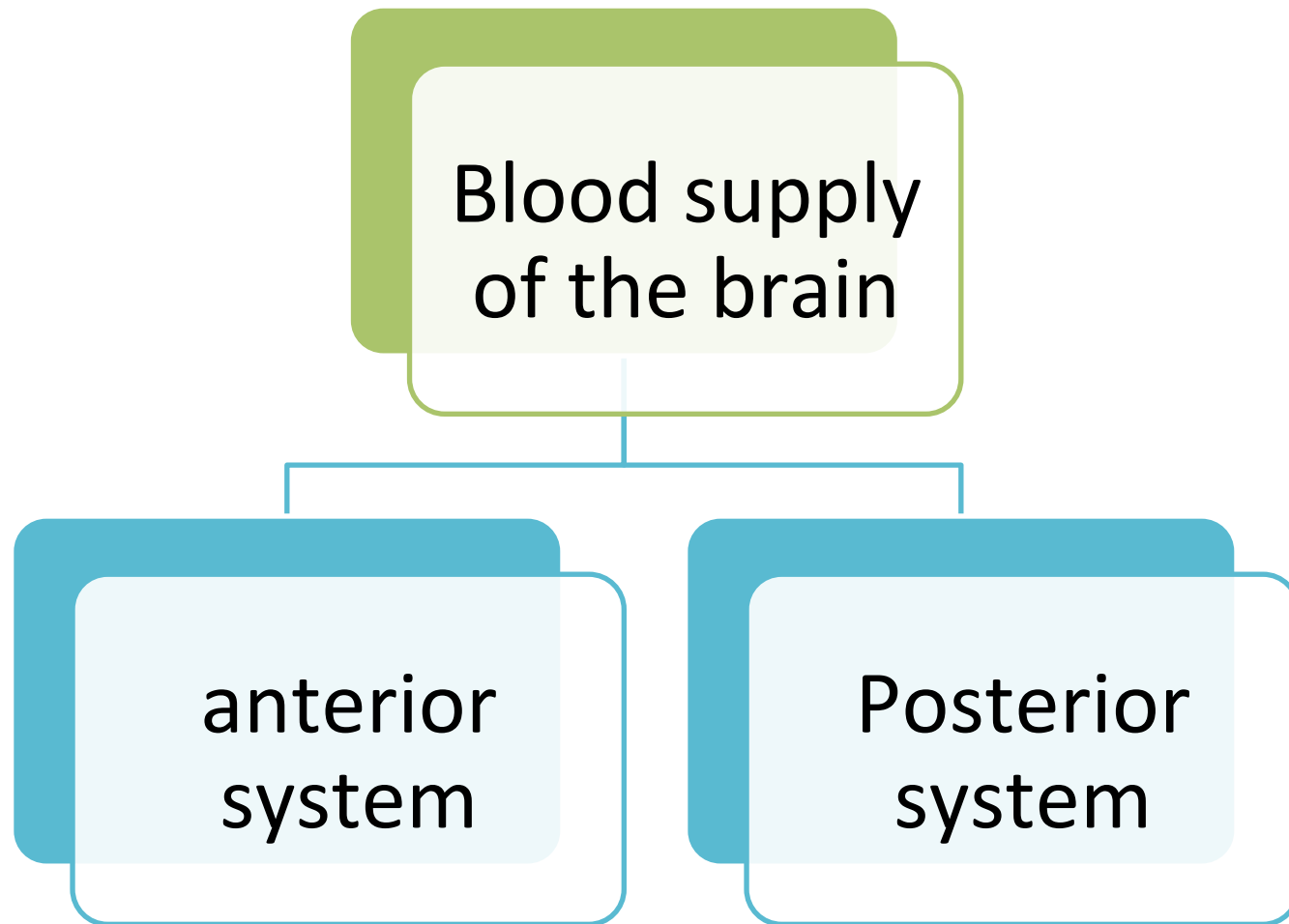


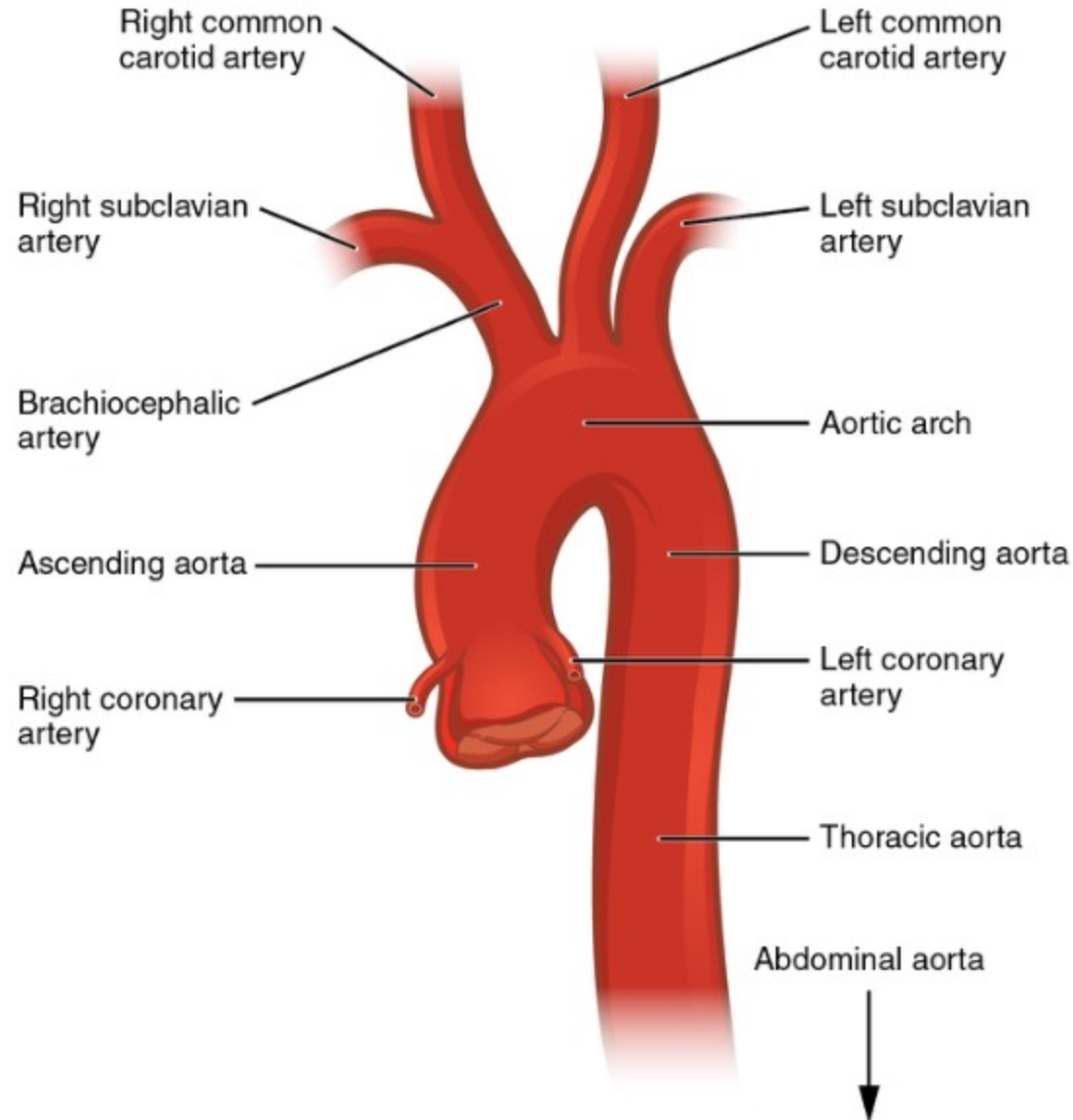


Blood Supply Of The Brain and Spinal cord

