



BIOLOGICAL STRUCTURE OF THE HUMAN BRAIN

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THE PURPOSE

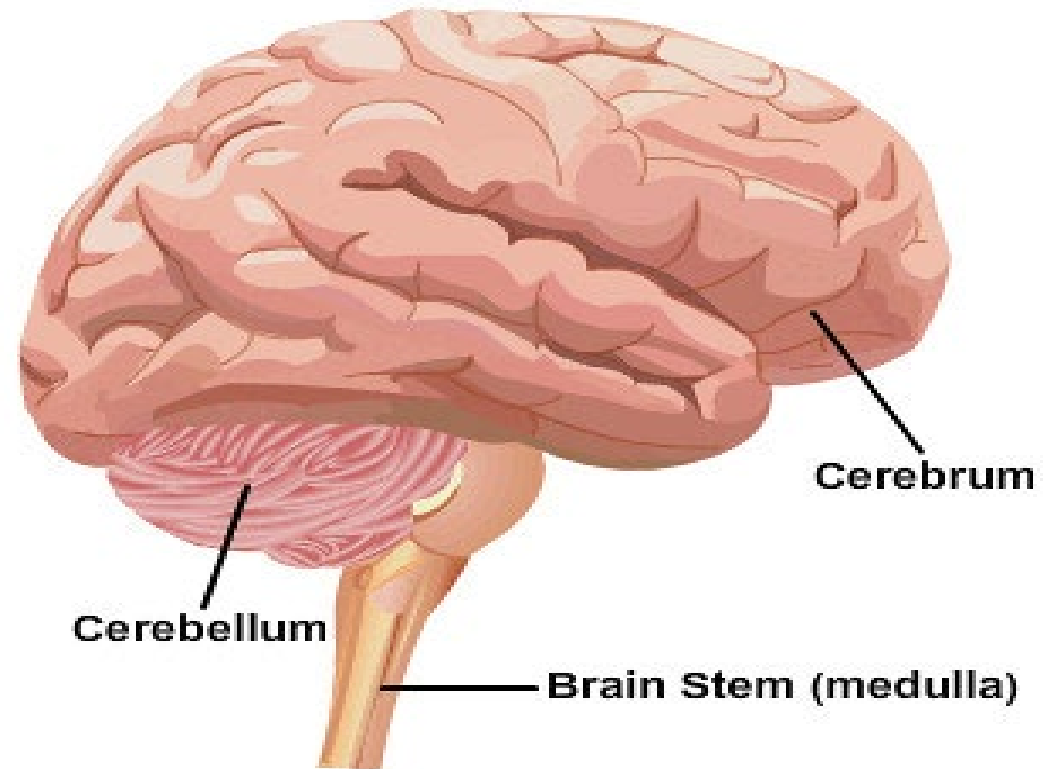
- The brain controls all functions of the body, interprets information from the outside world
- Embodies the essence of mind and soul
 - Intelligence
 - Creativity
 - Emotion
 - Memory
- Protected by the skull
- Receives information from our five senses
 - Sight, smell, touch, taste, hearing



