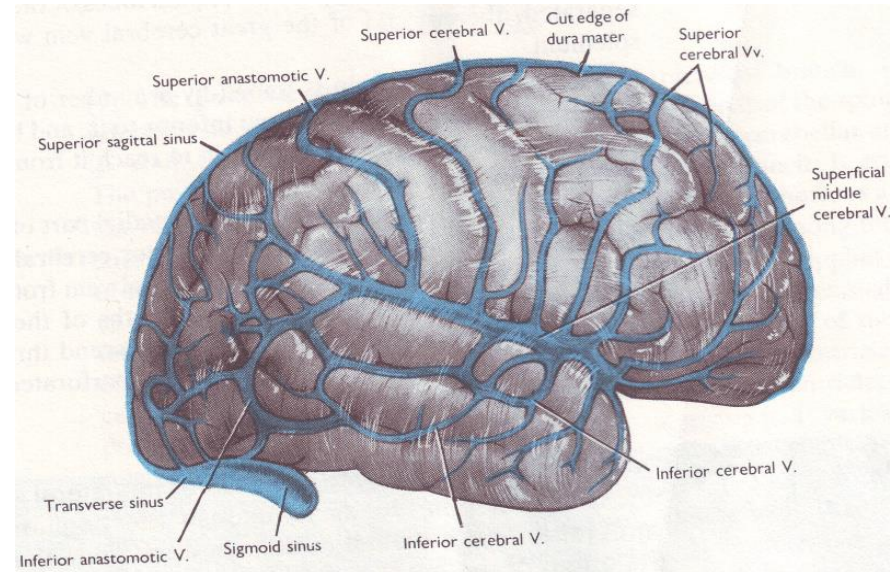


# **Brain blood circulation**

**Prof . Talib jawad kadhim**

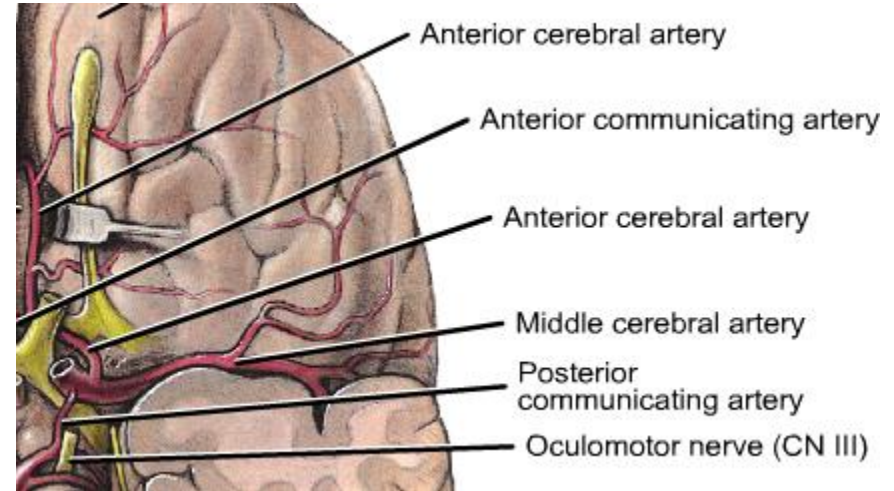
# Blood vessels of the brain

- Veins are so thin so unvisible unless filed with blood.
- **Cerebral veins** are on the surface of the hem.
- Piers dura and arachnoid to join venous sinuses.



# Internal carotid artery

- Go to the lateral to optic chiasma (vallecula) : small branches :
- Posterior communicating artery ; join posterior cerebral artery .give supply to hypophysis, optic tract, and two crus.
- Anterior choroid artery : to crus cerebri, choroid plexus in inferior of lateral ventricle

