# Cerebrovascular Diseases
## Part III

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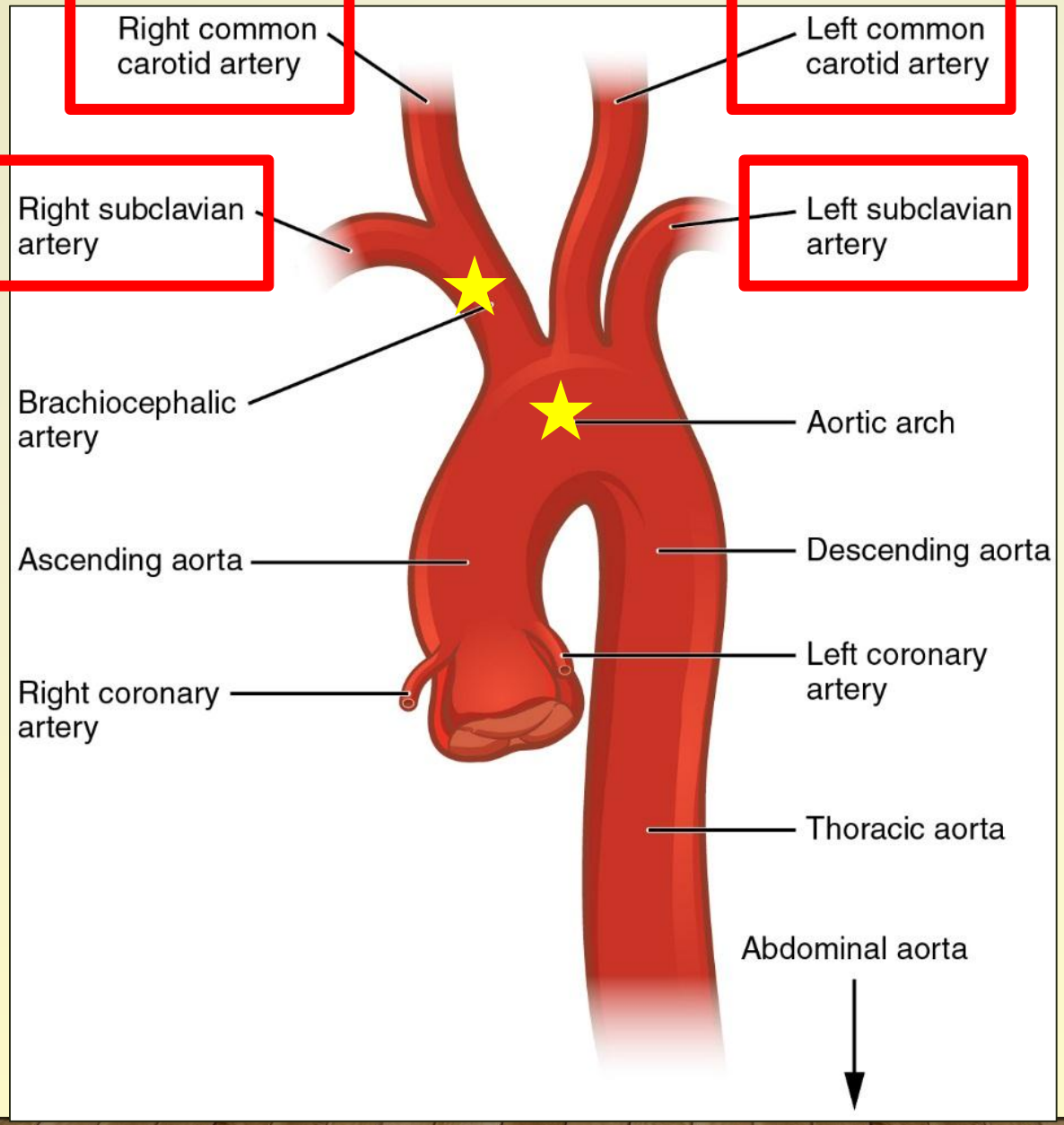
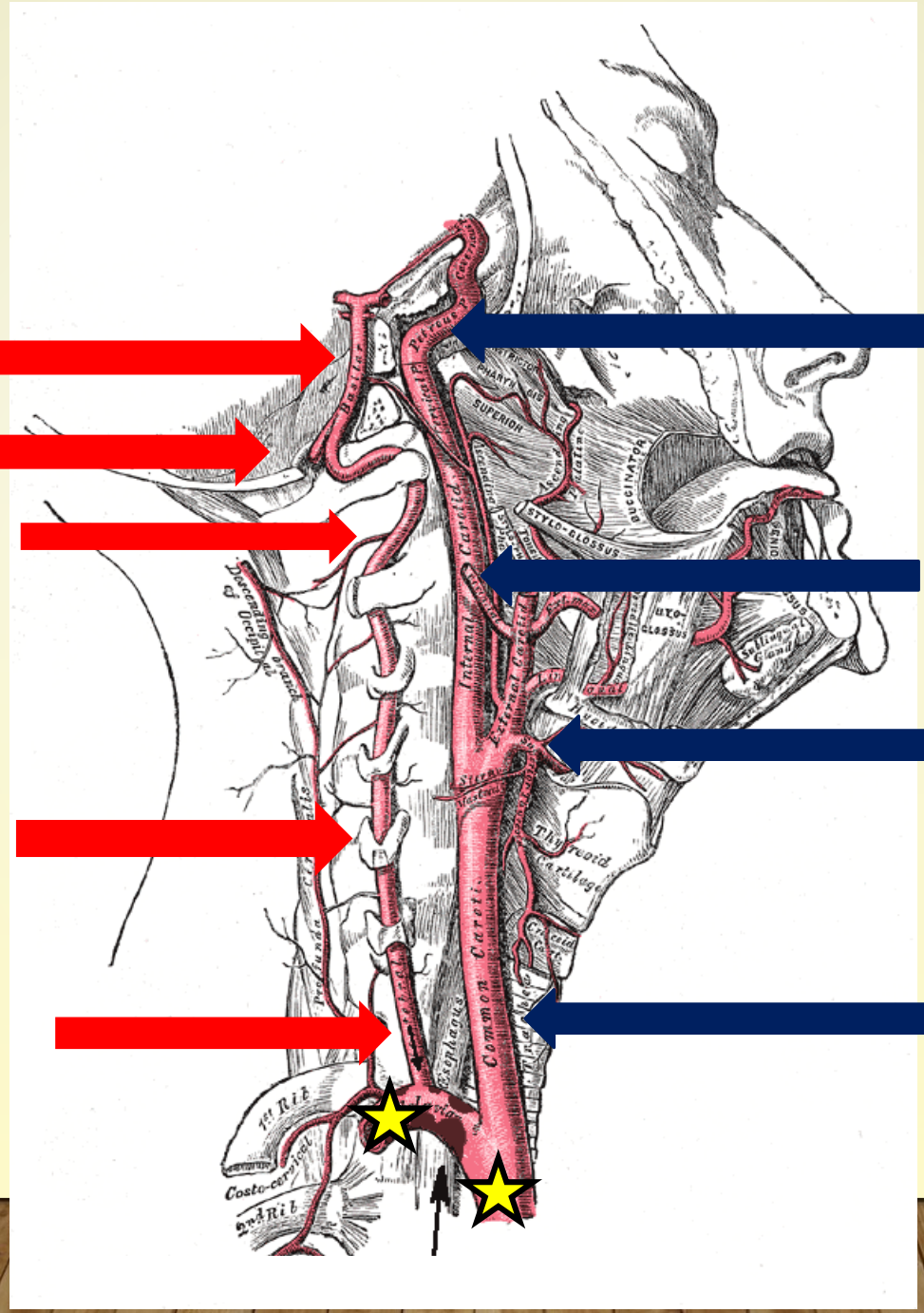
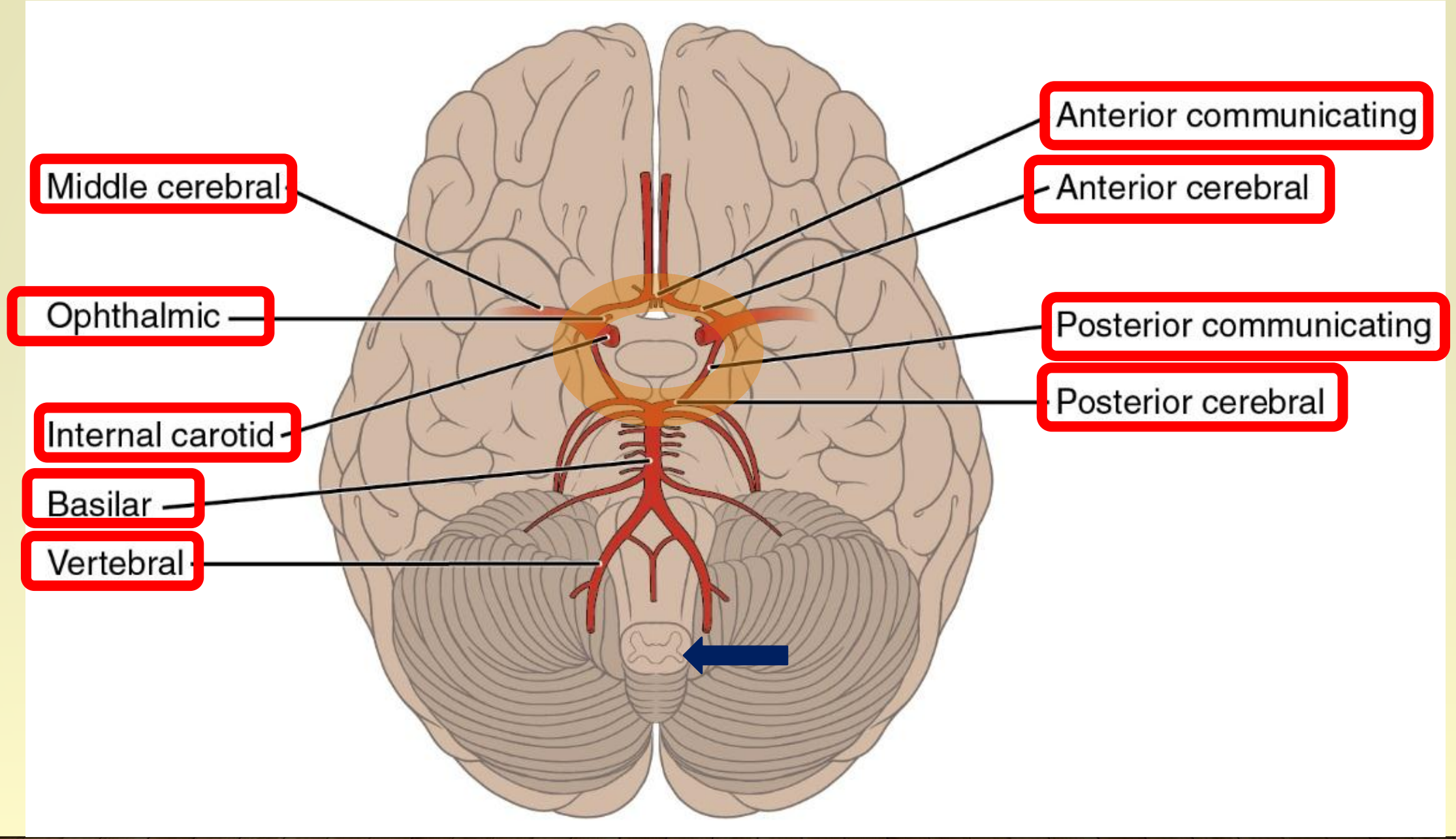
# STROKE