MAIN PARTS

- Cerebrum
- Cerebellum
- Brainstem

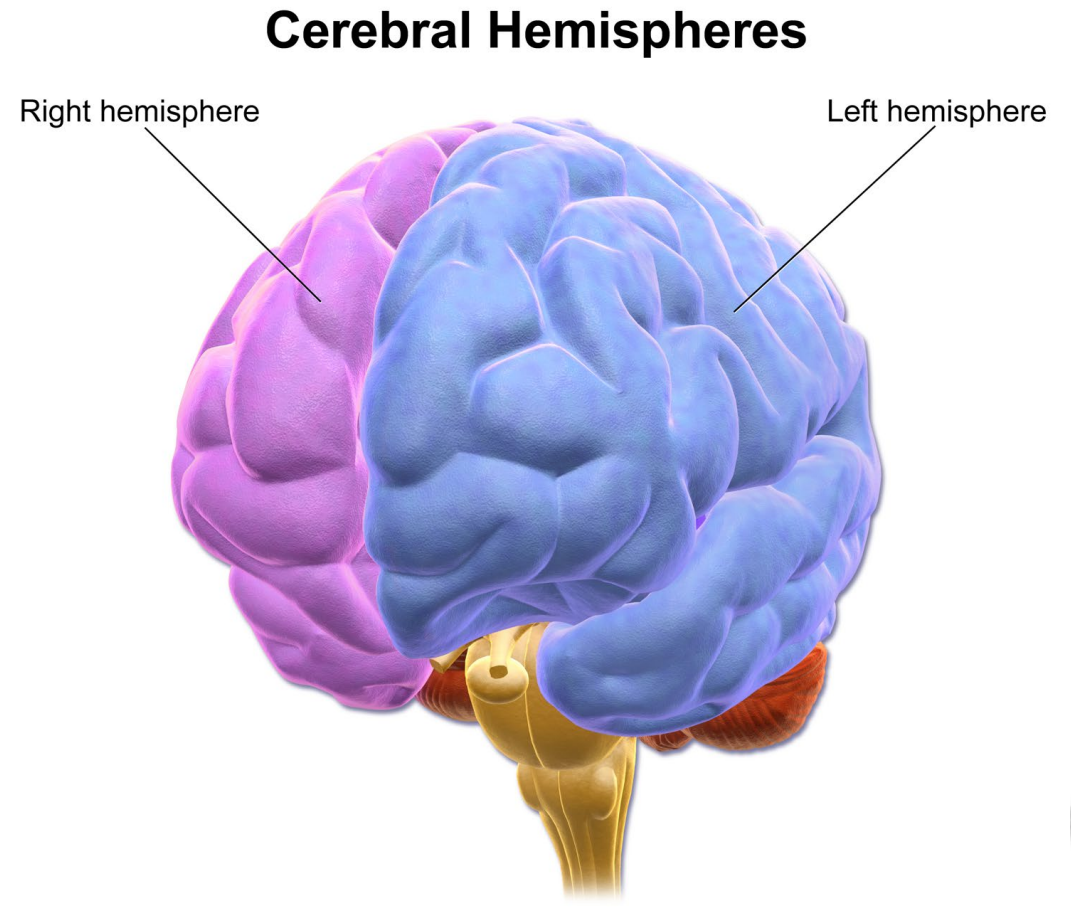
Parts of the Brain



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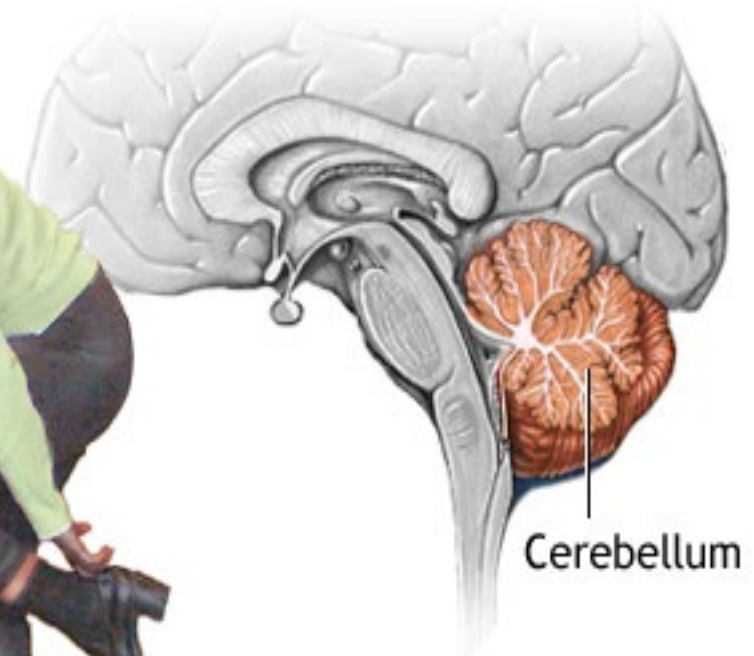
CEREBRUM