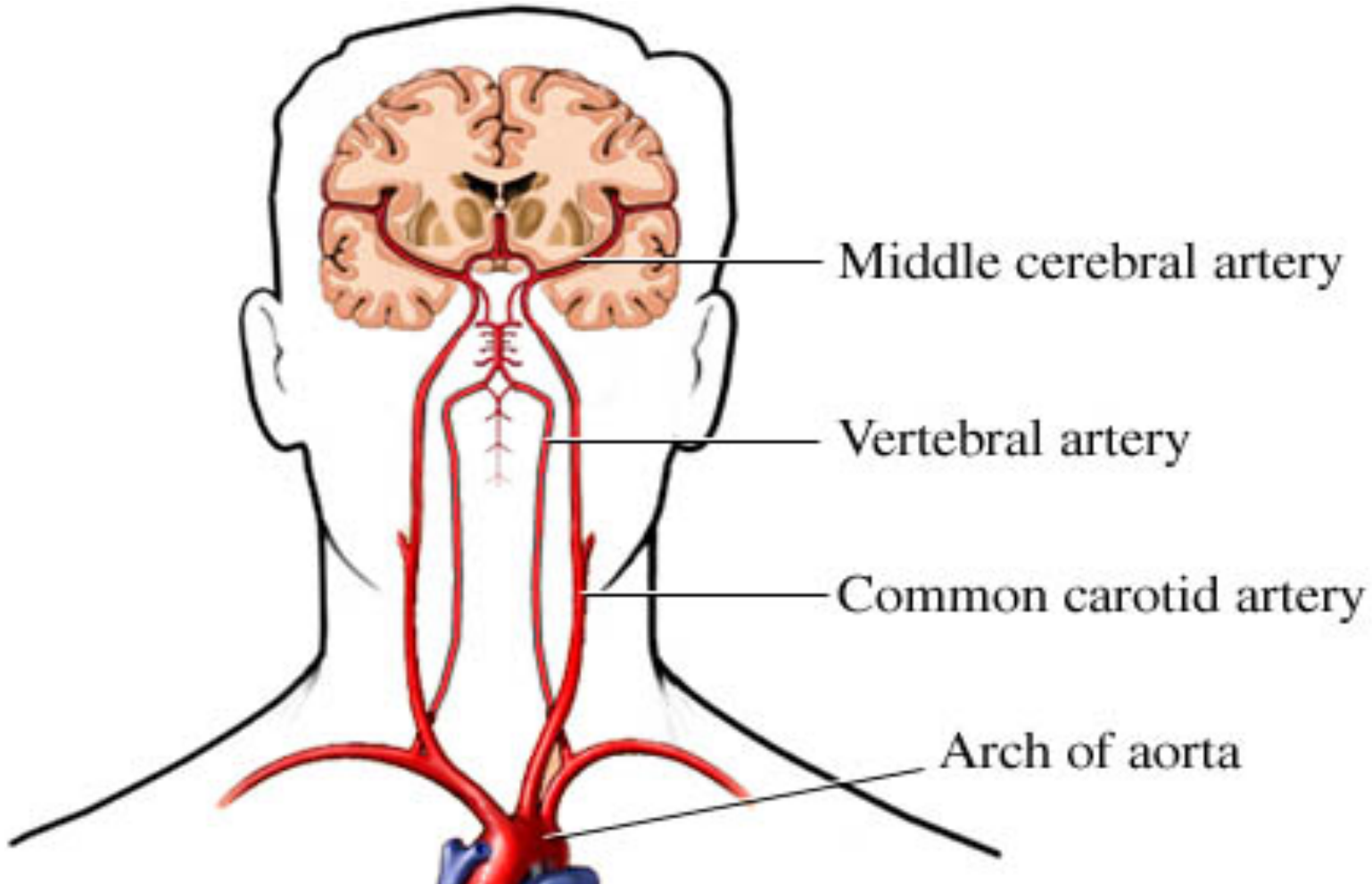
Presented by: Ala'a Alsayed
King Saud Bin Abdulaziz University
