_\_\_\_\_.
- b) This structure regulates functions such as temperature, hunger, and hormone levels: \_\_\_\_\_.
- c) This structure aids in spatial navigation and memory: \_\_\_\_\_.

## **TOPIC: THE SUBCORTICAL FOREBRAIN**

### **PRACTICE**

A lab mouse had their amygdala deactivated and then was shown a cat through a plexiglass screen. Compare how a normal mouse might react to a cat, compared to a mouse with a deactivated amygdala.

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- a) Normal mouse: fear / Lab mouse: fear.
- b) Normal mouse: fear / Lab mouse: uninterested.
- c) Normal mouse: uninterested / Lab mouse: fear.
- d) Normal mouse: uninterested / Lab mouse: uninterested.

### **PRACTICE**

Which of the following are true regarding the thalamus?

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- I. Located deep in the cortex.
- II. It processes all sensory signals.
- III. Important for sleep and consciousness.

- a) I & II only.
- b) I & III only.
- c) II & III only.
- d) I, II, & III.