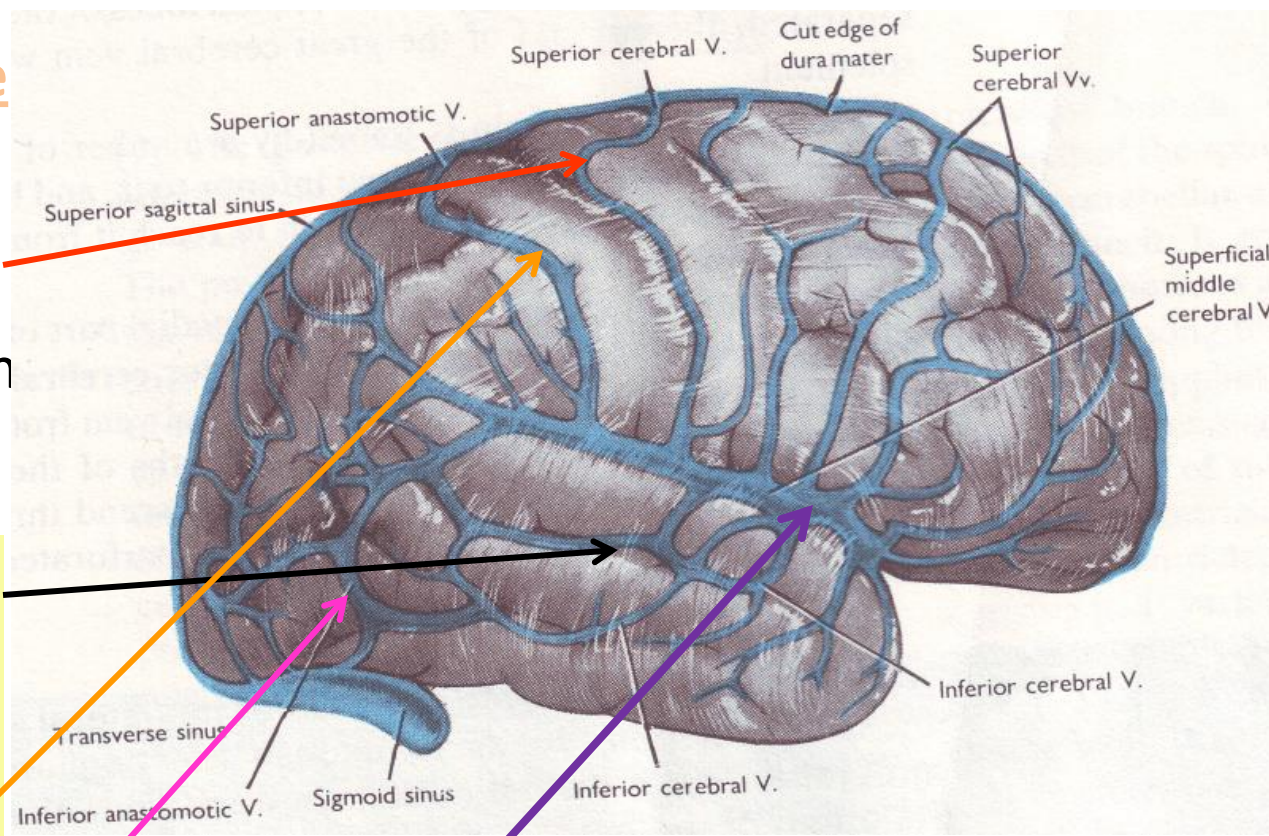


# □ Veins of the superolateral surface

∴

= **superior cerebral veins**: anterior and posterior converge on Superior Sagittal sin.

= **inferior cerebral veins**: converge to the superficial middle cerebral vein and transverse sinus

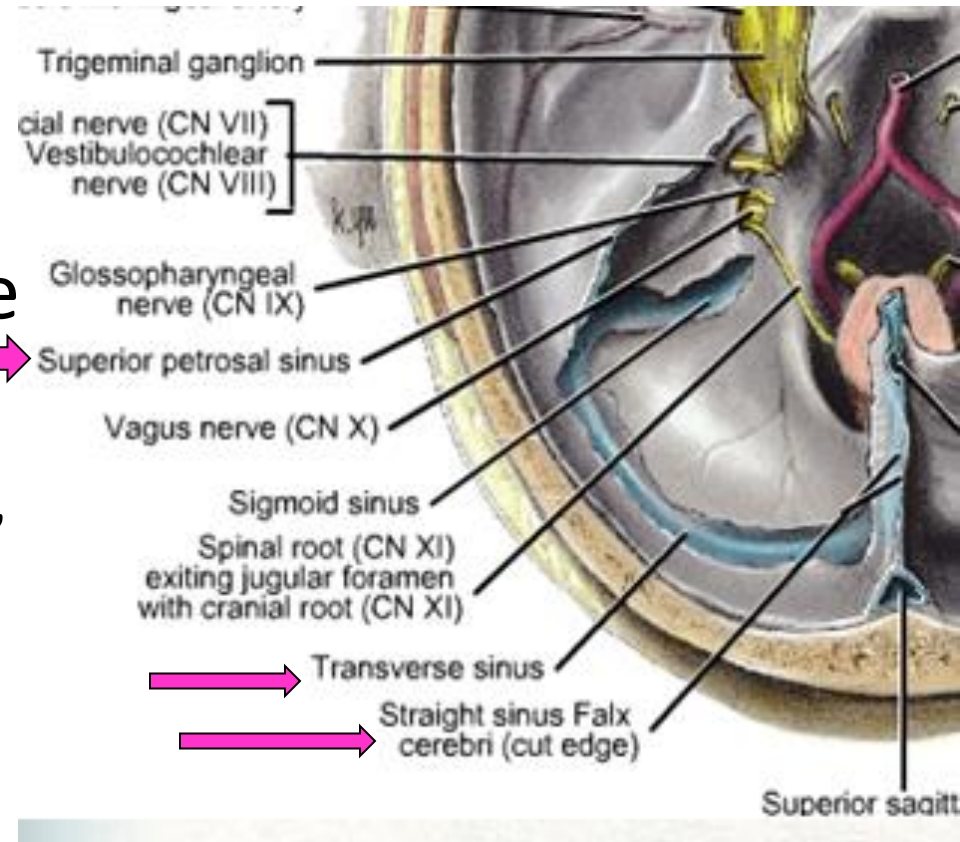


= **superficial middle cerebral vein**: between lips of the of the lateral sulcus. Medially ends in the cavernous sinus. Posteriorly communicates to the superior Sagittal sinus by **superior anastomoic veins** and to **transvers sinus** by **inferior anastomotic vein**

