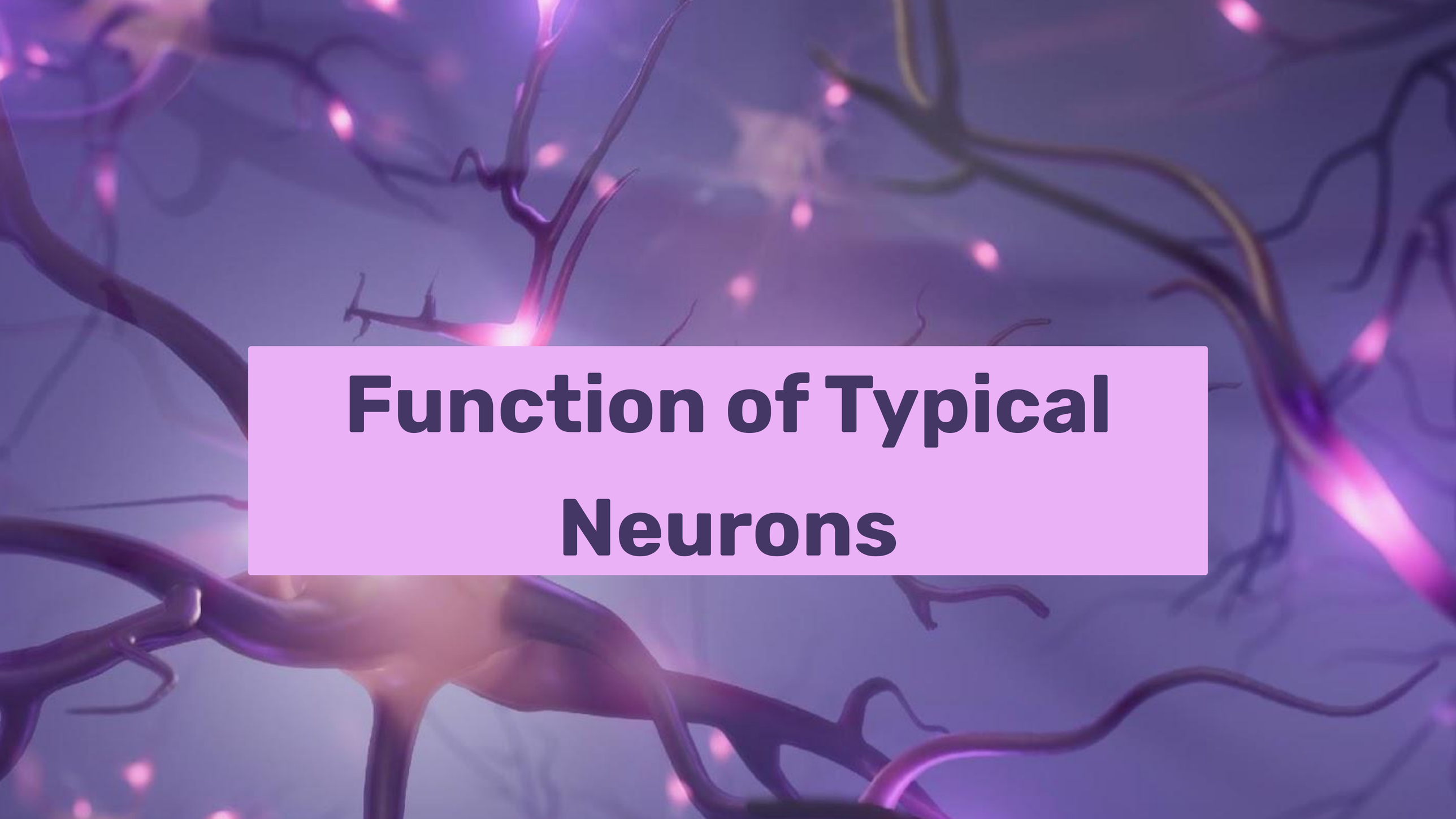
AP Psychology

# Neural Firing

Unit 1: Biological Bases of Behavior



# Function of Typical Neurons

# Neural Cells

## NEURONS

Transmit information