for Health Sciences



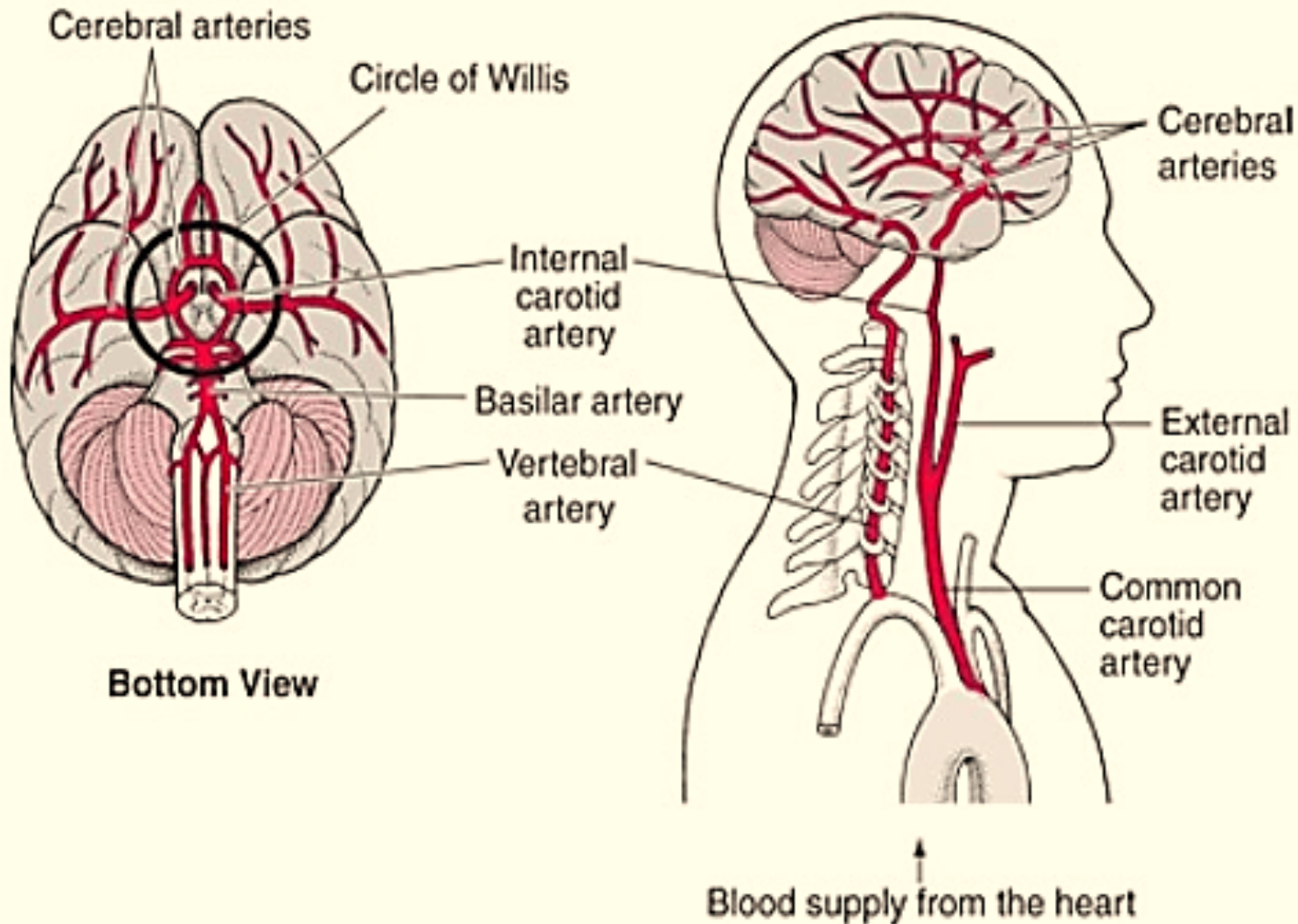
The posterior system