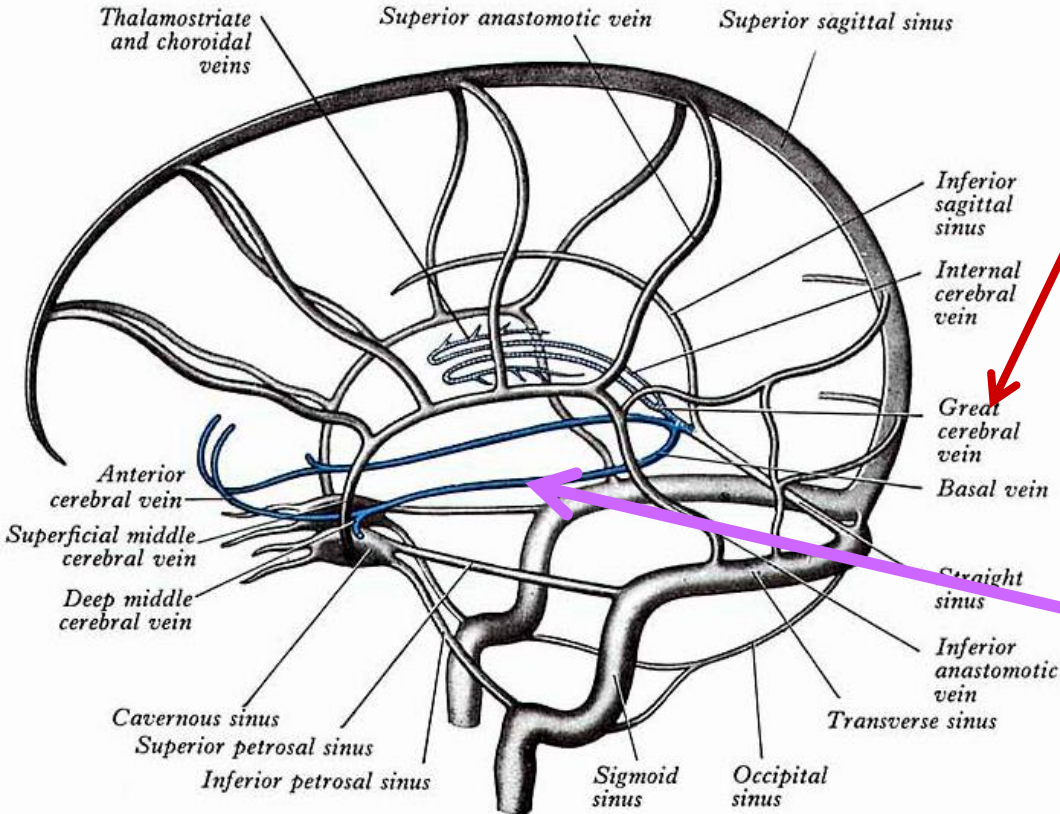


## □ Veins of the inferior surface :-

- 1- anteriorly drain to the **deep middle cerebral vein**
- 2- posteriorly drain to the **basal vein** and to superior petrosal, straight, and transverse sinuses