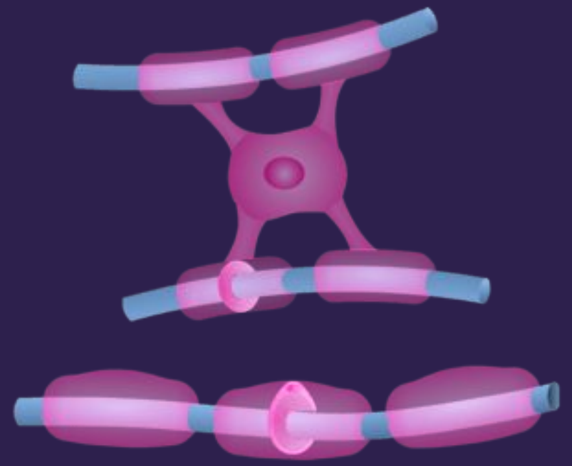
## GLIAL CELLS

Structure

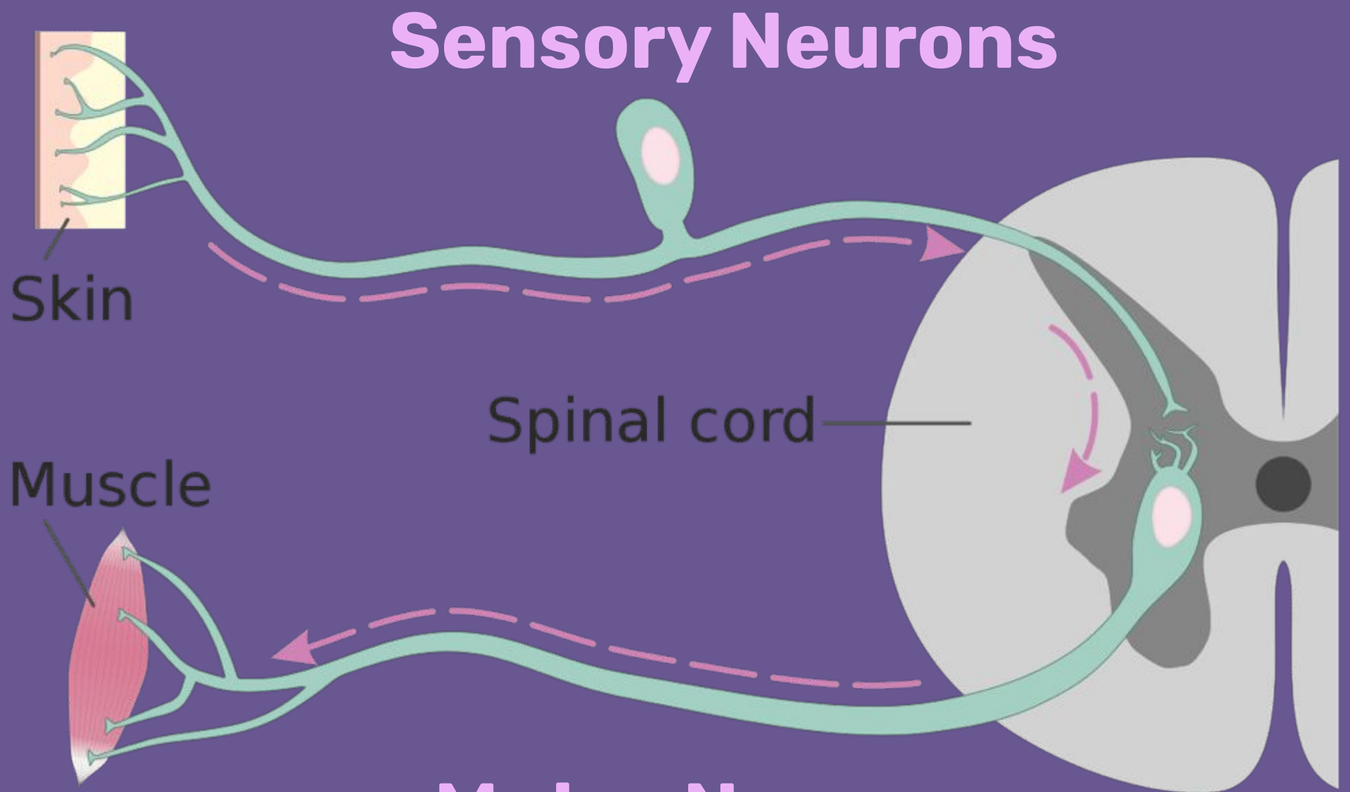
Insulation

Communication

Waste transport



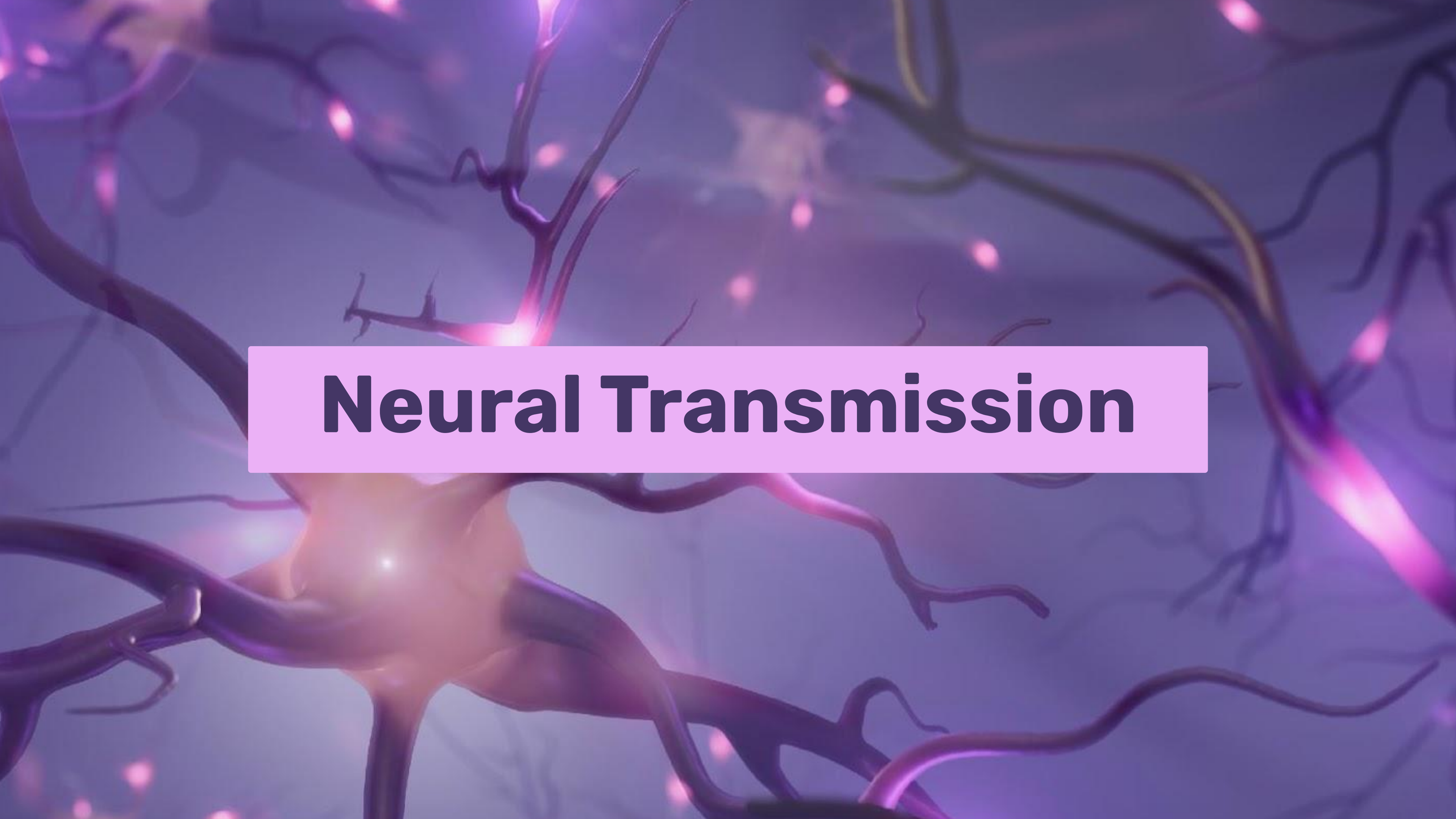