- The Definition Of Stroke ✓
- Classification of Strokes ✓
- Stroke Incidence and Prevalence ✓
- Risk Factors for Stroke ✓
- **Blood supply of the brain (part 1).**

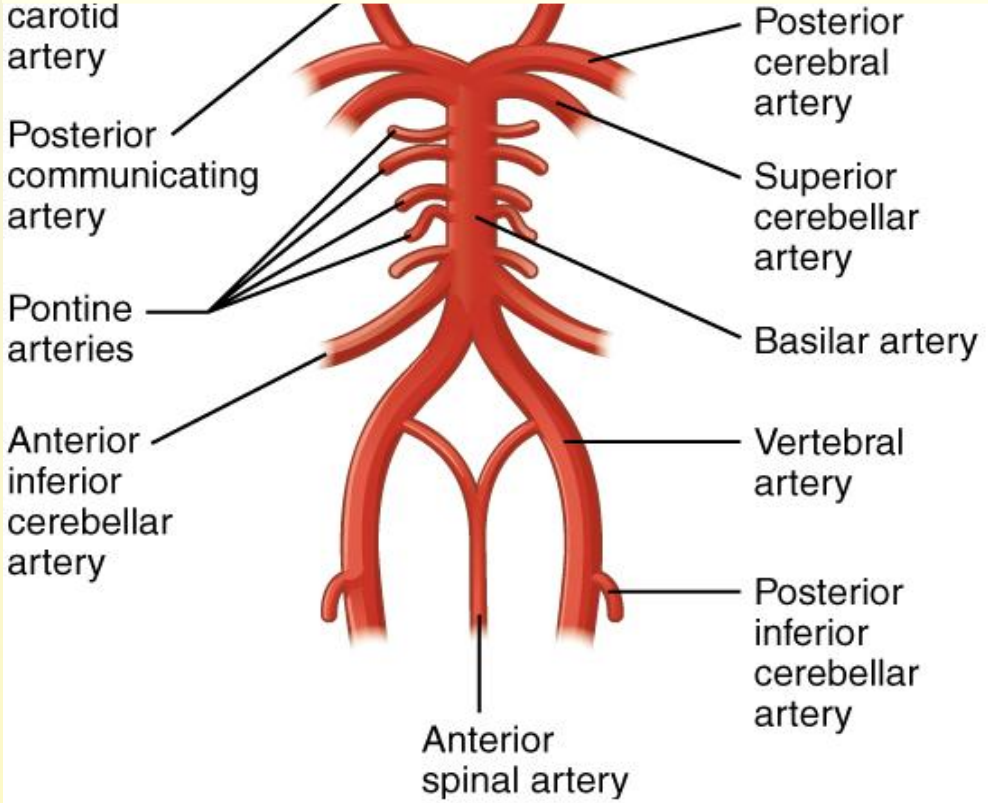
# BLOOD SUPPLY OF THE BRAIN


Right common carotid artery
Left common carotid artery
Right subclavian artery
Left subclavian artery
Brachiocephalic artery
Aortic arch
Ascending aorta
Descending aorta
Left coronary artery
Right coronary artery
Thoracic aorta
Abdominal aorta