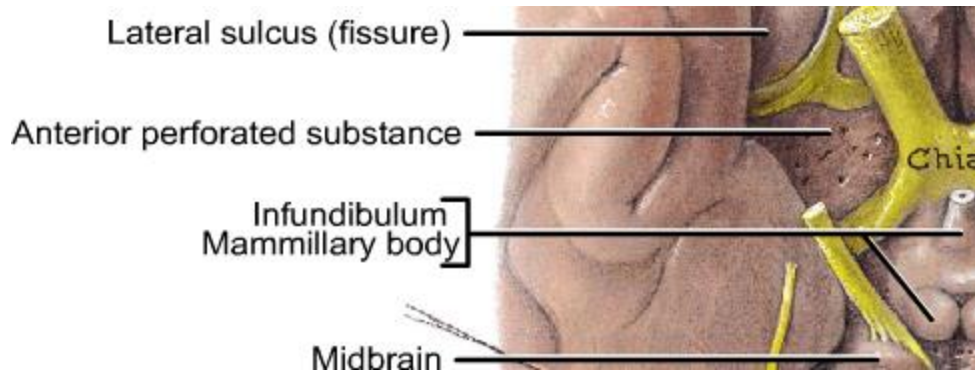
# □ Veins of the medial surface :-

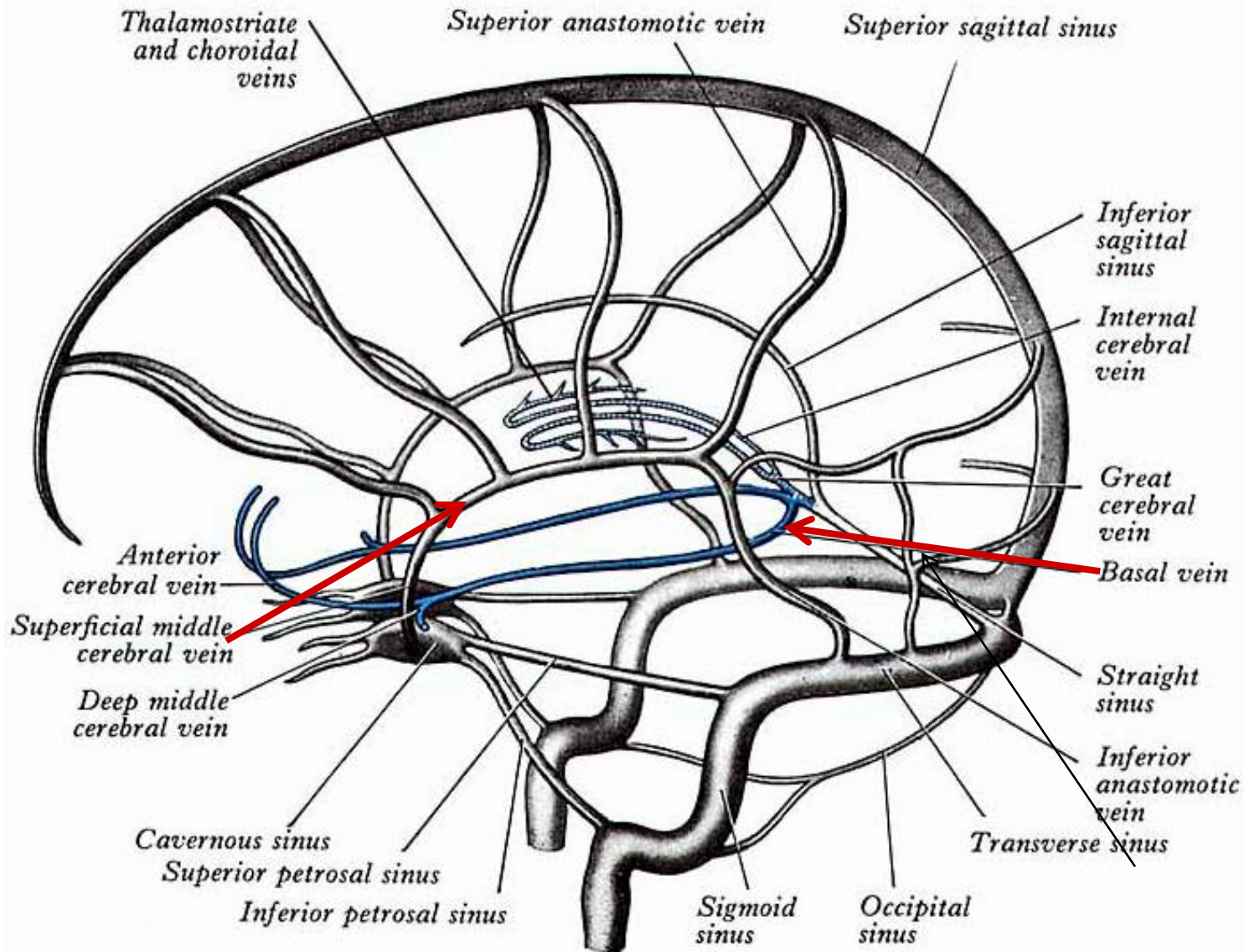


❖ **Great cerebral vein :**  
emerge from below of  
splenium of corpus calosum  
join inferior Sagittal sinus  
and continued as straight  
sinus

❖ **Basal vein:** deep to lateral  
sulcus formed by:

- Anterior cerebral
- Deep middle cerebral vein
- Straight vein descend from  
substance of the brain  
through anterior perforated  
substance