- Largest part of the brain
- Composed of right and left hemispheres
- Higher functions such as:
 - Interpreting touch, vision, hearing, speech, reasoning, emotions, learning, fine control of movement
- Located at the top of the brain



CEREBELLUM

- Located under the cerebrum
- Coordinates muscle movements
- Maintains posture
- Balance



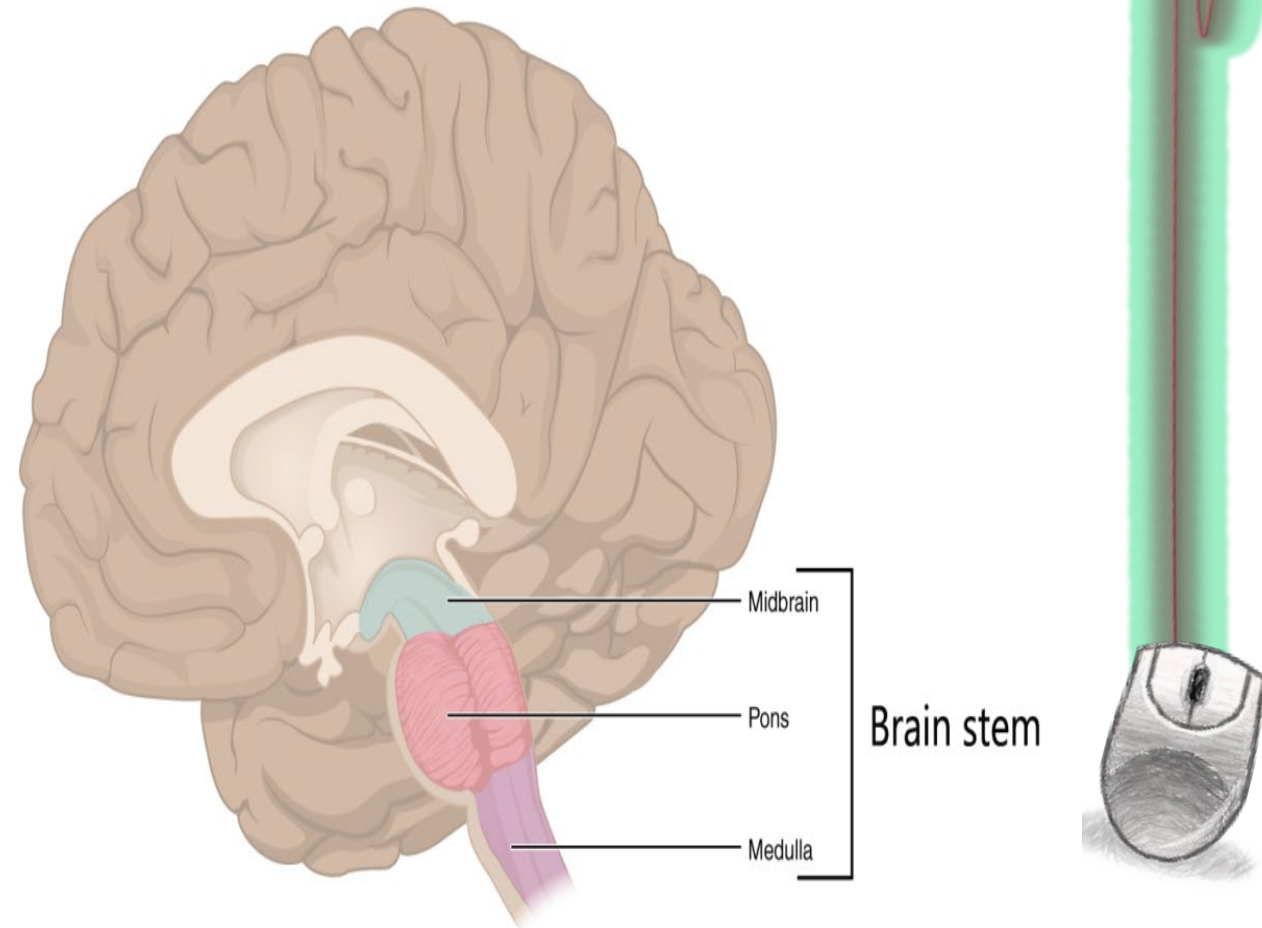
Cerebellum helps provide smooth, coordinated body movement