Internal Carotid
External Carotid
Common Carotid
SUPERIOR
STYLO-GLOSSUS
BUCCINATOR
Thyroid cartilage
1st Rib
2nd Rib
Costo-cervical

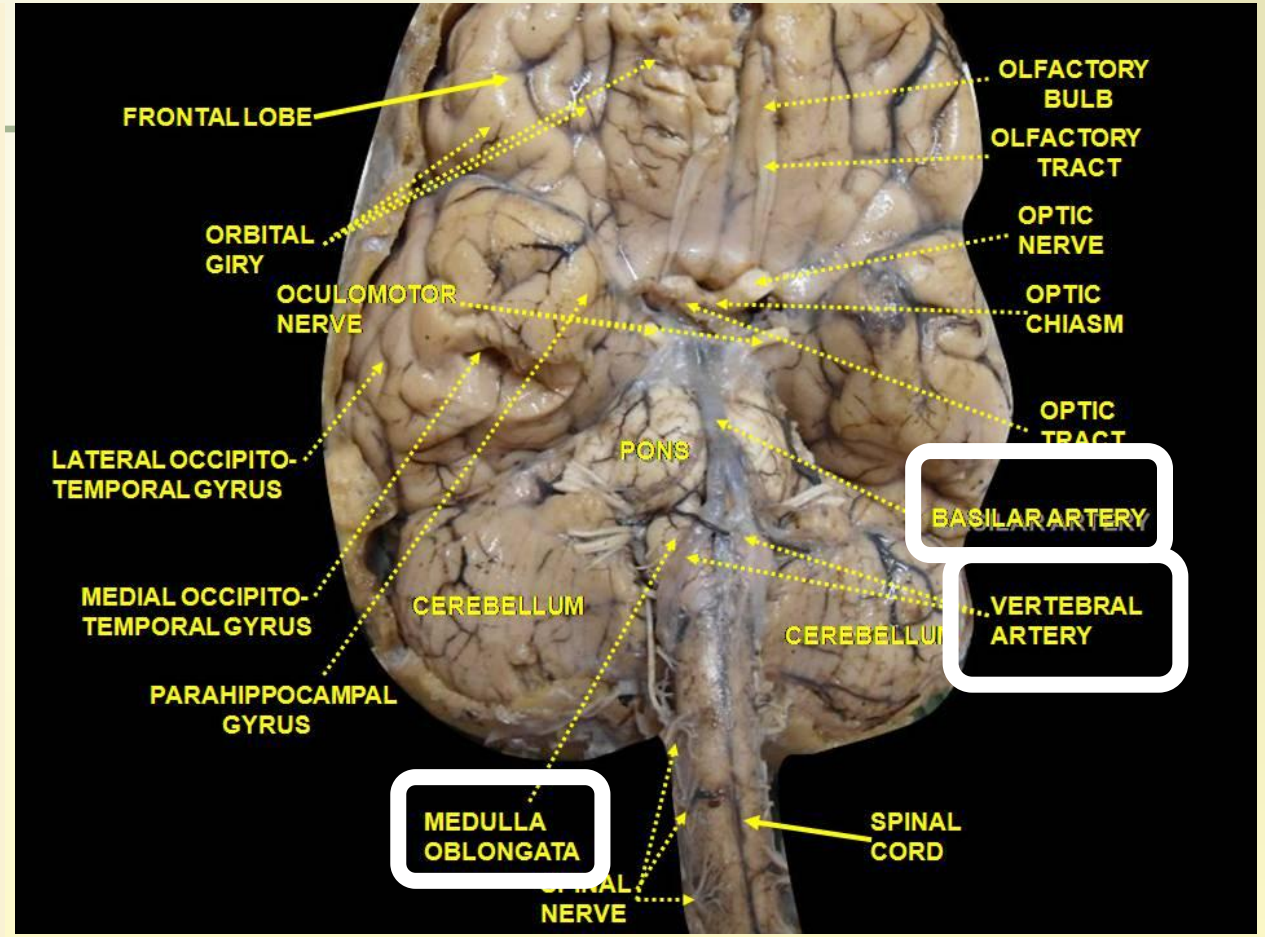

Middle cerebral
Ophthalmic
Internal carotid
Basilar
Vertebral
Anterior communicating
Anterior cerebral
Posterior communicating
Posterior cerebral

# POSTERIOR CERCULATION


carotid artery
Posterior communicating artery
Pontine arteries
Anterior inferior cerebellar artery
Anterior spinal artery
Posterior cerebral artery
Superior cerebellar artery
Basilar artery
Vertebral artery
Posterior inferior cerebellar artery