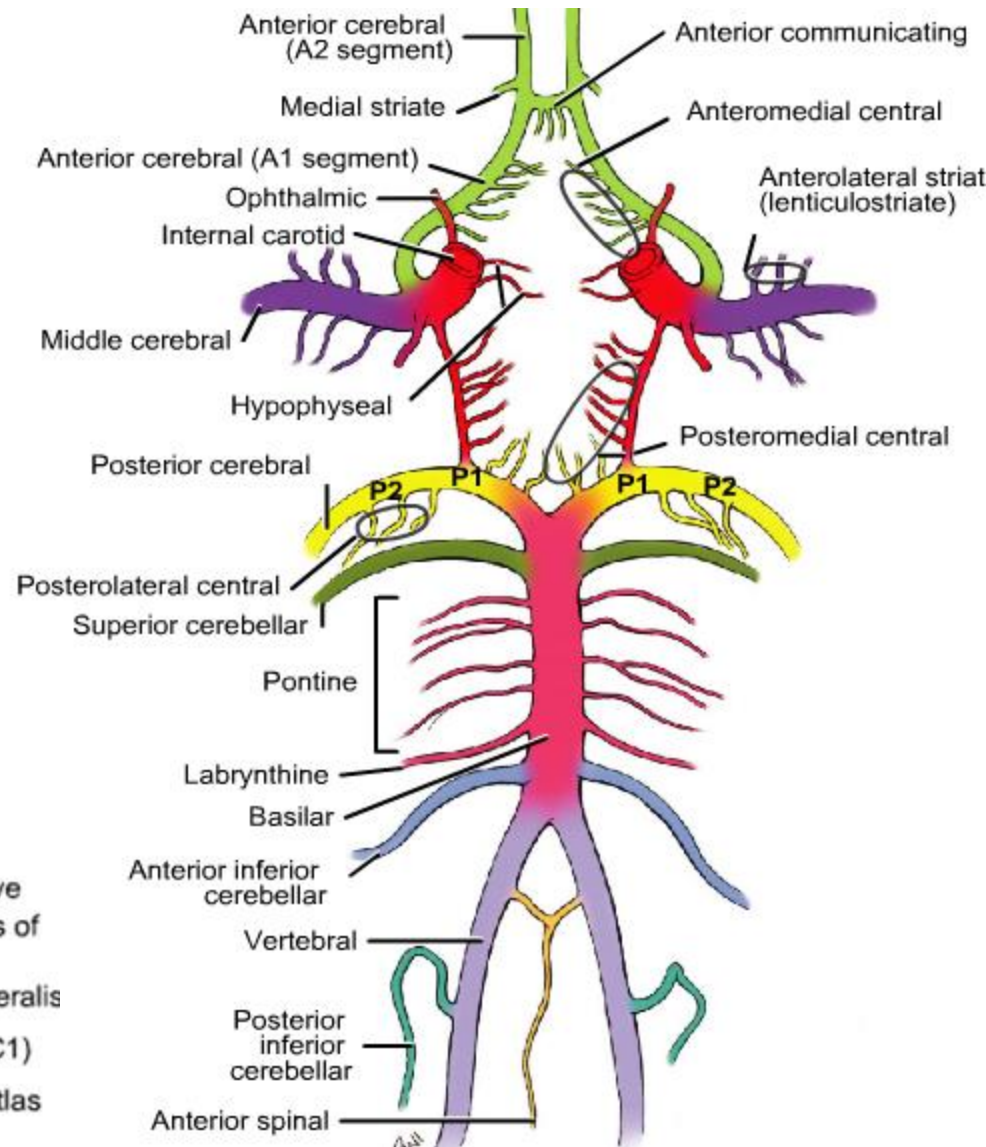
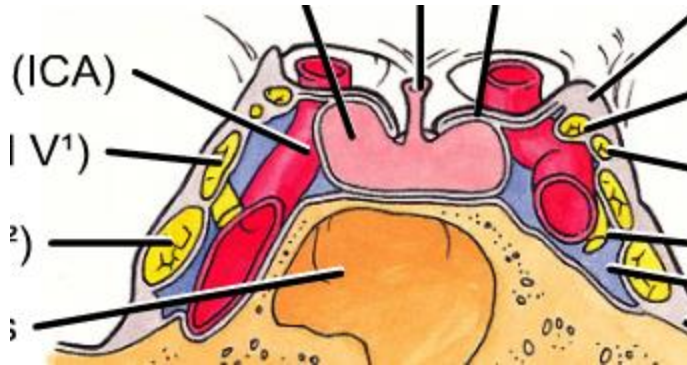


Schema of the venous sinuses of the dura mater and their connections with the cerebral vein: The more deeply placed cerebral veins are shown in blue and those inside the brain are shown in interrupted blue.

