



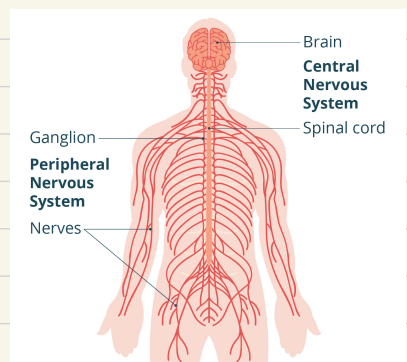
# The Nervous System

↳ 2 major divisions

1) Central nervous system → within the bones

\* The brain → within the skull

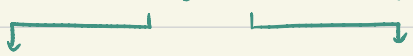
\* Spinal cord → within vertebral canal



## 2) Peripheral nervous system

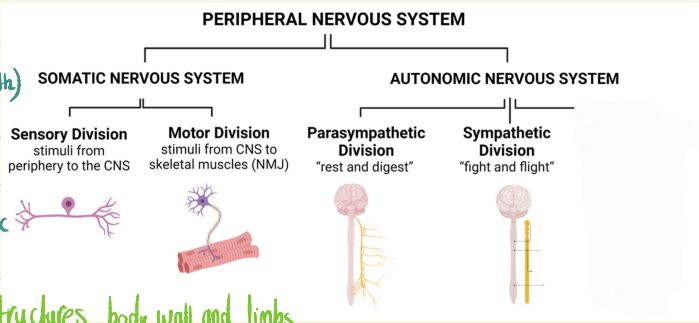
(a) Autonomic nervous system (ANS)

Supplies involuntary structures (cardiac & smooth muscles)



Sympathetic

Para Sympathetic



(b) Somatic nerves (SNS) → Voluntary structures, body wall and limbs

\* cranial (12 pairs) → Connected to brain

\* spinal (31 pair) → Connected to spinal cord

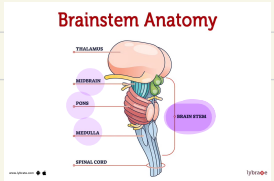
## The brain

(1) Cerebrum

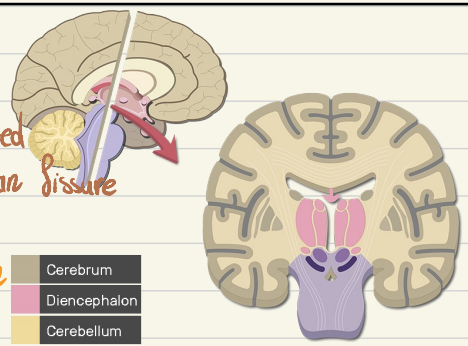
↳ 2 cerebral hemispheres separated from each other by a median fissure  
↳ Diencephalon

(2) Brain stem

(3) cerebellum



\* mid brain  
\* pons  
\* medulla



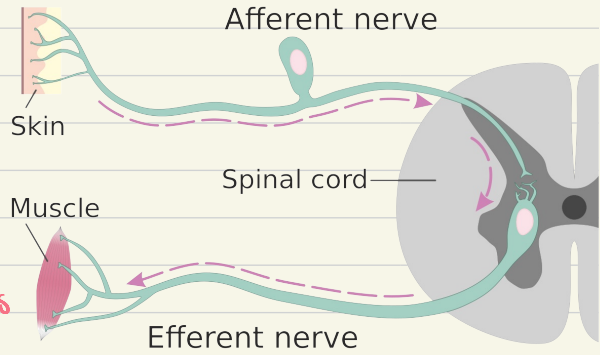
# Functional classification of Neurons

## 1 afferent (sensory)

\* Convey info from tissues & organs into Central nervous system (CNS)

## 2 Efferent (motor)

\* Transmit signals from the CNS to effector organs (muscles & glands)



# Cranial Nerve Fibers

## Afferent (Sensory)

### Somatic

#### General (GSA)

\* Cutaneous sensation  
Pain, Temperature

#### Special (SSA)

\* Vision  
\* Hearing  
\* Equilibrium

### Visceral

#### General (GVA)

distention of organs and viscera

#### Special (SVA)

\* smell  
\* taste

## Efferent (Motor)

### Somatic

#### General (GSE)

\* Motor to skeletal

#### Special (SSE)

X

Autonomic  
fibers to smooth & cardiac muscle and glands

### Visceral

#### General (GVE)

#### Special (SVE)

Skeletal muscle from brachial arches

# [12 Cranial nerves]

- 1 - Olfactory
- 2 - Optic
- 3 - Oculomotor
- 4 - Trochlear
- 5 - Trigeminal
- 6 - Abducens
- 7 - Facial
- 8 - Vestibulocochlear (Auditory)
- 9 - Glossopharyngeal
- 10 - Vagus
- 11 - Accessory
- 12 - Hypoglossal