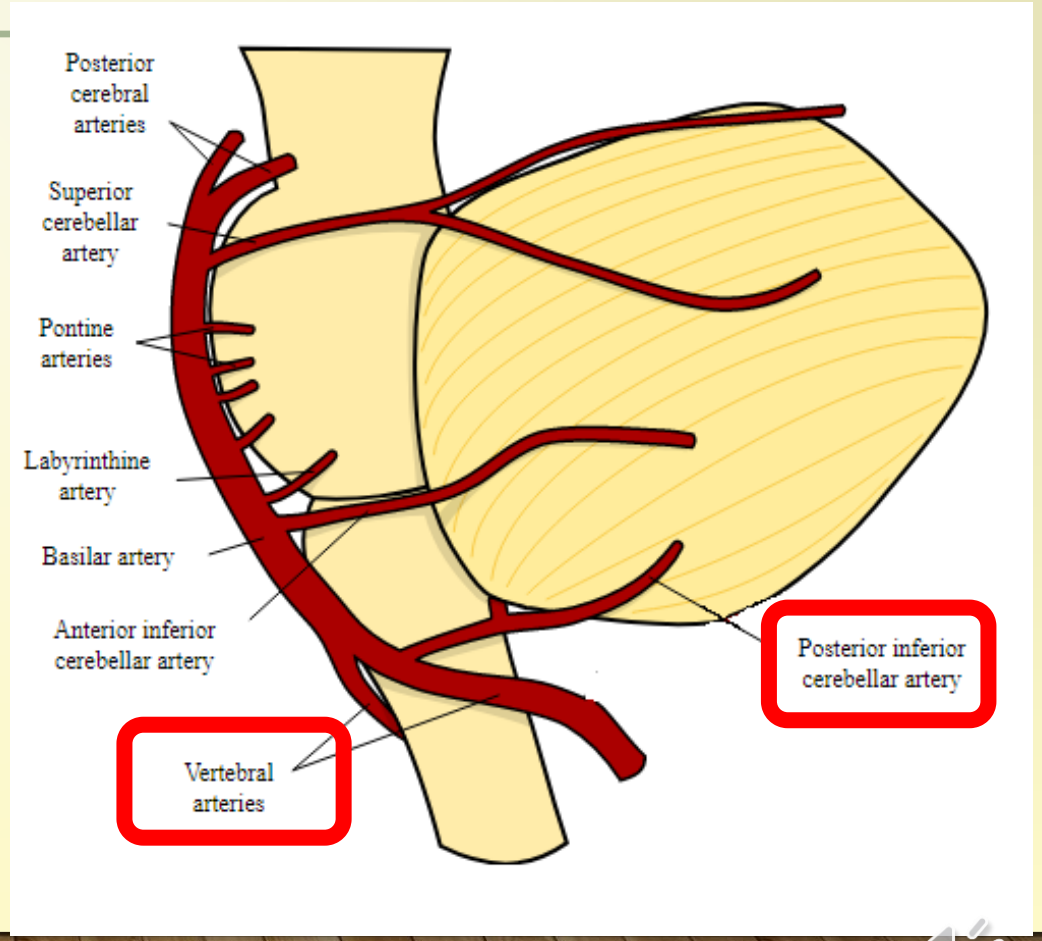
# Vertebral Artery

- **The intracranial segment of the vertebral artery (V4)** begins at the foramen magnum and finishes in the joint with the contralateral artery usually at the level of the pontomedullary junction.
- It ascends anterior or between the hypoglossal rootlets to reach the anterior surfaces of the medulla oblongata.
- **The following branches arise from the V4:**
  - **The posterior inferior cerebellar artery.**
  - **Anterior and posterior spinal arteries, and**
  - **Anterior and posterior meningeal arteries**



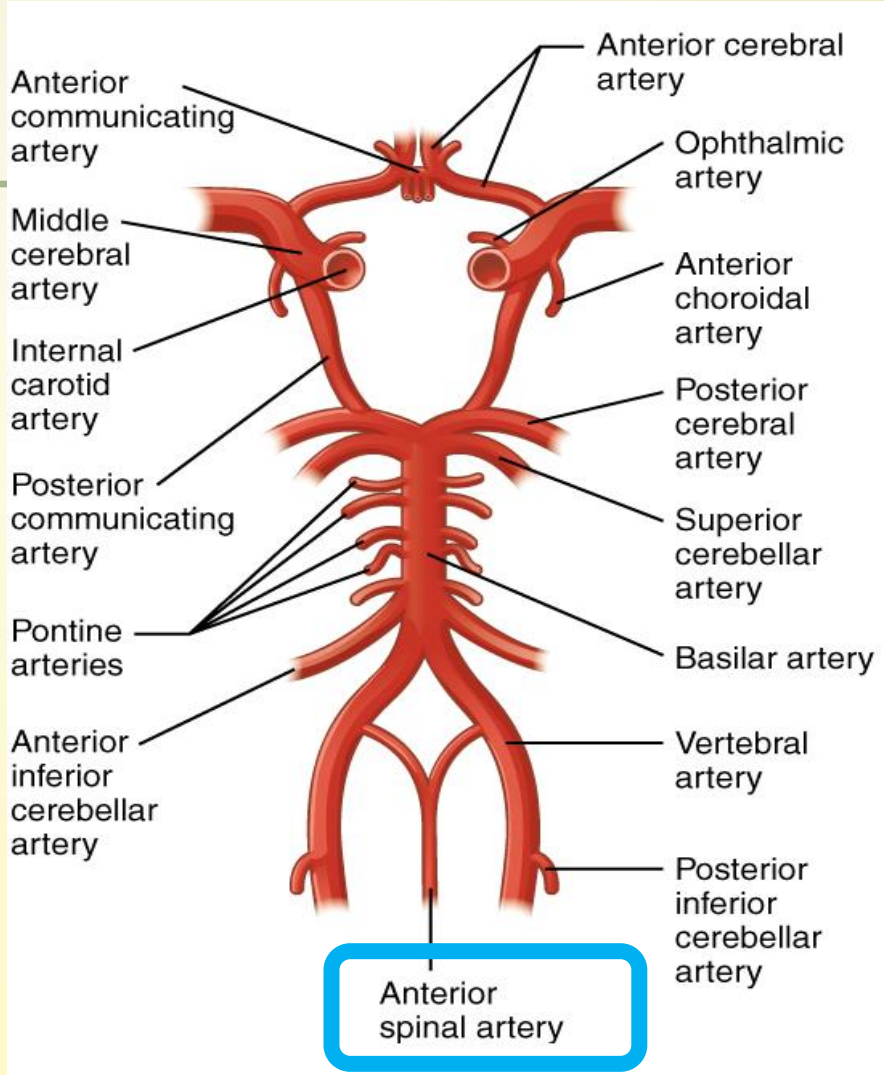
# The Posterior Inferior Cerebellar Artery (PICA)

- **PICA encircles the medulla** to supply the lateral medulla.
- **The distal portion of PICA** then bifurcates into a medial trunk that supplies the vermis and the adjacent cerebellar hemisphere and a lateral trunk that supplies the cortical surface of the tonsil and cerebellar hemisphere.