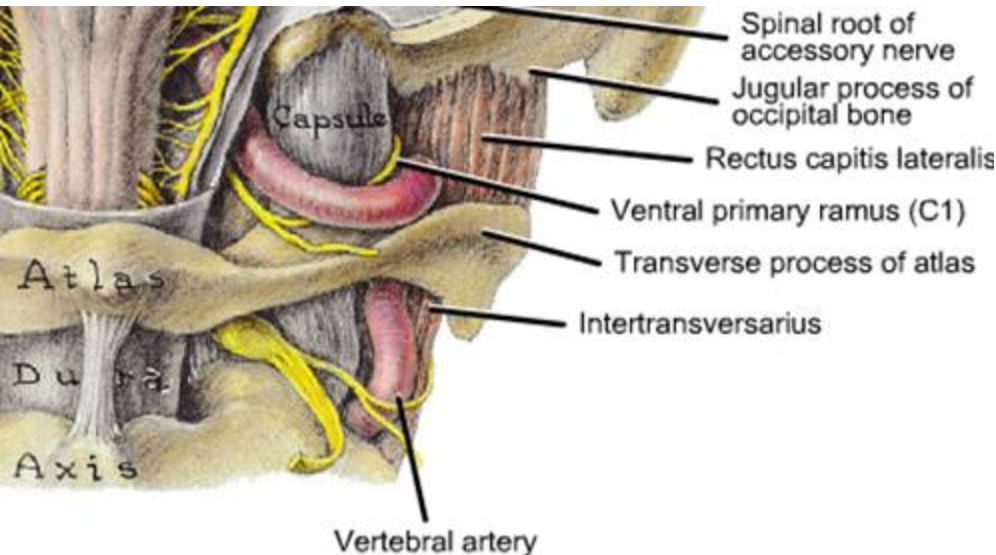


## Arteries of the brain

- Arteries of the brain: two internal carotid



two vertebral arteries

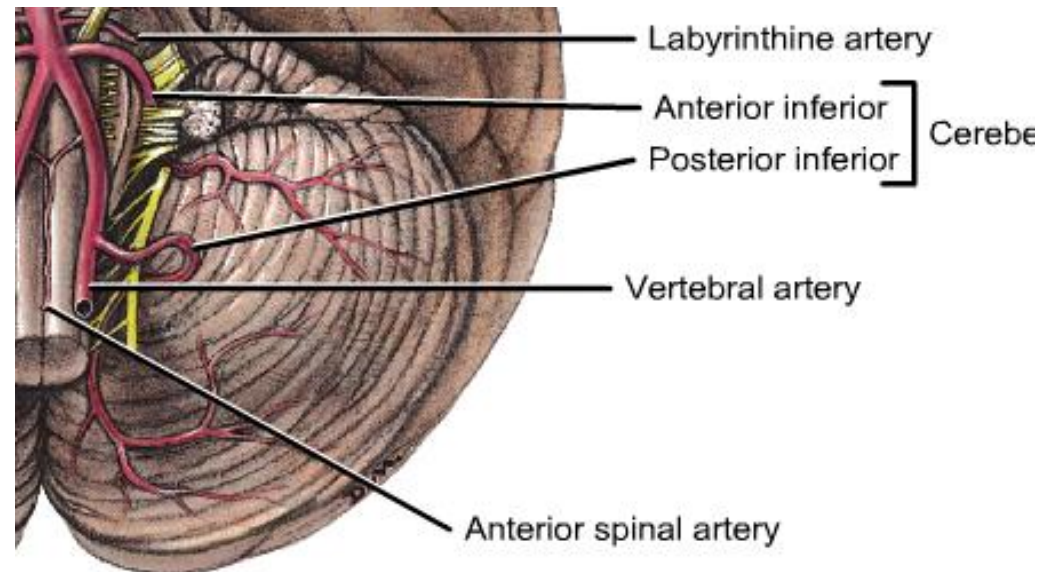
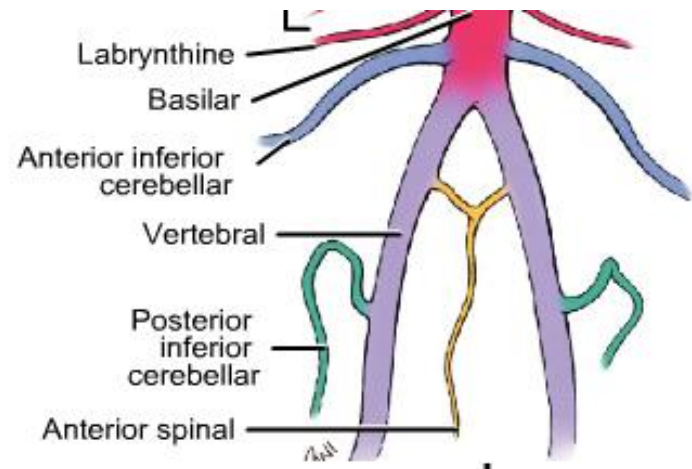