# Reflex Arc




Sensory Neurons

Interneurons

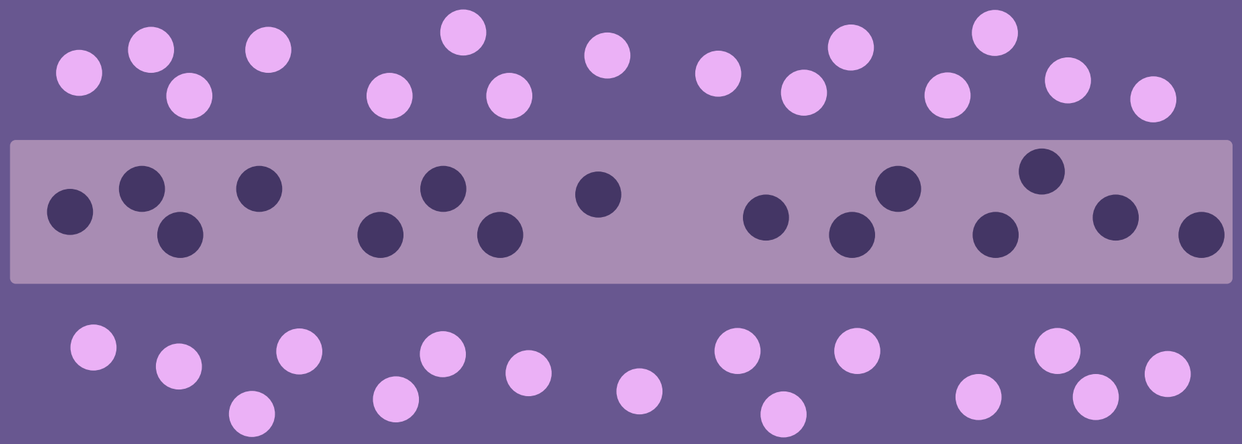
Motor Neurons

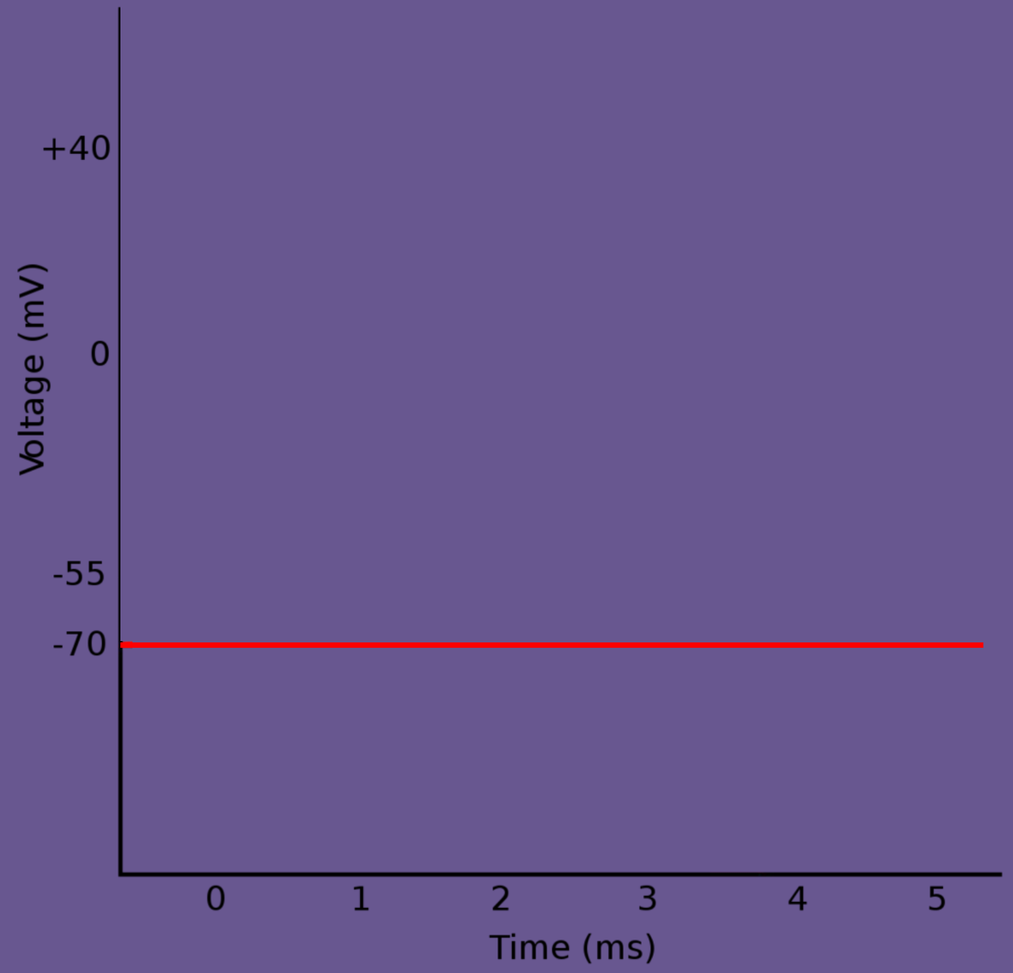


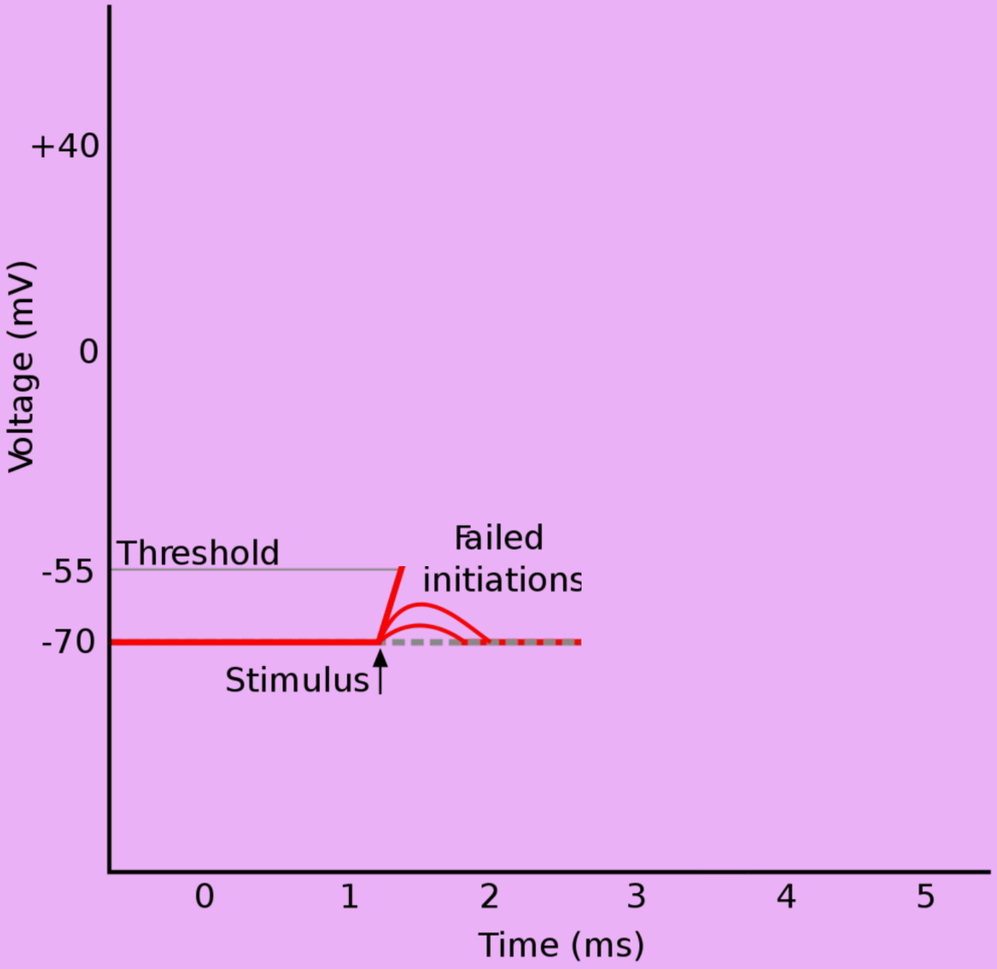