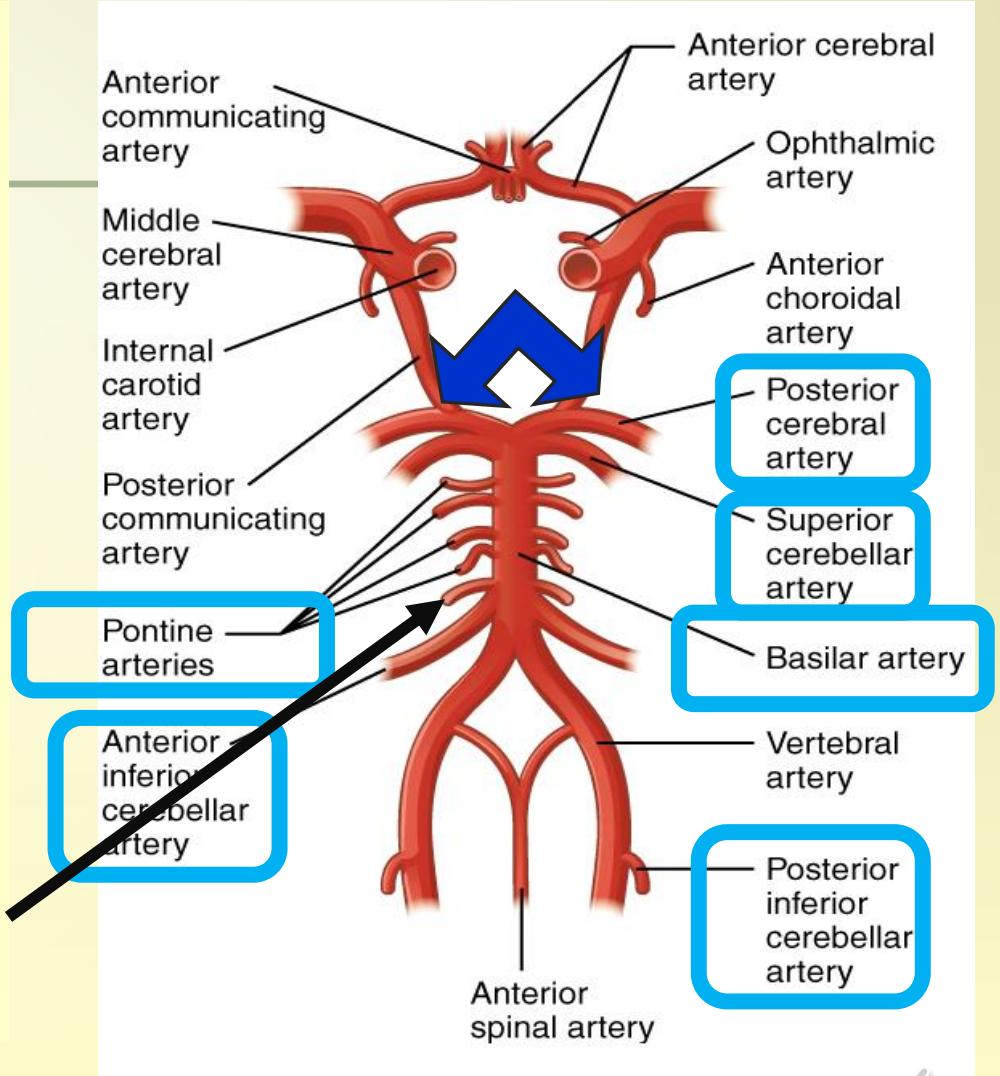
# The Anterior Spinal Artery

- It arises from the uppermost part of the vertebral artery and joins its fellow of the opposite side on the front of medulla to form a single artery, which descends in the anterior median fissure of the spinal cord.



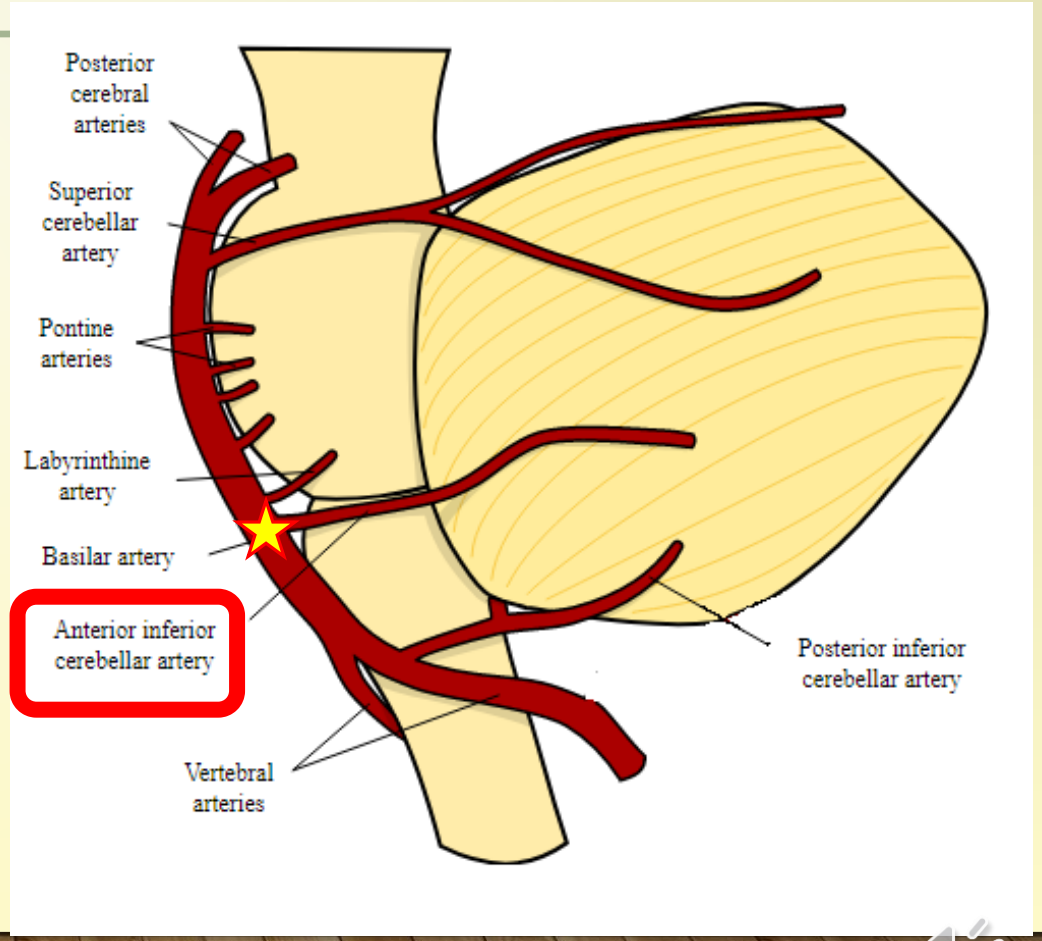
# The Basilar Artery

- The basilar artery is formed by the union of the two vertebral arteries, which takes place at the lower border of the ventral pons.
- It continues superiorly to terminate in the interpeduncular cistern by dividing into **the posterior cerebral arteries.**
- **Branches of the basilar artery:**
  - **Anterior inferior cerebellar artery (AICA),**
  - **The superior cerebellar Artery (SCA),**
  - **Pontine branches and**
  - **The internal auditory artery** (labyrinthine artery, auditory artery)