The two vertebral arteries of different caliber



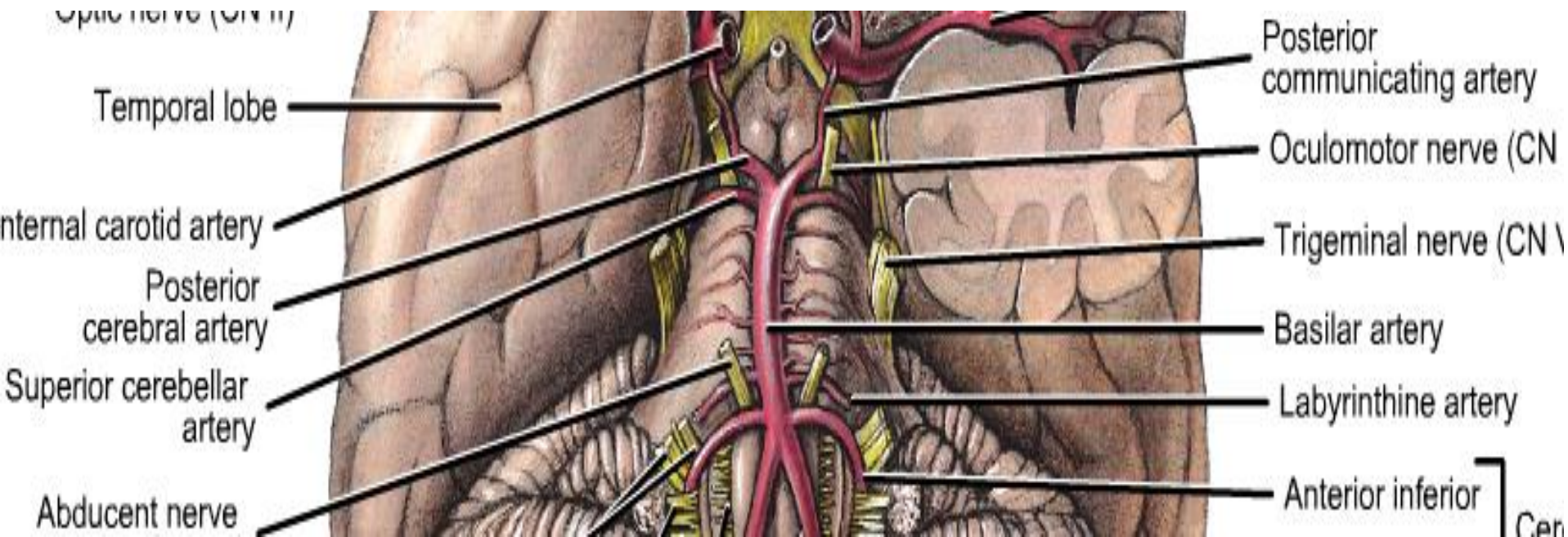
## Intra cranial branches

- Posterior spinal arteries : 2 ; arises from posterior inferior cerebellar artery
- **posterior inferior cerebellar arteries: from vertebral arteries : tortuous on side of medulla oblongata**
- **Anterior spinal artery: union of a branches from each vertebral artery on ventral surface of the medulla oblongata**



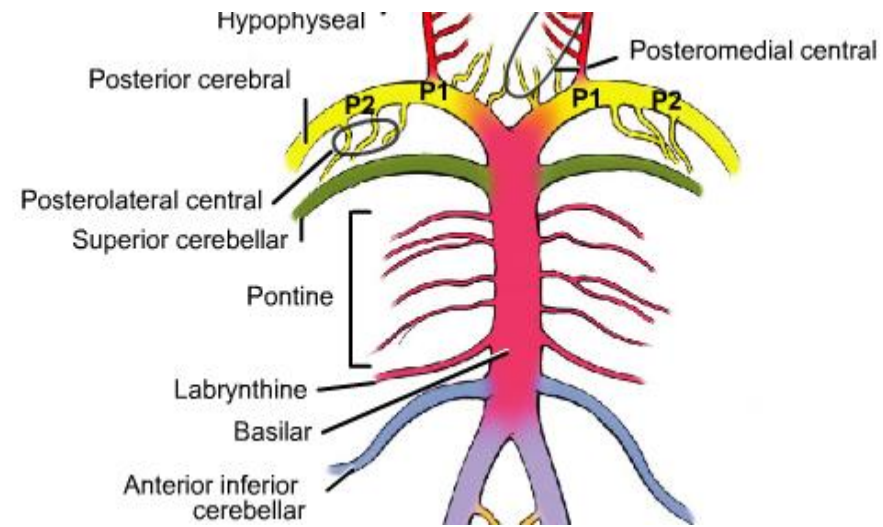
## □ Basilar artery :

- formed by 2 vertebral arteries
- At inferior border of the pons
- Anteriorly form 2 posterior cerebral arteries
- Lies in cisterna pontis (sub arachnoids space)



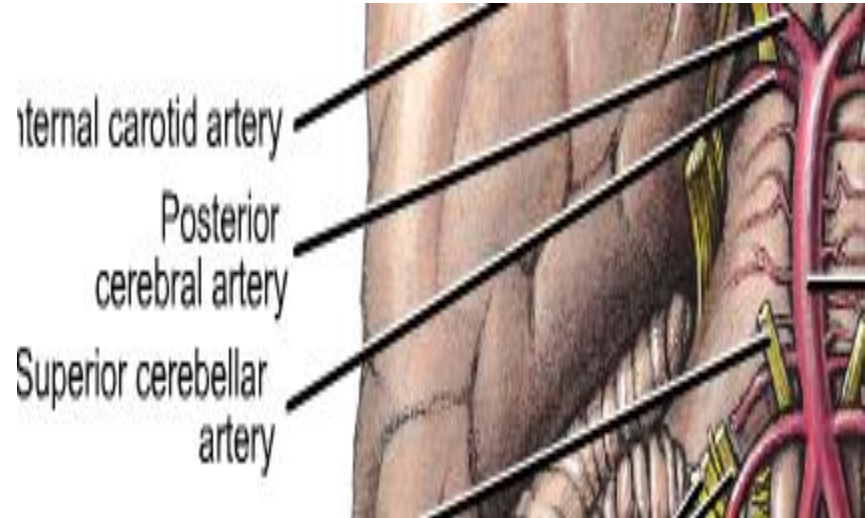
- Branches of the basilar artery :