# Neural Transmission

# RESTING POTENTIAL

Neuron at rest







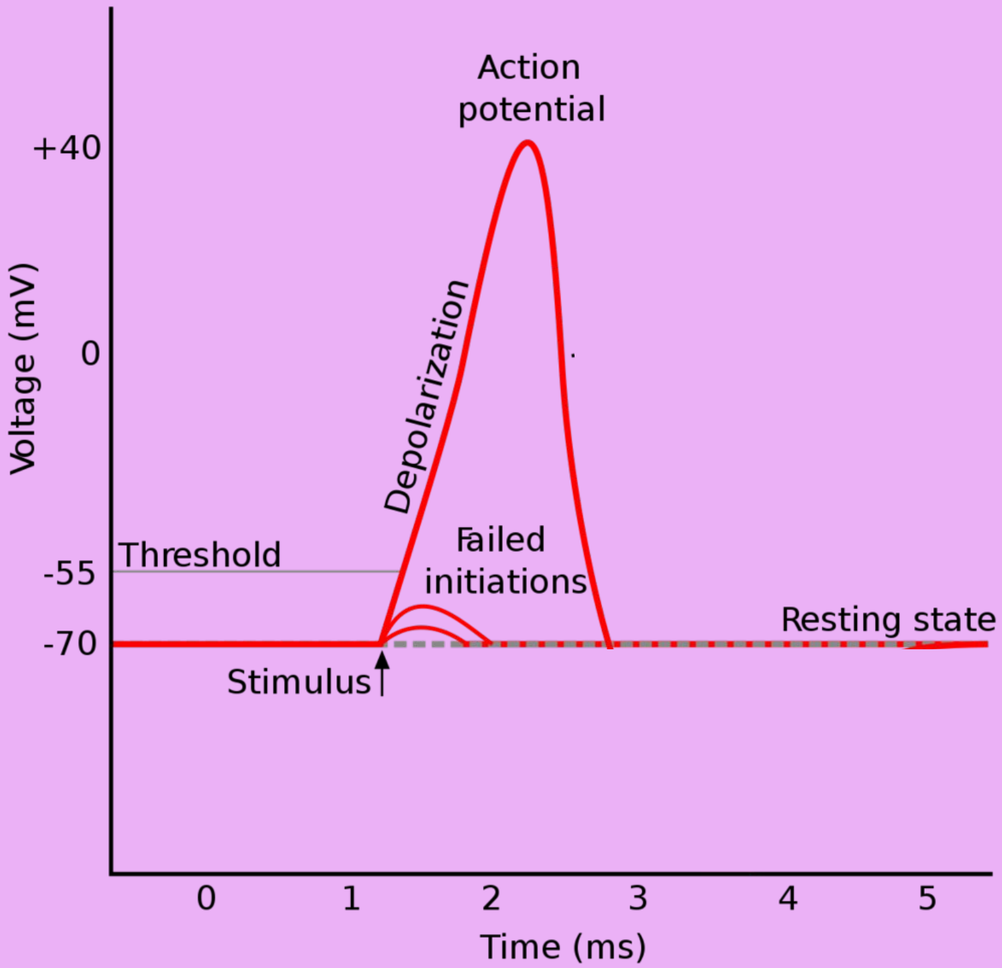

# THRESHOLD

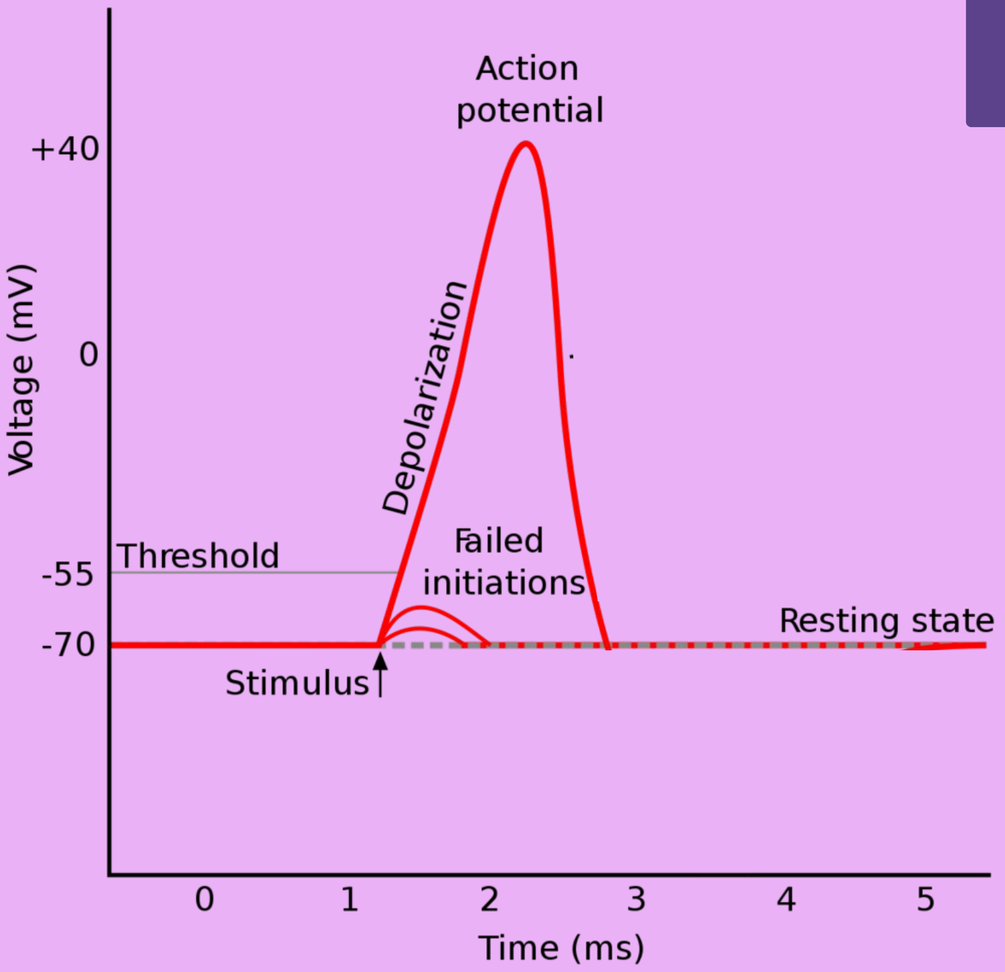
Minimum intensity needed to fire a stimulus