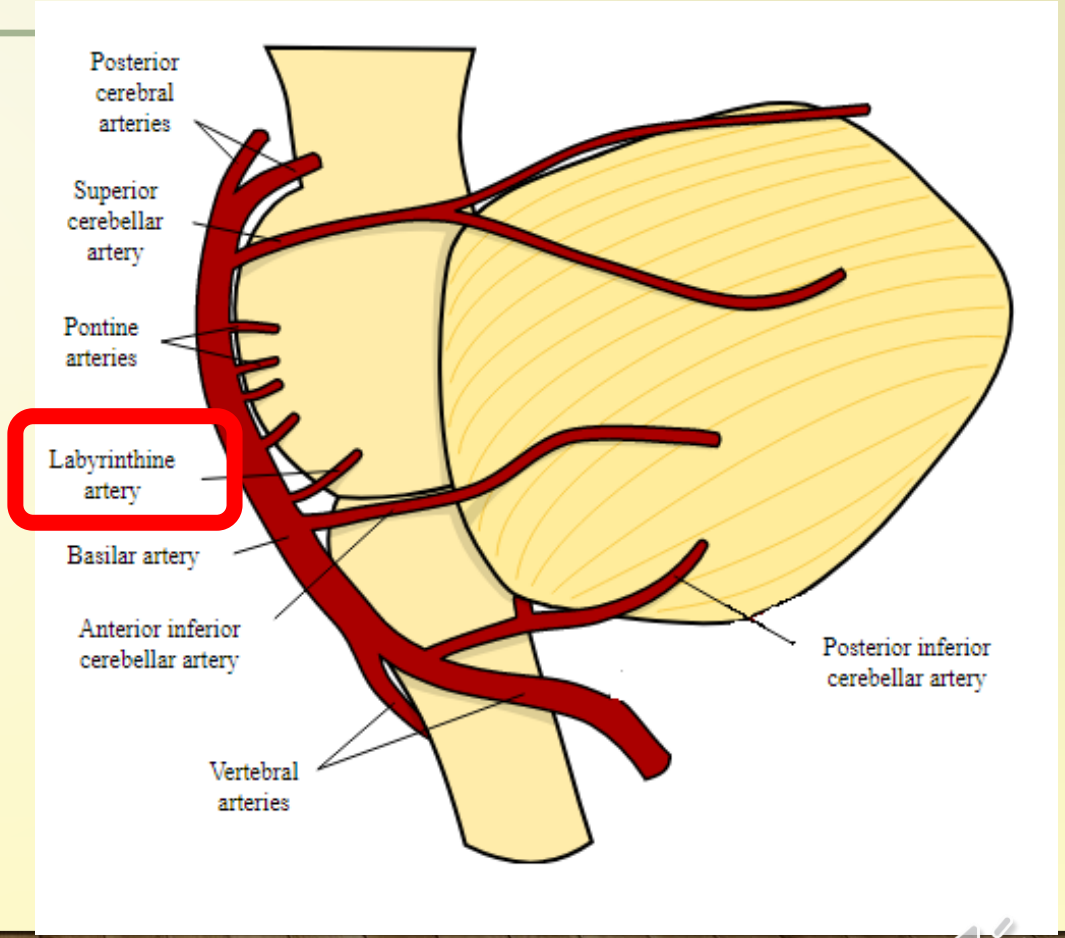
# Anterior inferior cerebellar artery (AICA)

- **AICA** arises from the basilar artery.
- **It runs across the pons**, enters the cerebellopontine angle cistern, and then forms a tight loop before running over the cerebellum.
- **AICA supplies** the lateral tegmentum of the lower two thirds of the pons and the ventrolateral cerebellum.



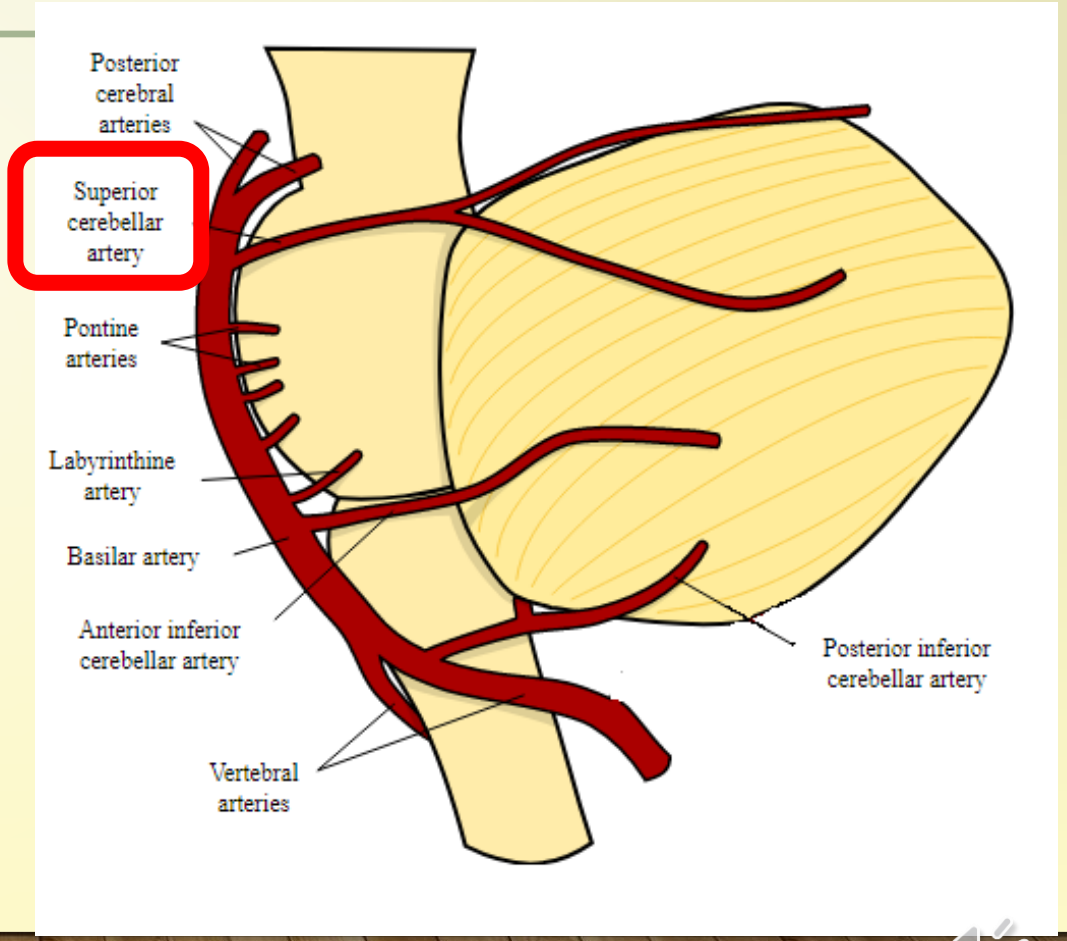
# The internal auditory artery (labyrinthine artery)

- The labyrinthine artery, is a long and slender artery.
- It is the main arterial supply to the vestibular apparatus and cochlea.
- It also vascularizes the facial (VII) and auditory (VIII) cranial nerves.