- **anterior inferior cerebellar: supplies 6-7-8<sup>th</sup> nerves + anterior inferior of cerebellum**
- **labrynthine artery : supply internal ear accompanies the Vestibulocochler nerve + facial nerve**





- **pontine branches**
- **Superior cerebellar artery: large, winds superior to the pons and middle cerebral peduncle supplying both + midbrain + superior surface of the cerebellum**

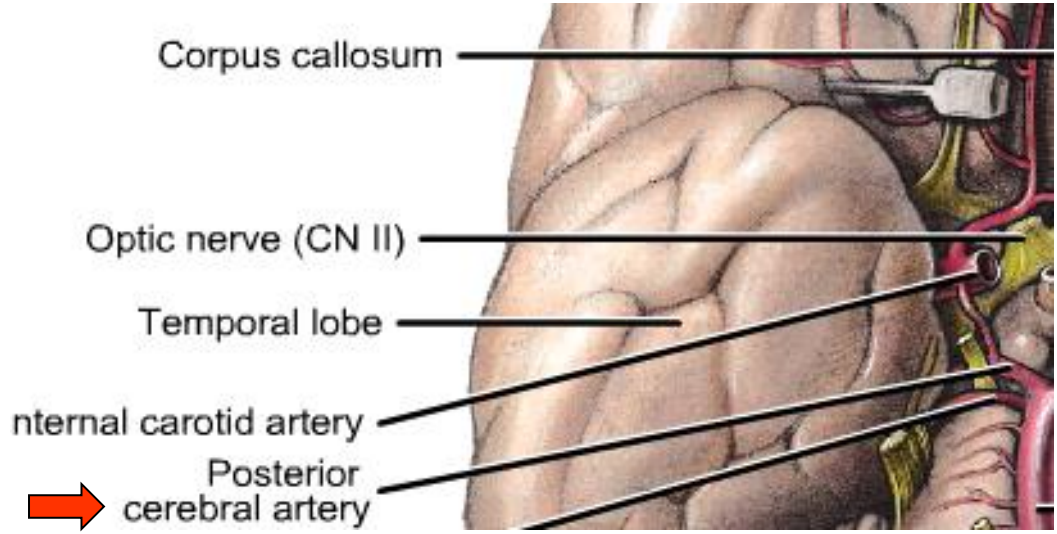
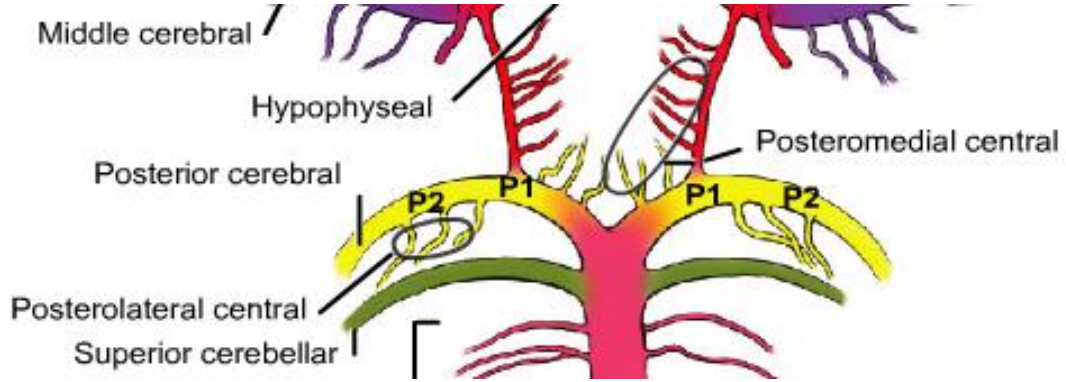


# Posterior cerebral

artery: to the superior border of the pons : send branches into midbrain

(interpeduncular fossa) , branches

- 1- posteromedial central through anterior perforating substance
- 2- posterior lateral central choroidal branches
- 3- cerebral cortex



- Anterior cerebral : communicates the other anterior to optic chiasma
- Middle cerebral: in stem of lateral sulcus
- Circulus arteriosus; posterior communicating, posterior cerebral, anterior cerebral, anterior communicating arteries : lies in the interpeduncular fossa; branches to brain through anterior and posterior perforated substance