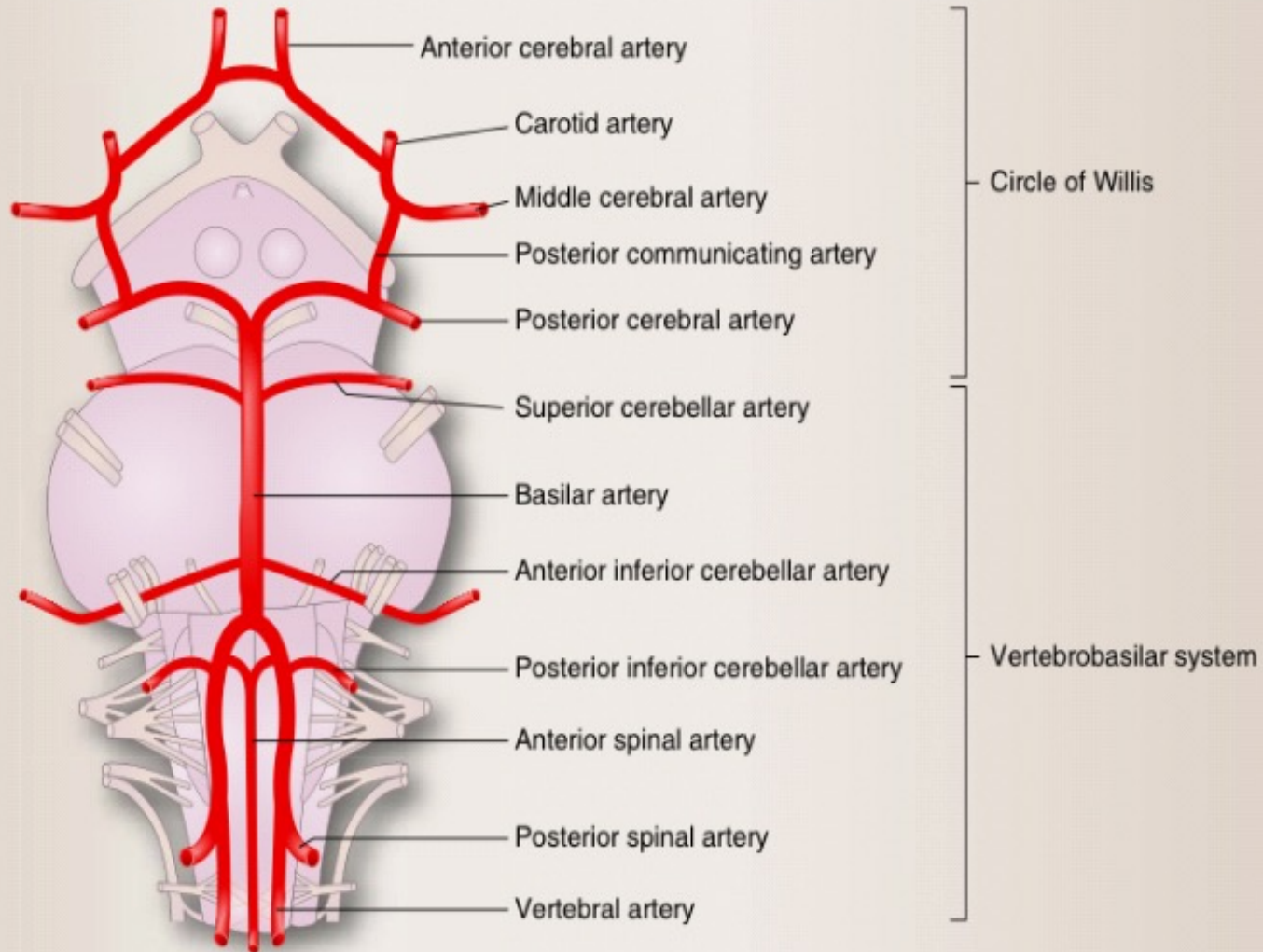


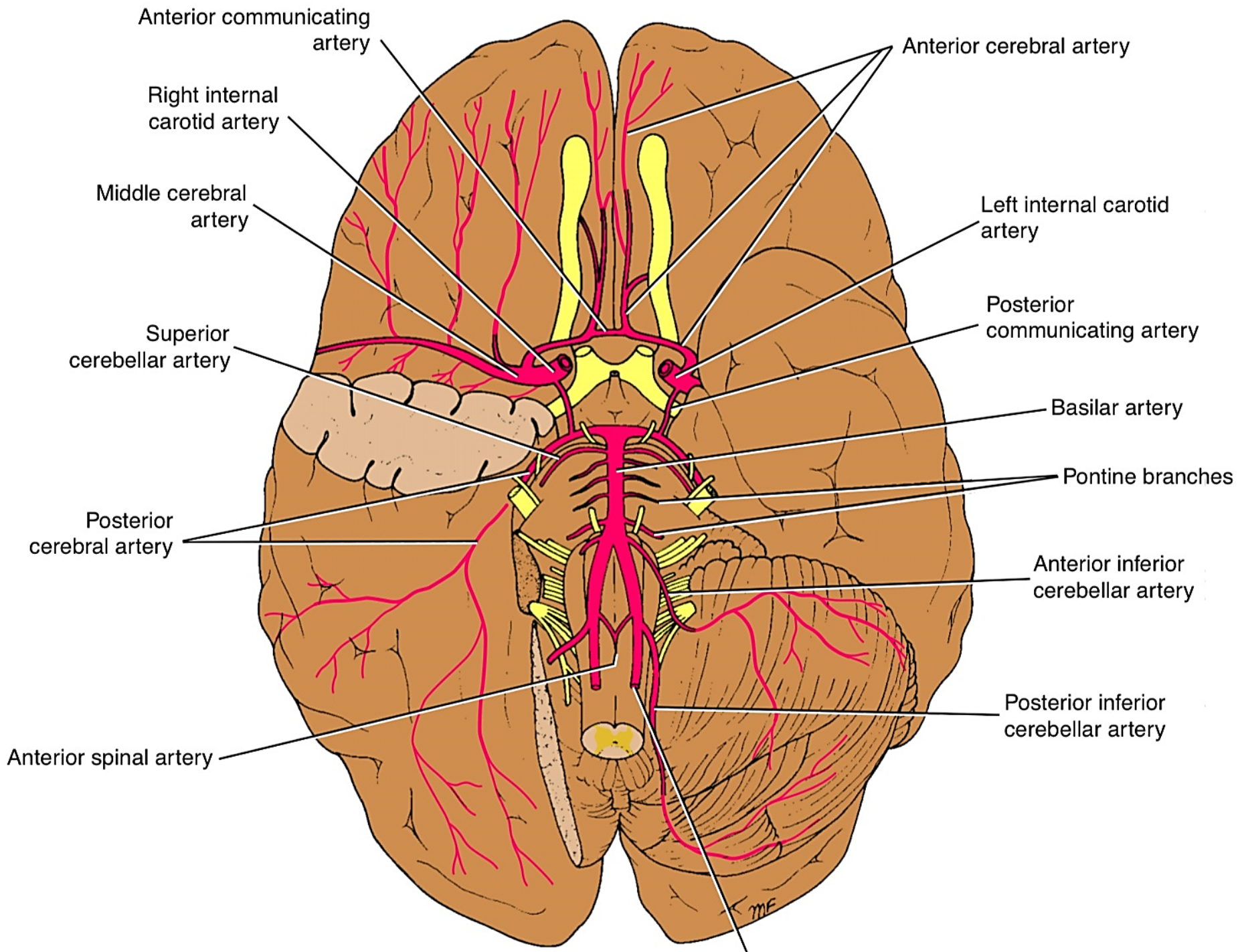
The posterior system



The posterior system