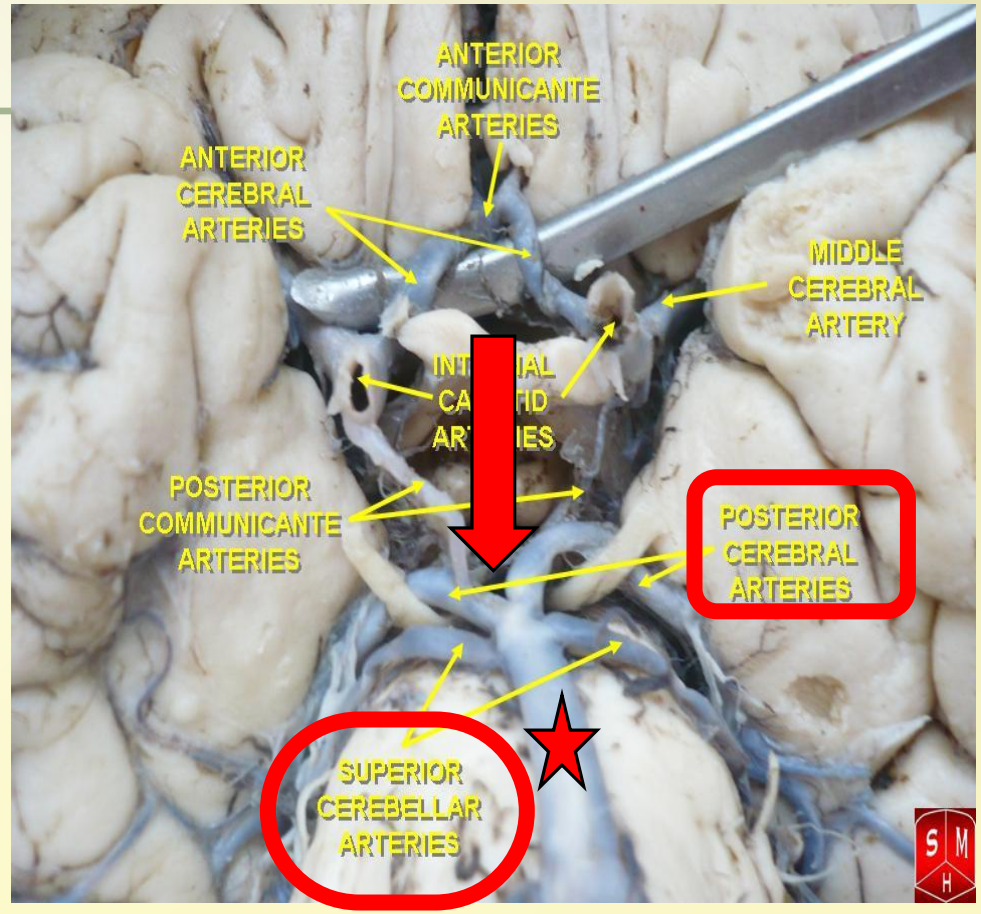
# Superior cerebellar artery (SCA)

- It arises from the upper part of the basilar artery and runs backwards to reach the superior surface of the cerebellum.
- The SCA supplies the superior cerebellum (above the great fissure), superior and middle cerebellar peduncles, and midbrain.



# Posterior Cerebral Artery (PCA)

- **PCA arises from** the termination of the basilar artery and curves backwards round the lateral aspect of the midbrain.
- **As it curves round the midbrain**, it is separated from the superior cerebellar artery by the oculomotor and trochlear nerves.
- **Its terminal part runs on the medial** surface of the occipital lobe. and here it lies in the calcarine fissure.
- **It ends by dividing** into 2 terminal divisions: one runs in the parieto-occipital sulcus and the other continues in the calcarine sulcus to the occipital pole.



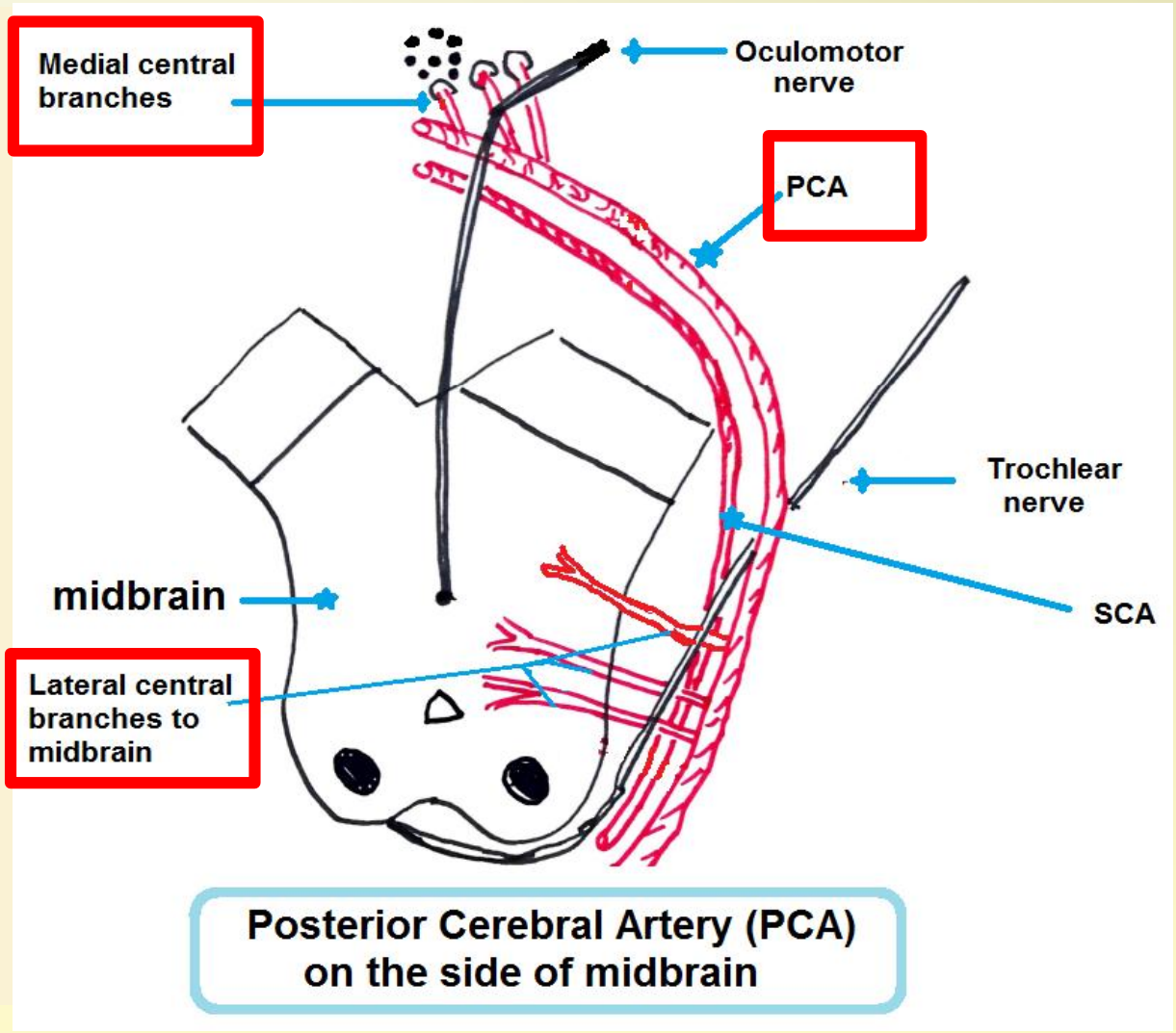
# Posterior Cerebral Artery (PCA)

**PCA has the following branches:**

- Medial and lateral central branches.
- Cortical branches
- Choroidal arteries.