# ACTION POTENTIAL

Neural impulse

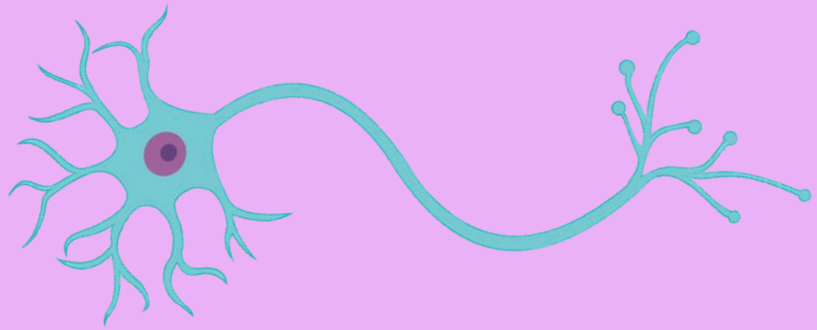
Electrical charge that travels down the axon






# DEPOLARIZATION

**Movement of a cell's membrane potential to a more positive value**

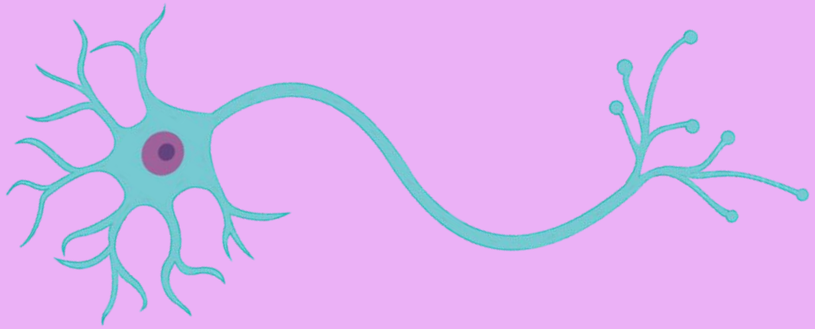