 ADAM.



BRAINSTEM

- Relay centre connecting the cerebrum and cerebellum to the spinal cord
- Performs automatic functions, such as:
 - Breathing
 - Heart Rate
 - Body Temperature
 - Wake and Sleep Cycles
 - Digestion
 - Sneezing
 - Coughing
 - Vomiting
 - Swallowing

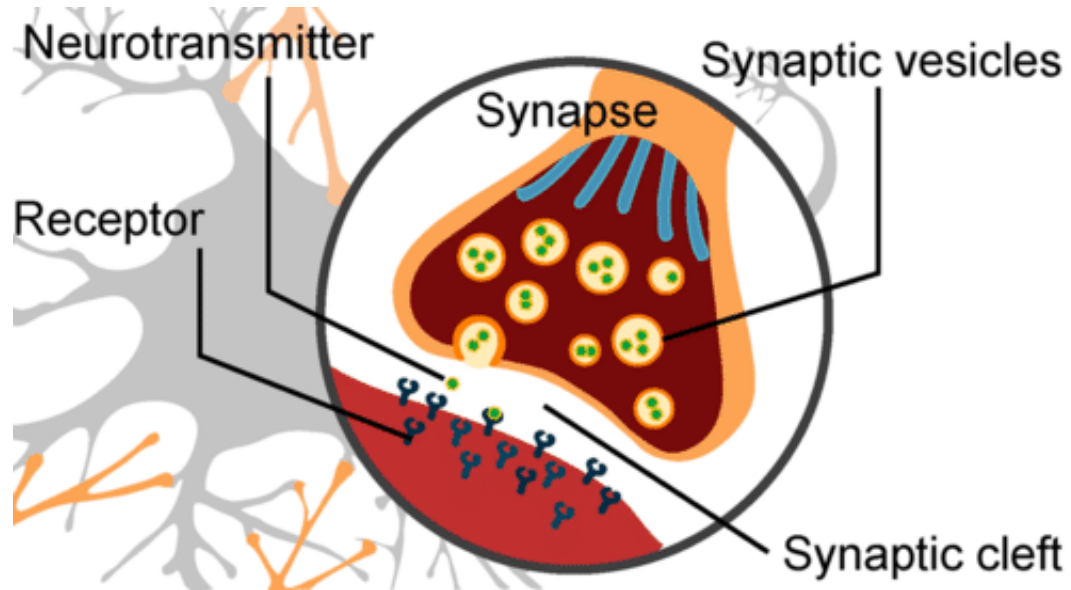


NEURONS

- Nerve cells, called Neurons
- The fundamental unit of the brain and nervous system
- These cells are responsible for sensory input from the world around us
- Sending motor commands to muscles
- Relaying electrical signals for everything
- On average 86 billion neurons
- Often quoted as **100 billion neurons**