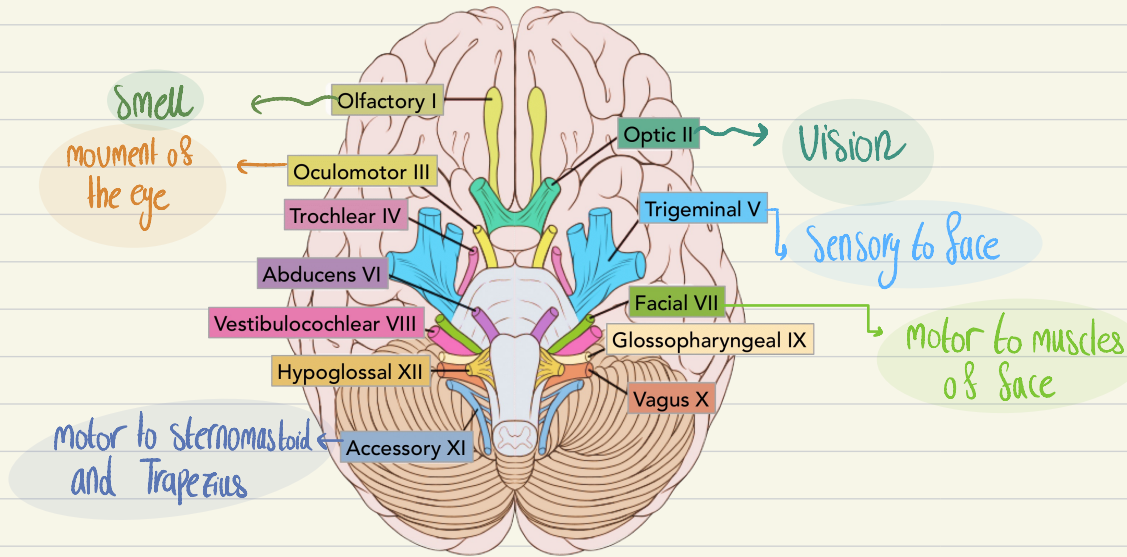
motor or sensory? or both?

- I - Sensory
- II - Sensory
- III - Motor
- IV - Motor
- V - Both
- VI - Motor
- VII - Both
- VIII - Sensory
- IX - Both
- X - Both
- XI - Motor
- XII - Motor

Mnemonics

out of our Troubled  
Times Arose Fear, very  
Great violence And hatred

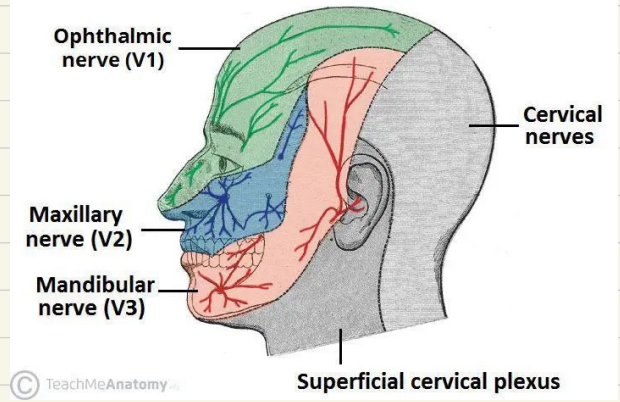
Some says Money Matter  
But My brother says Big  
Brains Matter More



# Trigeminal e Sensory

divided into ⇒

- U1: ophthalmic
- U2: maxillary
- U3: mandibular



# origin of cranial nerves

∴ Cerebrum

- I\_ olfactory
- II\_ optic

∴ Mid brain

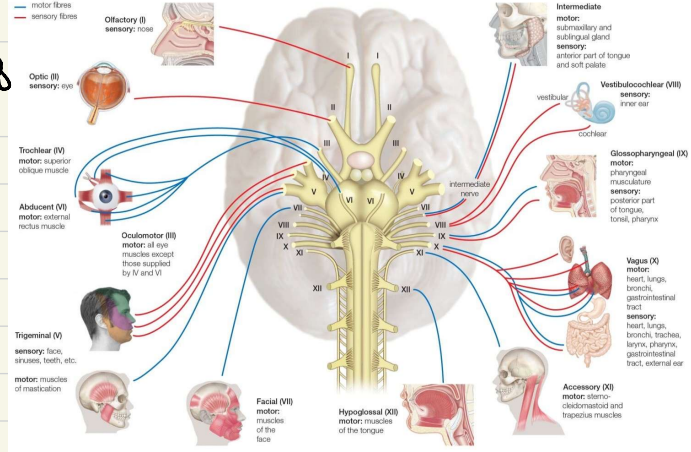
- III\_ oculomotor
- IV\_ Trochlear

∴ Pons

- V\_ Trigeminal
- VI\_ Abducens
- VII\_ Facial
- VIII\_ Vestibulocochlear

∴ medulla

- IX\_ Glosso pharyngeal
- X\_ Vagus
- XI\_ Accessory
- XII\_ hypoglossal



## CRANIAL NERVES

