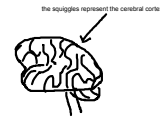


## Cerebral Cortex



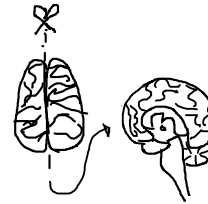
### DEFINITION

the outermost layer of the forebrain responsible for thinking and processing sensory (from your 5 senses) information that looks like little hills and valleys

### EXAMPLE

The cerebral cortex looks bumpy, as if there are hills and valleys on the surface of the forebrain!

## Cross-Section



### DEFINITION

a format of a diagram/picture used to look at a brain by slicing it (in our case usually in half) so that you can see the structures inside the brain

### EXAMPLE

It's just a way to see the inside of the brain!

## Cerebellum



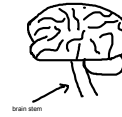
### DEFINITION

an important part of the brain responsible for balance, movement, and the transfer of information between the brain stem and forebrain (where it structurally is)

### EXAMPLE

It sits at the back of the brain. The right cerebellum gets messages from the left side of the fore brain and sends it to the right side of the body, and vice versa.

## Brain Stem



### DEFINITION

an important part of the brain responsible for involuntary functions and the transfer of information from the rest of the brain to the spinal cord

### EXAMPLE

The brain stem is broken up into three parts, and it connects with the spinal cord at a hole in the skull called the foramen magnum.

## Midbrain



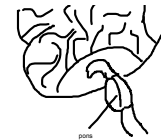
### DEFINITION

the top part (closest to the forebrain and cerebellum) of the brain stem that is involved in visual and auditory reactions along with transferring messages between the rest of the brain and the brain stem

### EXAMPLE

The midbrain is called the midbrain not because of its position on the brain stem but because of its position in the brain as a whole.

## Pons



### DEFINITION

the middle part of the brain stem that is involved in controlling breathing, sensory and motor functions, and transferring messages between the midbrain and the medulla oblongata

### EXAMPLE

I remember the pons by thinking of a bridge built across a pond since it is in between the two other parts of the brain stem.

# Medulla Oblongata



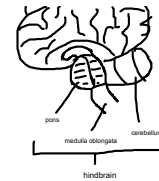
## DEFINITION

the bottom part (farthest from the forebrain and cerebellum) the brain stem that is involved in controlling all other involuntary functions and transferring messages between the brain and spinal cord

## EXAMPLE

This is a hard one to pronounce! meh-doo-lah ob-long-gah-tah

# Hindbrain



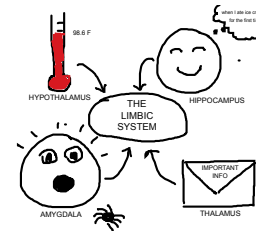
## DEFINITION

section of the brain that includes the cerebellum, pons, and medulla oblongata

## EXAMPLE

The brain can be split up into the forebrain, midbrain, and hindbrain.

# Limbic System



## DEFINITION

a group of structures in the brain (amygdala, hippocampus, thalamus, and hypothalamus) that control emotions and memory

## EXAMPLE

These four structures can be seen in a cross-section of the brain.

# Amygdala



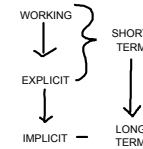
## DEFINITION

a part of the limbic system that controls emotions, most strongly fear

## EXAMPLE

A study showed that rats whose amygdala were removed were more likely to perform dangerous tasks than the rats who still had their amygdala!

# Hippocampus



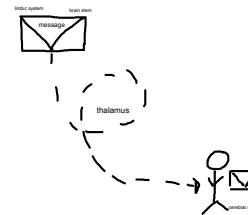
## DEFINITION

a part of the limbic system that controls memory conversion (short term to long term) and how emotions are tied to memories

## EXAMPLE

When you fall off your bike and cry, your hippocampus will store that reaction, and so you will most likely cry the next time you fall off of a relatively high object.

# Thalamus



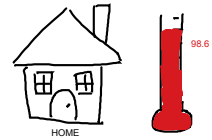
## DEFINITION

a part of the limbic system that is responsible for sending the information from the system to the cerebral cortex to be analyzed

## EXAMPLE

The thalamus is the delivery person of important information for the cerebral cortex.

# Hypothalamus



## DEFINITION

a part of the limbic system that controls homeostasis (keeping your body at certain, healthy conditions)

## EXAMPLE

I remember the hypothalamus's function of homeostasis as staying at conditions we feel "at home" at. For example the average temperature for a human should be around 98.6 degrees Fahrenheit.

# Basal Ganglia



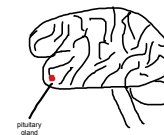
## DEFINITION

clusters of neuron nuclei spread out in the CNS that each have specific functions such as movement, muscle memory, cognition, etc.