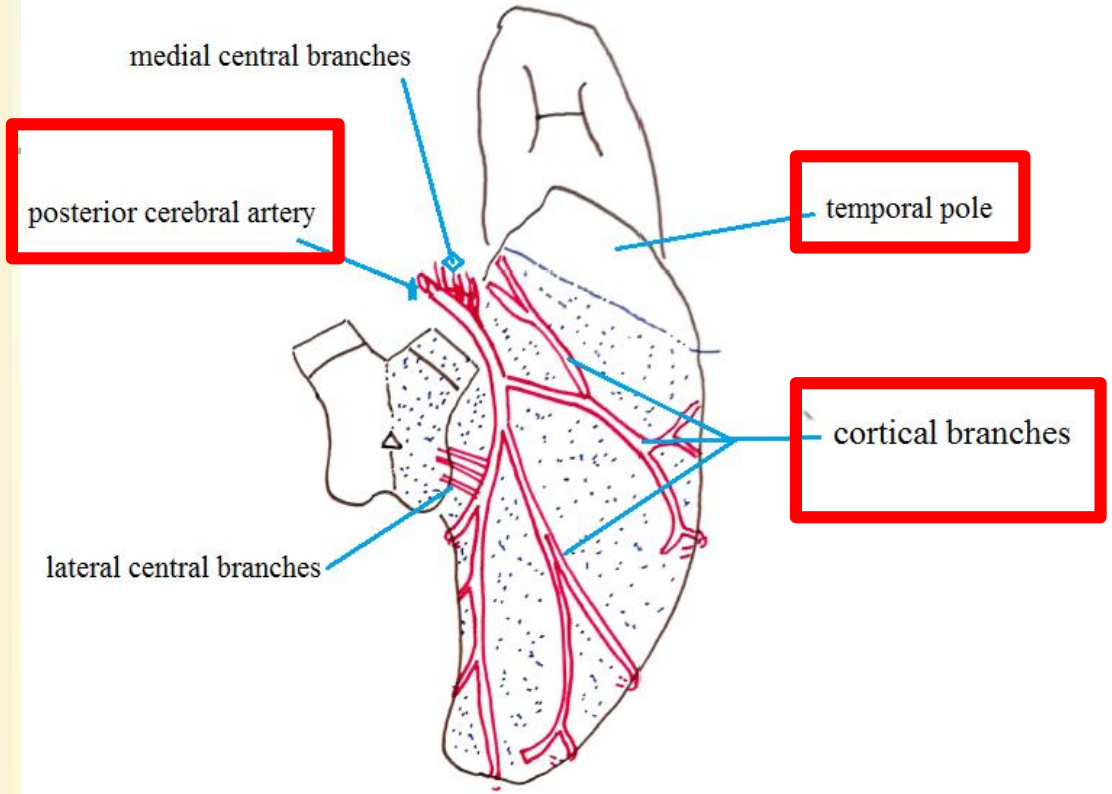
➢ The medial central branches pierces the posterior perforated substance to reach the thalamus and hypothalamus.

➢ The lateral central branches pierce the latera aspect of the midbrain to supply the cerebral peduncle.



# Posterior Cerebral Artery (PCA)

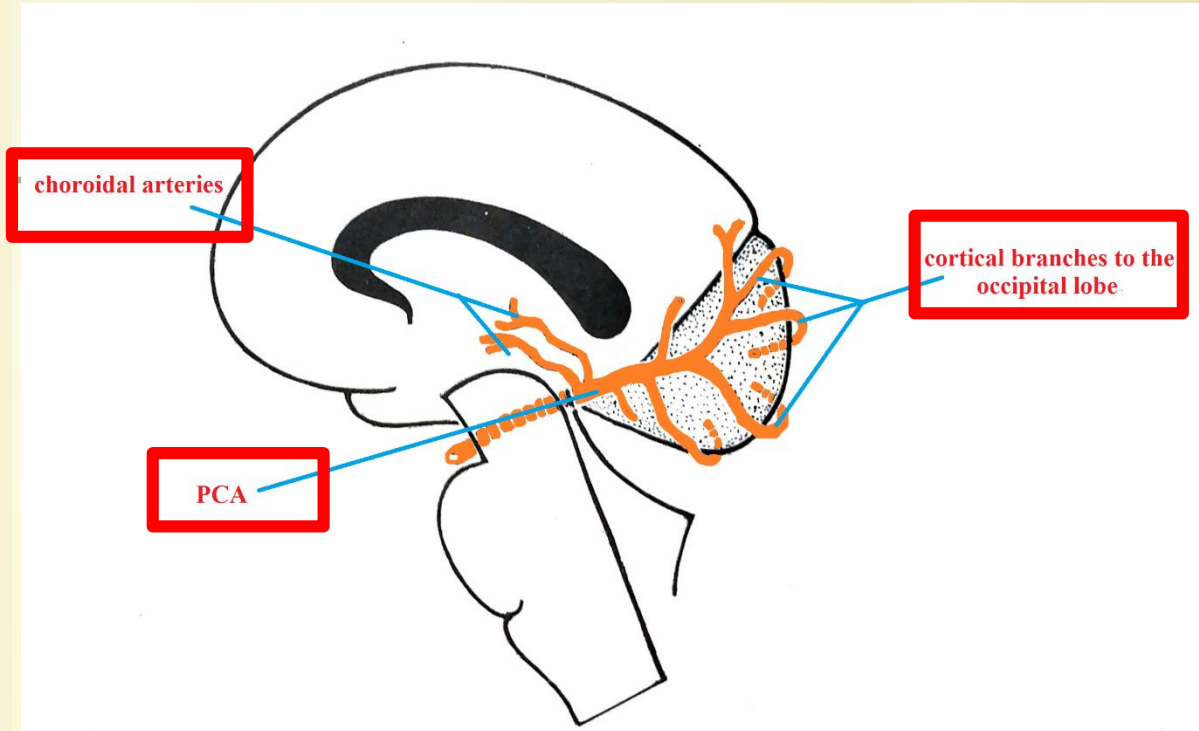
- Cortical branches.
  - Supply the tentorial surface of the brain except the temporal pole.
  - Supply the cortex of the whole occipital lobe
  - They also extend laterally to supply the lowermost one finger's breadth of the lateral surface of the temporal lobe.




Posterior Cerebral Artery on the Inferior Surface of Cerebral Hemisphere

# Posterior Cerebral Artery (PCA)

- Choroidal arteries.
  - supplies the choroid plexuses of the third and lateral ventricles




Posterior Cerebral Artery on the Medial Surface of Cerebral Hemisphere

تمت بفضل الله

# Thank You