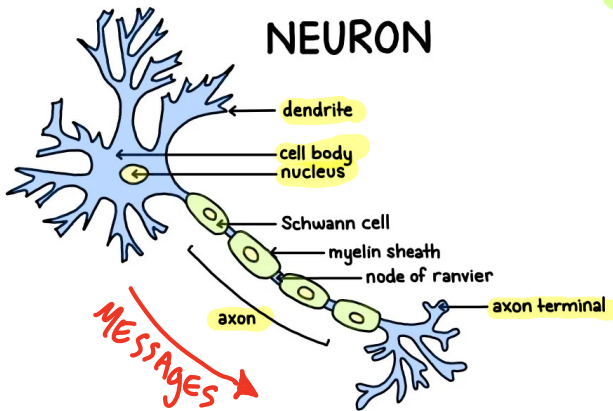# Nervous System

- the Job of the NERVOUS System is to RESPOND to Your ENVIRONMENT

REACTS to Stimuli → can Be

External (EX: temperature)

internal (EX: food arriving in stomach)

NEURON

- dendrite
- cell body
- nucleus
- Schwann cell
- myelin sheath
- node of ranvier
- axon
- axon terminal

MESSAGES

-unlike most systems, the NERVOUS system is composed ALMOST ENTIRELY of 1 tissue

100% made of NEURONS

→ its Job: send & RECEIVE MESSAGES

-A NEURON RECEIVES MESSAGES FROM Small Branches of Cell (DENDRITES) which PASS the message through Cell to the Axon

→ carry messages to dendrites of other cells.
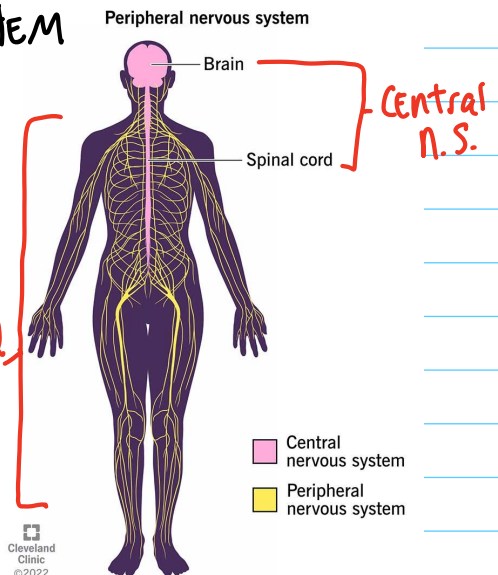
ORGANIZATION: Division of nervous SYSTEM

- Central nervous SYSTEM: Brain & Spinal CORD

- PERIPHERAL NERVOUS SYSTEM: HEAD & Spinal NERVES

→ 2 TYPES of nevrons
  ① SENSORY NEURONS: carry info from BODY to central n.s.
  ② MOTOR NEURONS: carries info from central n.s. to MUSCLES & ORGANS.

Peripheral nervous system

Brain

Central n.s.

Spinal cord

Peripheral n.s.

Central nervous system
Peripheral nervous system

Cleveland Clinic ©2022

2 other parts of PERIPHERAL N.S.
- ▻ SOMATIC NERVOUS SYSTEM ▻ VOLUNTARY RESPONSES
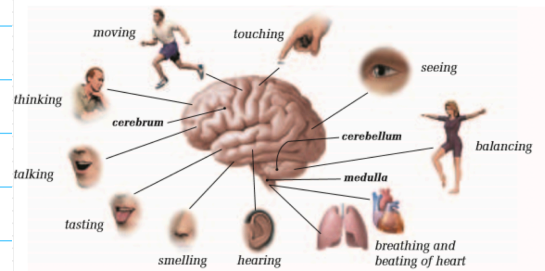- ▻ AUTONOMIC "   " ▻ AUTOMATIC "   "

EX: turning your HEAD

EX: - BREATHING
- Pupils dicating

Central Nervous System
- BRAIN RECEIVES stimuli from outside world & internally from body

- spinal cord connects brain to peripheral nervous system

moving   touching   seeing
thinking   cerebrum   cerebellum   balancing
talking   medulla
tasting   smelling   hearing   breathing and beating of heart

REFLEX RESPONSE
- SENSORY & MOTOR NEURONS WORK TOGETHER WITHOUT HELP OF THE BRAIN
    → THIS IS KNOWN AS A REFLEX

AN AUTOMATIC RESPONSE BY NERVOUS SYSTEM TO AN EXTERNAL STIMULUS
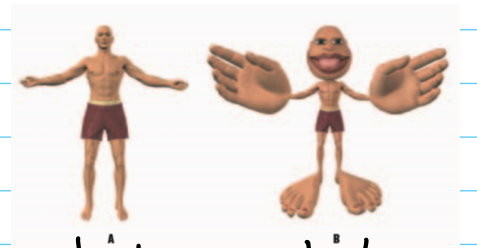
- BY THE TIME THE NEURONS HAVE SENT THIS MESSAGE TO THE BRAIN, YOUR BODY HAS ALREADY REACTED.

- THIS EXISTS TO REDUCE THE TIME IT TAKES TO RESPOND OR REMOVE YOURSELF FROM HARMFUL SITUATIONS. #EVOLUTION

UNEVEN SENSE OF TOUCH
- UNLIKE OTHER SENSES (SIGHT, HEARING, SMELL, TASTE) THE SENSE OF TOUCH IS NOT FOUND IN ONE SPECIFIC PLACE.
- SO... this makes skin the LARGEST ORGAN IN HUMAN BODY

A   B
DRAWN TO NORMAL PROPORTIONS   DRAWN IN PROPORTION TO ITS SENSITIVITY TO TOUCH

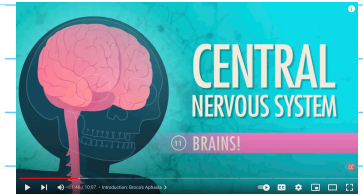## Brain, Spinal Cord, and Nerve Disorders (9)

Angioplasty with Stenting

Arteries of the Brain

Basal Ganglia: Frontal View

Brain

Midbrain: Cross-Section (Normal Anatomy)

Multiple Sclerosis: Neurons with Degenerated Myelin

Nerve Impulse

Parkinson Disease in the Midbrain

Spinal Column and Spinal Cord

WANT TO WATCH? CHECK OUT THE CRASH COURSE VIDEOS HERE