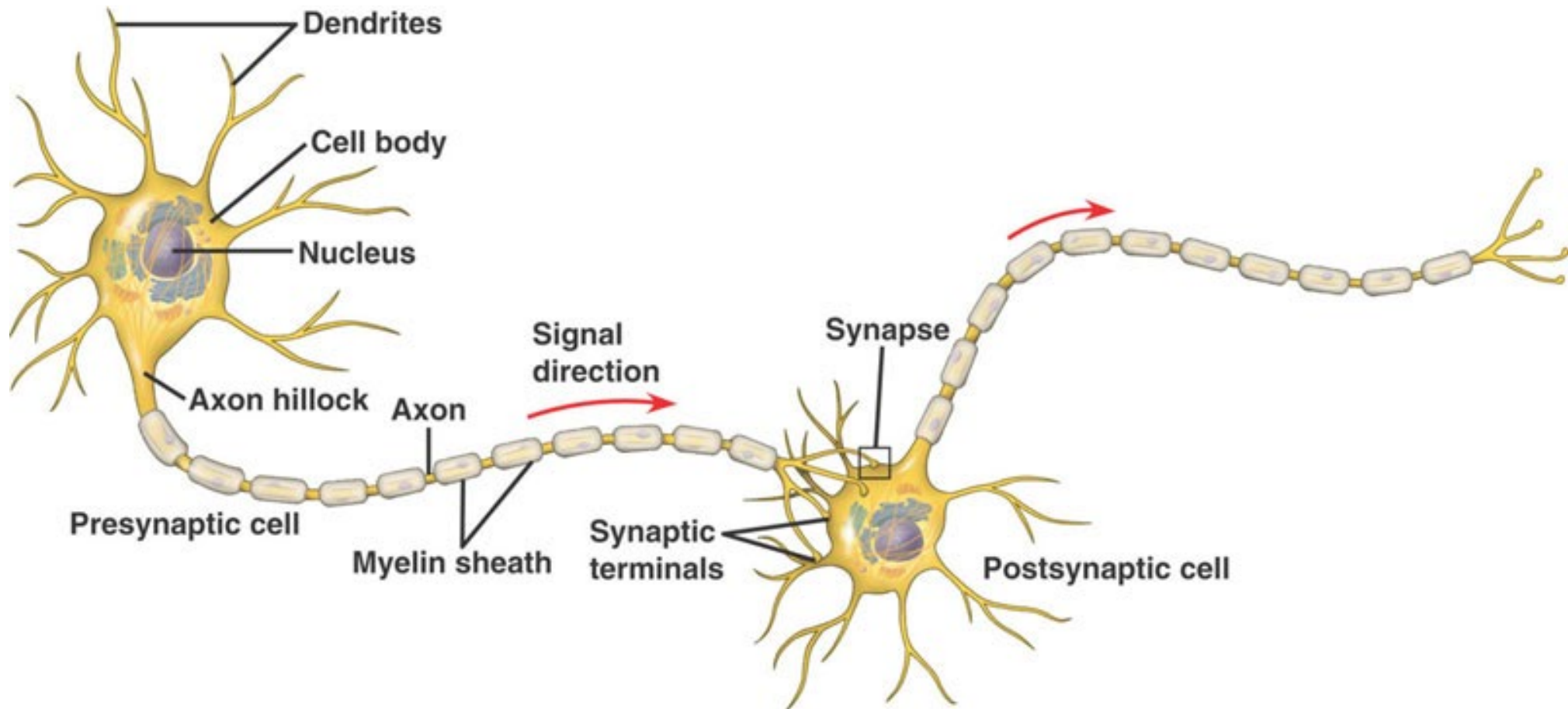
SYNAPSE



- A synapse is a connection between neural pathways
- Joining up neural pathways, allowing an electrical or chemical signal move from one neuron to another (target effector cell)
- Synapses are essential to the transmission of nervous impulses, emotions, thoughts, from one neuron to another



NEURON AND SYNAPSE



SUMMARY REMINDER

Billions of
neurons

Neurons connect
via synapses

Neuroscience is
the study of the
human brain and
associated topics

Three main parts
of the brain,
each with sub-
parts