Summary: Branches of the vertebral Arteries

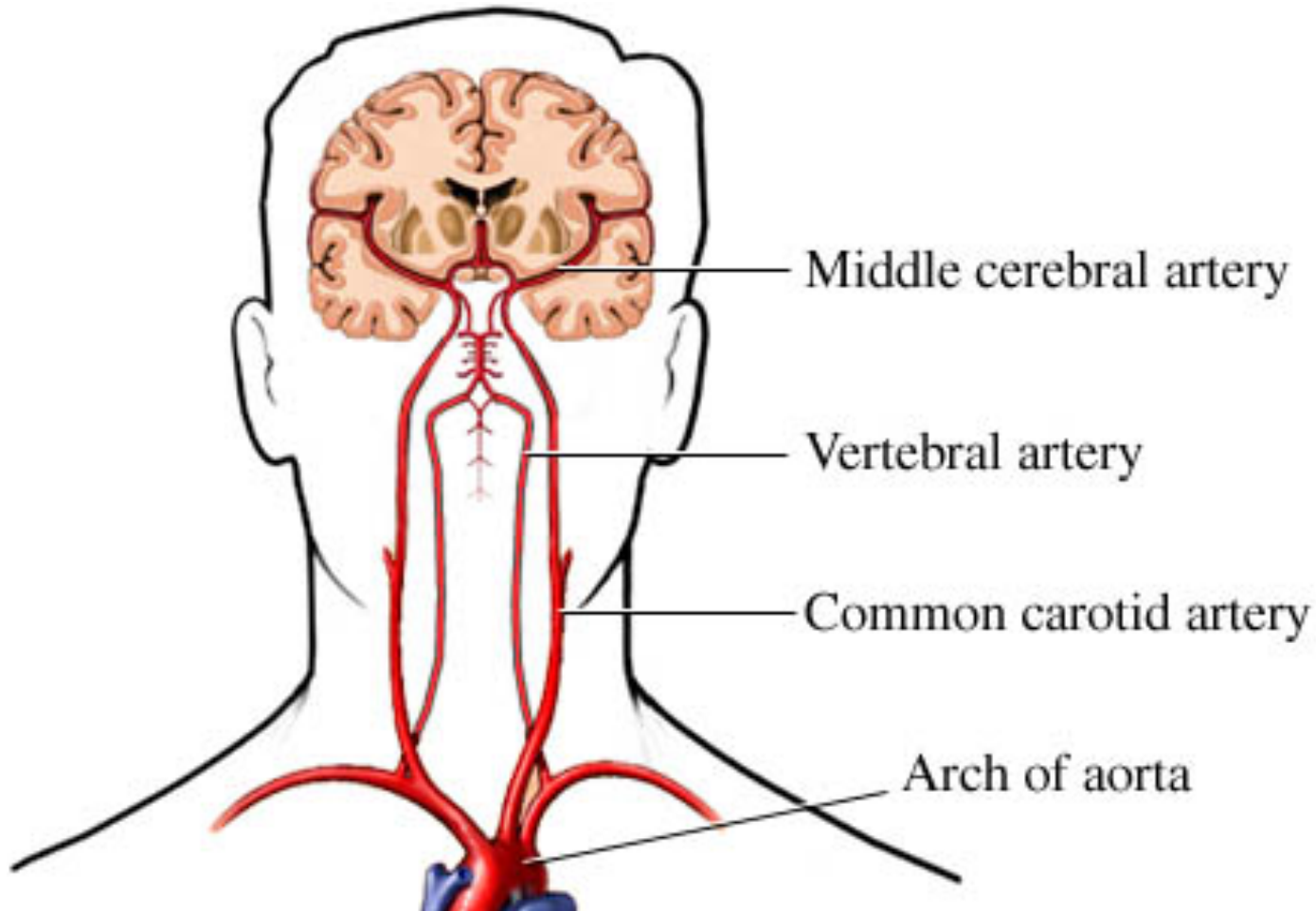
1- The posterior inferior cerebellar artery	2- The anterior spinal artery	3-The posterior spinal artery (2)	4- Medullary arteries.