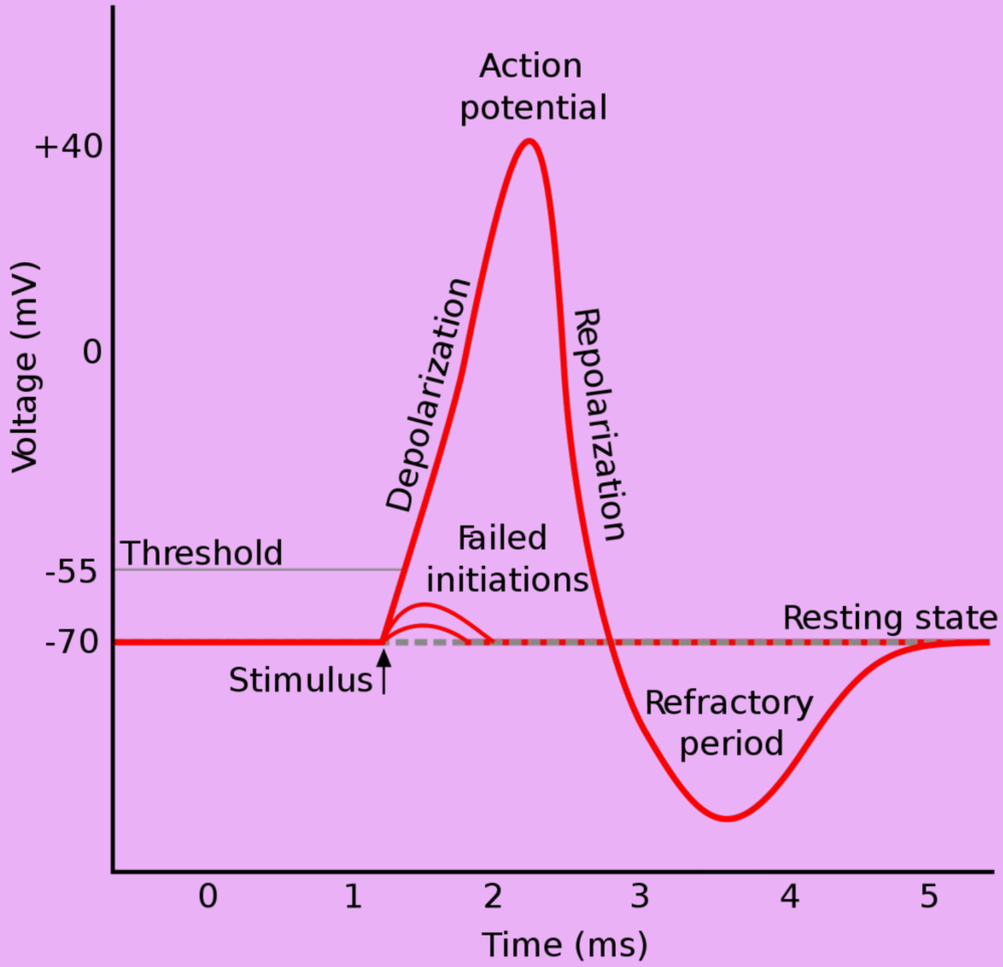
# ALL-OR-NONE *Principle*

Identical magnitude of a neuron’s action potential

# REFRACTORY PERIOD

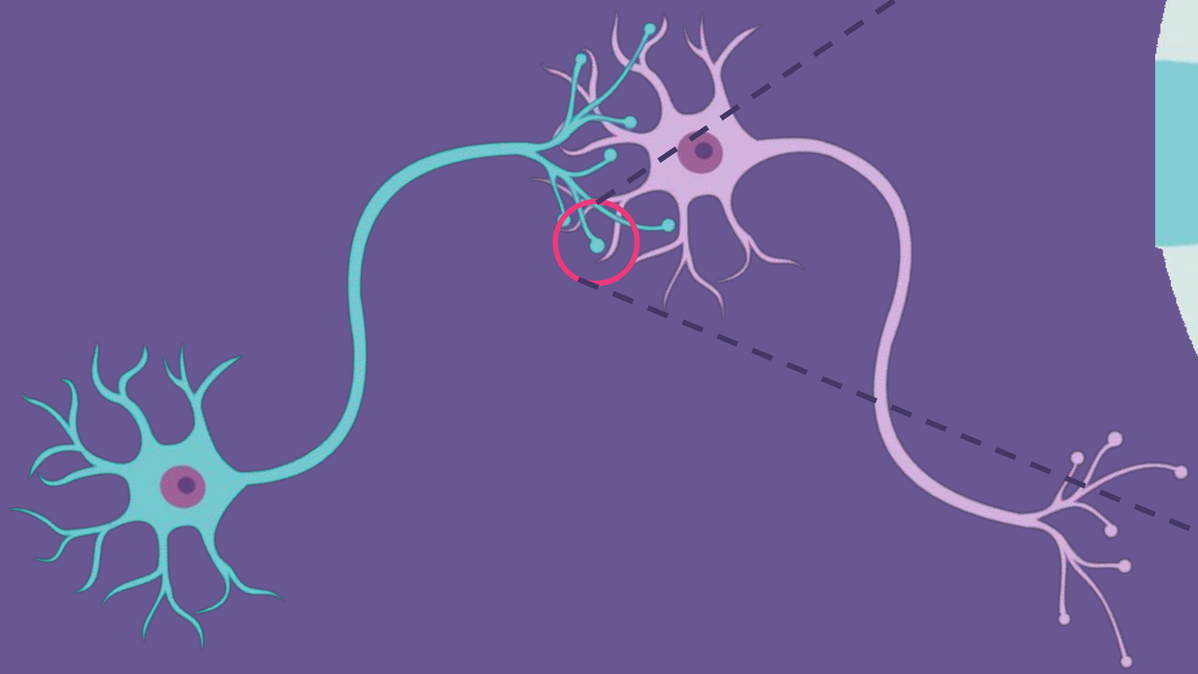
A neuron’s inability to fire

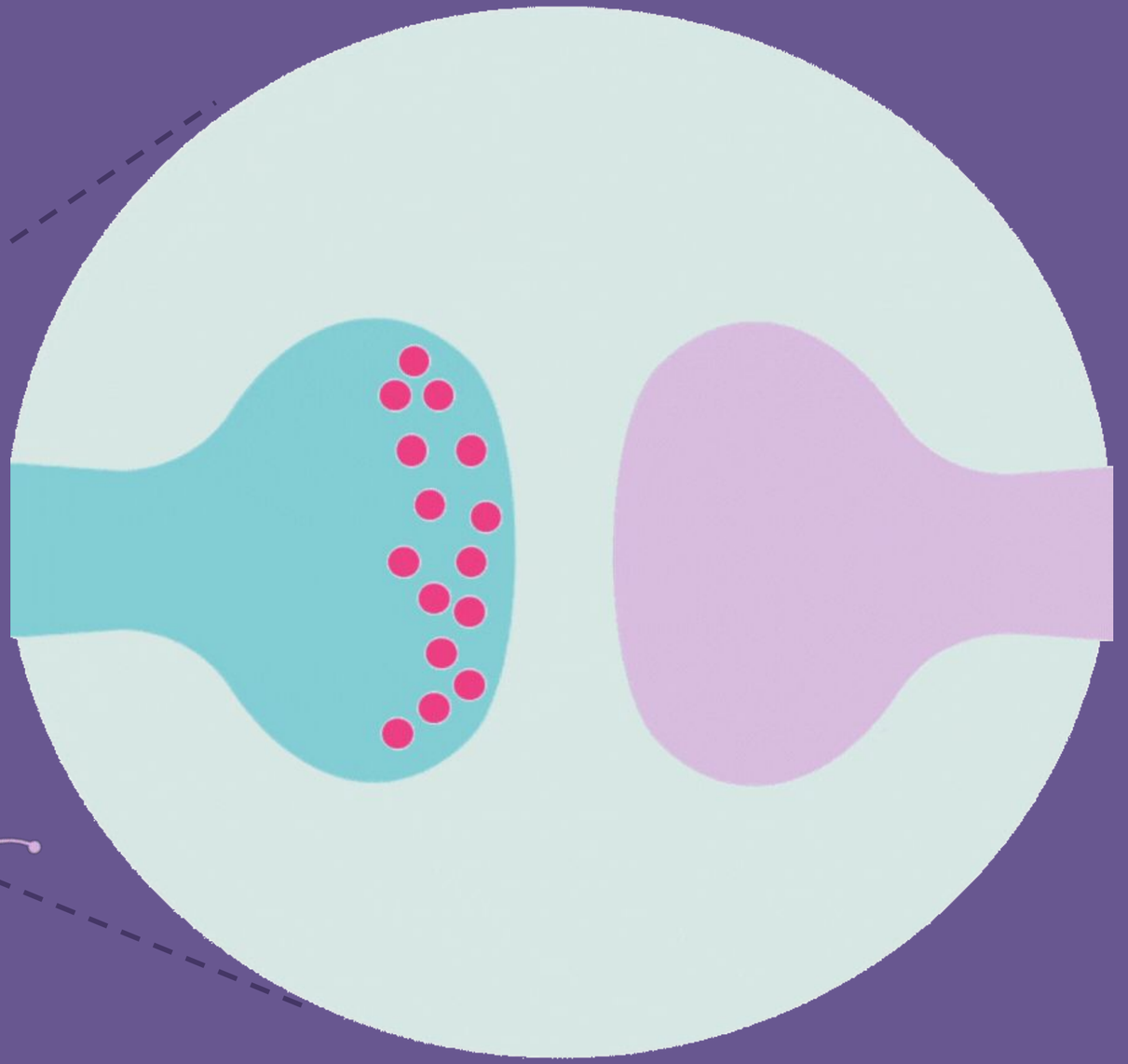