## EXAMPLE

Basal ganglia can ONLY be found in the central nervous system (CNS)

# Pituitary Gland



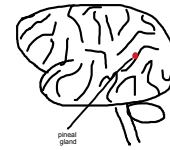
## DEFINITION

one of the two glands in the human brain that is responsible for hormone release and control

## EXAMPLE

The pituitary gland is sometimes considered the "master gland" because it controls all of the other hormone excreting glands in the body.

## Pineal Gland



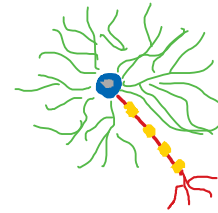
### DEFINITION

one of the two glands in the human brain that is responsible for growth and maturity; a notable substance that this gland is responsible for is melatonin, which helps your sleep patterns

### EXAMPLE

Thank your pineal gland whenever you have a good night's sleep!

## Neurons



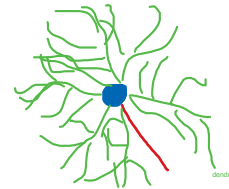
### DEFINITION

the unique and specialized cells of the nervous system

### EXAMPLE

No neuron is the same, and that makes them even more beautiful!

## Dendrites



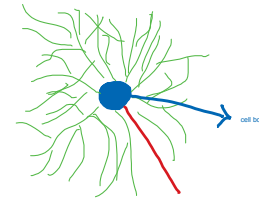
### DEFINITION

one of the three major parts of the neuron that is responsible for gathering information and sending it to the cell body; each neuron has an "arbor"/"tree" of dendrites

### EXAMPLE

Dendrites are often compared to the branches of a tree because they branch off and grow to increase the reach of the neuron.

## Cell Body/Soma



### DEFINITION

one of the three major parts of the neuron that is responsible for analyzing the information gathered by the dendrites and creating a message to be sent out by the axon; the nucleus of a neuron is a part of the cell body

### EXAMPLE

The cell body is like the “brain” of the neuron; it does all the thinking and work for the cell.

## Nucleus



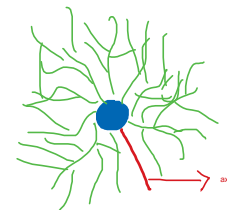
### DEFINITION

a part of the cell body that every cell has; it includes vital organelles that allow the neuron to function

### EXAMPLE

Fun fact: the plural of nucleus is nuclei!

## Axon



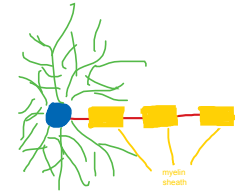
### DEFINITION

one of the three major parts of the neuron that is responsible for sending out the messages created by the cell body to other neurons and/or parts of the body

### EXAMPLE

The axon is like the messenger of the neuron.

## Myelin Sheath



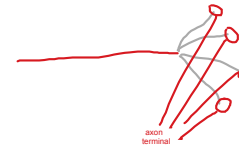
### DEFINITION

a layer of myelin (a fatty substance) that wraps around the axon in order to help messages travel faster; works similarly to the coating around wires

### EXAMPLE

Myelin sheath cells are why you are able to react to everything you experience almost immediately. When they are damaged, messages are sent more slowly, which can be problematic.

## Axon Terminal



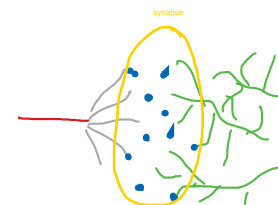
### DEFINITION

the end of the axon at which the action potential leaves the neuron

### EXAMPLE

The axon terminal is where neurotransmitter is released into the synaptic terminal.

## Synapse/Synaptic Terminal



### DEFINITION

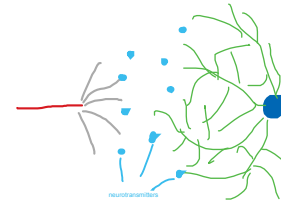
the space between the axon terminal of one neuron and a dendrite of another neuron which the neurotransmitters must cross

### EXAMPLE

When I think of a synapse, I think of the space between two people who are playing catch. That area, where the ball might go, is a bit like the synapse with the axon terminal of one neuron and the dendrite of another are the people and the ball is a neurotransmitter.



# Neurotransmitters



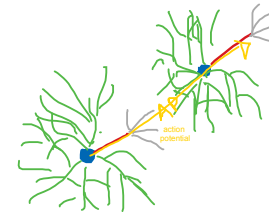
## DEFINITION

chemical substances that are transferred between neurons in order to create a signal that contributes to the messages sent between neurons

## EXAMPLE

The release of neurotransmitters is like a team of people playing dodgeball. Some may never reach the target (the dendrite of the other neuron) and some may hit the target and continue the signal.

# Action Potential



## DEFINITION

an explosion of an electrical current that runs through neurons, causing neurotransmitters to be transferred between neurons; a series of action potentials creates a message

## EXAMPLE

Action potential is the signal that is passed through neurons, similar to the phrase whispered in a game telephone,