<ul style="list-style-type: none">• Biggest branch of the vertebral arteries• Supplies the inferior and posterior parts of the cerebellum + lateral parts of the medulla	<ul style="list-style-type: none">• Supplies the anterior two thirds of the spinal cord	<ul style="list-style-type: none">• Supplies the posterior third of the spinal cord• Can be a branch of the posterior inferior cerebellar artery	<ul style="list-style-type: none">• Distributed to different parts of the medulla

Summary: Branches of the basilar Artery

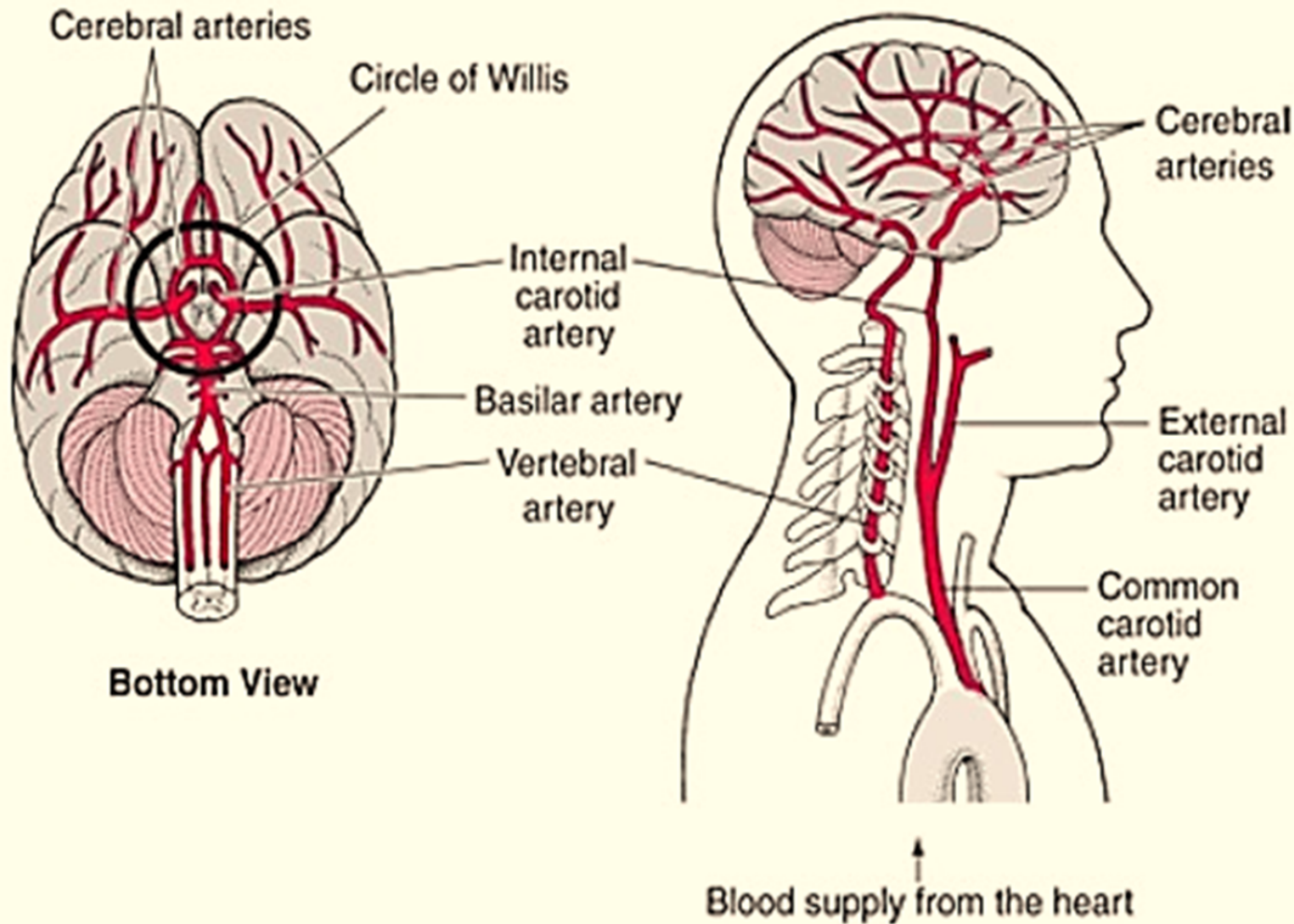