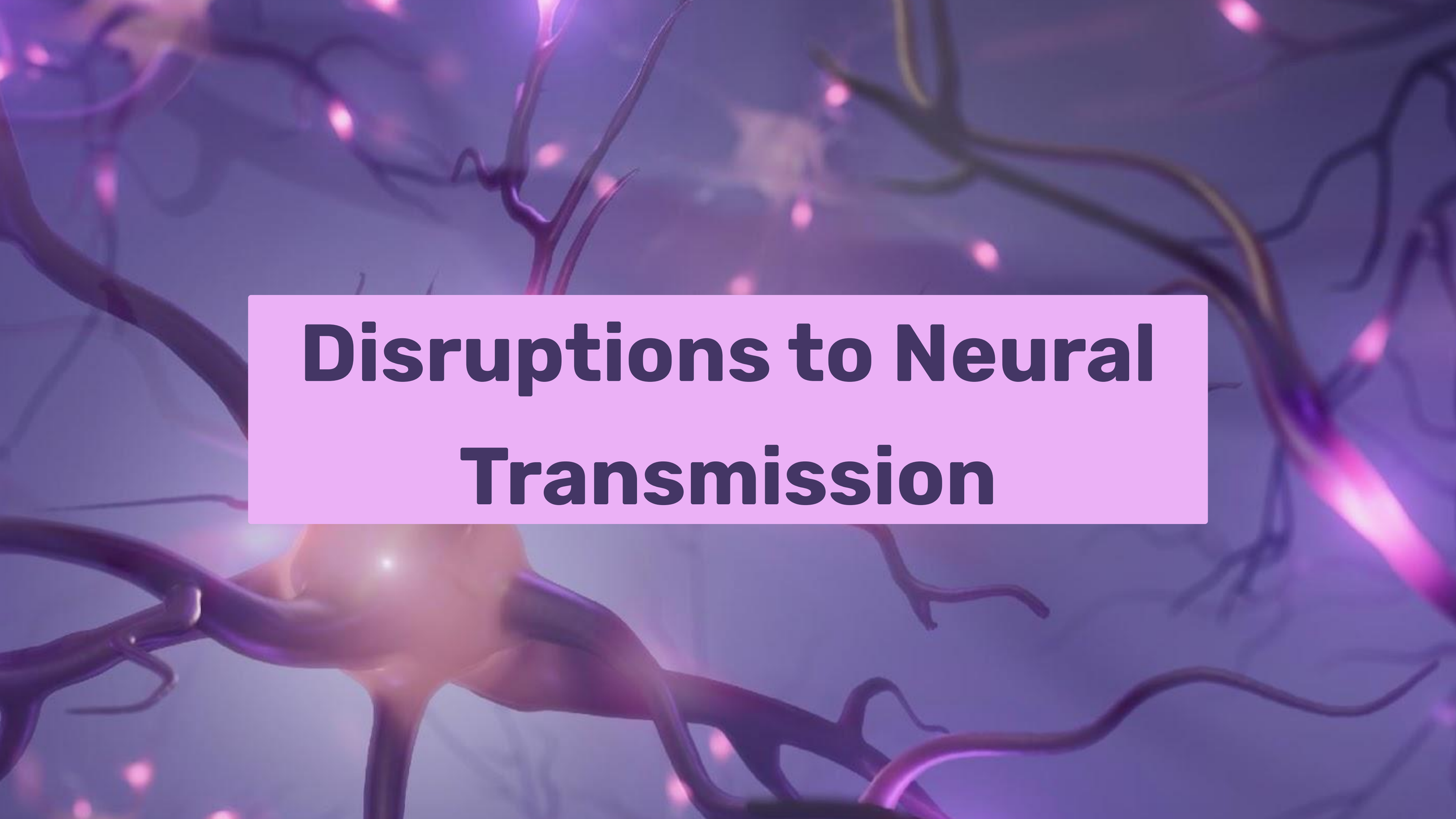


# Reuptake

## Reabsorption







# Disruptions to Neural Transmission

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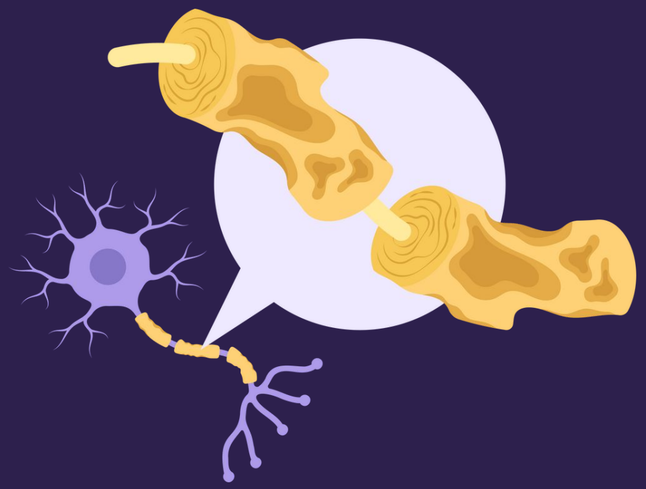
## MULTIPLE SCLEROSIS

Myelin sheath



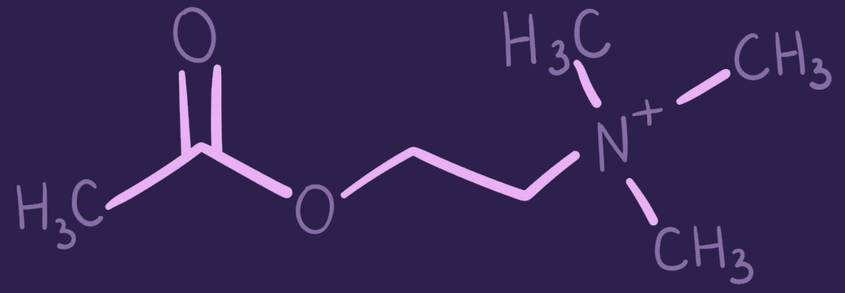
Vision

Movement

Cognition

## MYASTHENIA GRAVIS

Acetylcholine




Muscles

Speech

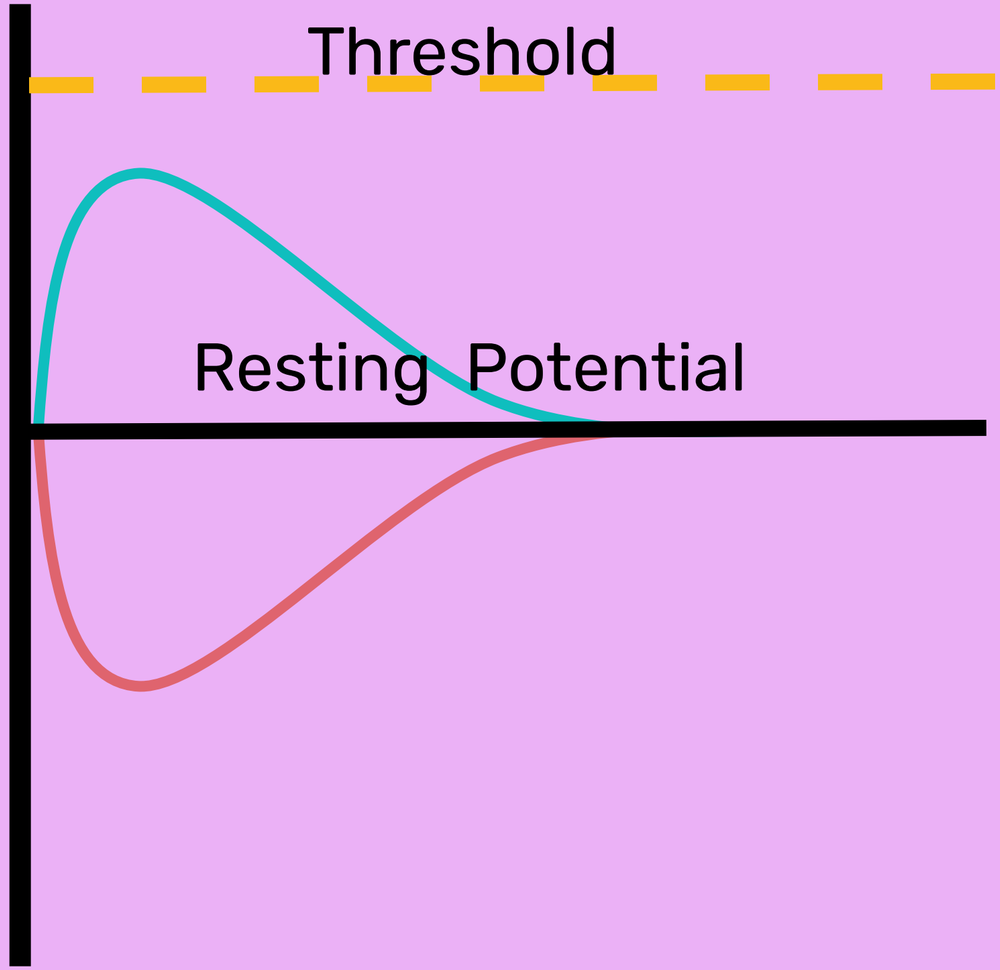
# Neurotransmitters

# Neurotransmitters

Internal chemicals

**Excitatory**

**Inhibitory**



# NEUROTRANSMITTERS

## ACETYLCHOLINE

Skeletal  and heart muscles, alertness, interneuron communication

## NOREPINEPHRINE

Fight or flight; attention, and memory

## DOPAMINE

Movement, learning

## SEROTONIN

Moods and emotional states; regulation of sleep-wake cycle

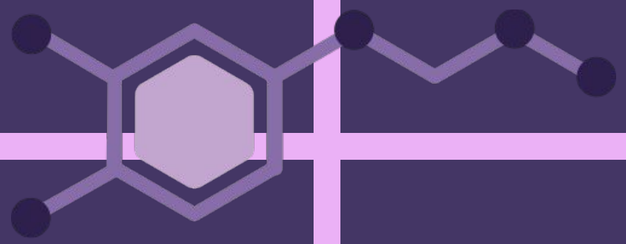
# NEUROTRANSMITTERS

## ENDORPHINS

Modulates the experience of pain or pleasure

## SUBSTANCE P

Modulation of pain

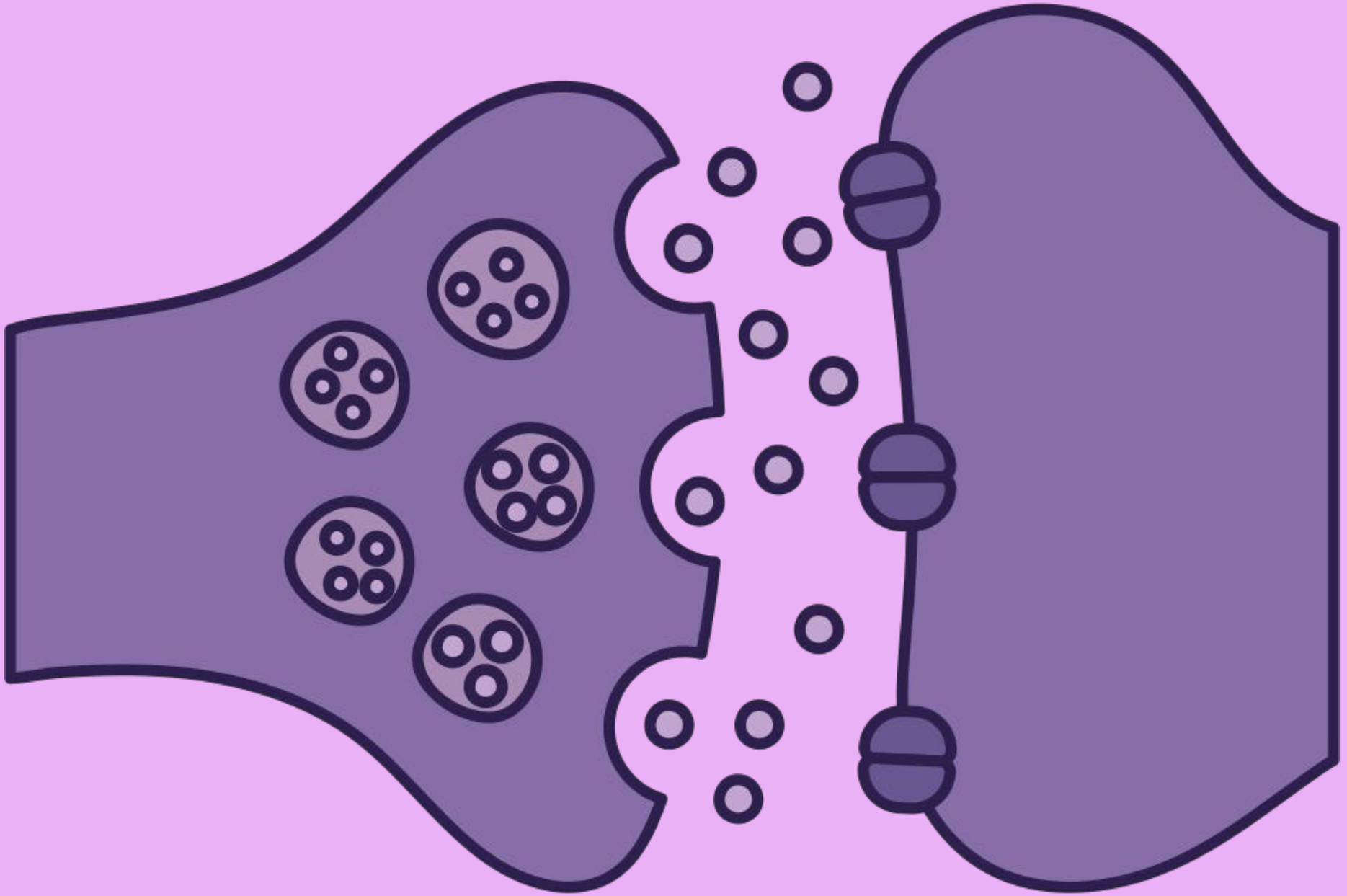


## GLUTAMATE

Learning and memory, sensory and motor functions

## GABA

Most abundant inhibitory neurotransmitter; regulates daily sleep-wake cycles




Hormones

# NEUROTRANSMITTERS VS. HORMONES

## NEUROTRANSMITTERS

Internal

Nervous system

Quick-acting

## HORMONES

Internal

Endocrine system

Long-lasting

**Work similarly to neurotransmitters**

# HORMONES

## ADRENALINE

Fight or flight

## LEPTIN

Hunger (suppressant)

## MELATONIN

Sleep

## GHRELIN

Hunger (stimulation)

## OXYTOCIN

Labor, lactation, love