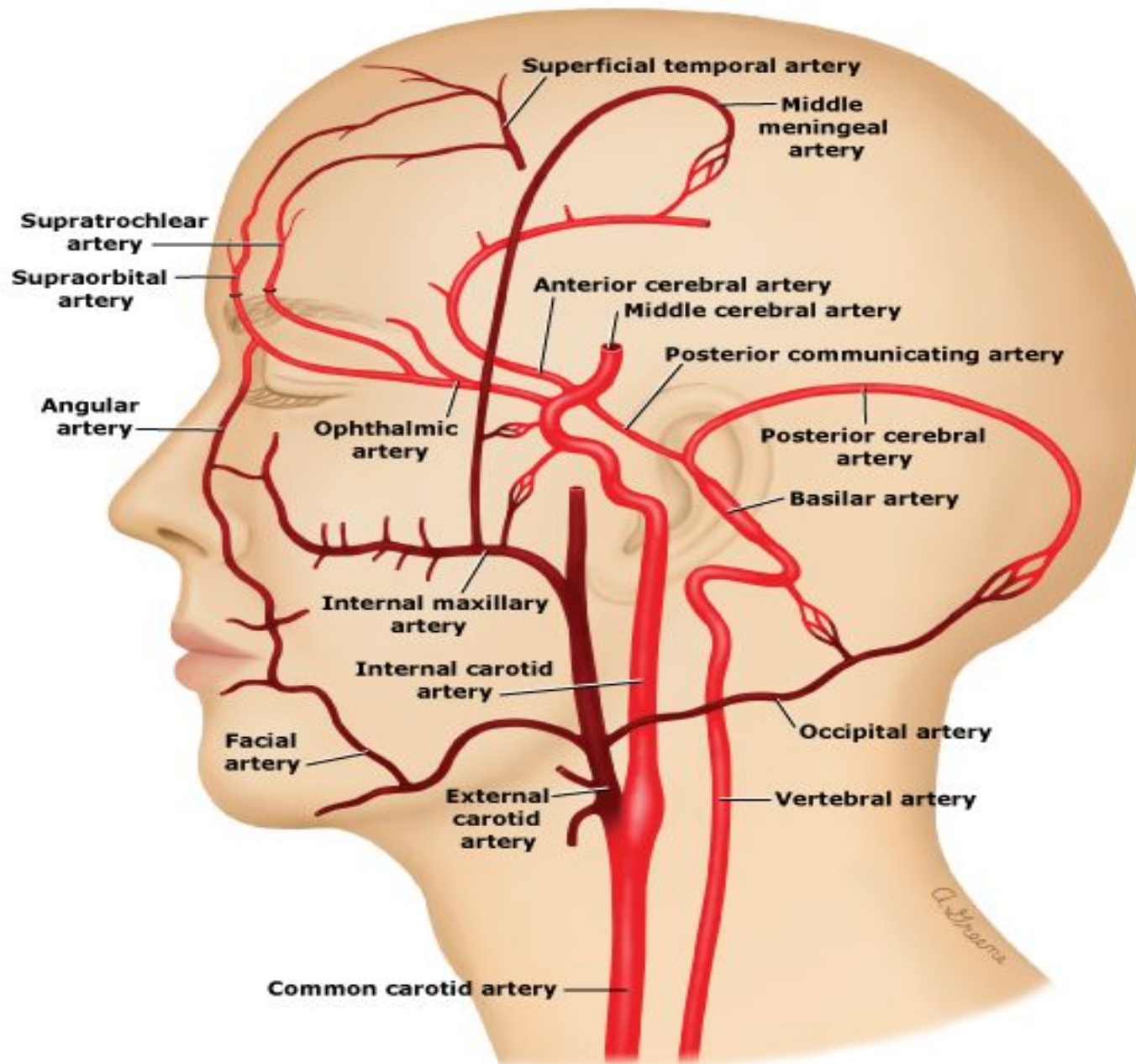
1- The pontine arteries	2- The posterior cerebral Artery	3- the superior cerebellar artery	4- The anterior inferior cerebellar artery
<ul style="list-style-type: none">• Distributed to different parts of the pons	<ul style="list-style-type: none">• A- Cortical branches: supplying the infero-lateral and medial surfaces of the temporal lobes +the lateral and the medial surfaces of the occipital lobe• B- Central branches: supplying the :<ol style="list-style-type: none">1- parts of the thalamus2- the lentiform nucleus3- midbrain4- the medial geniculate bodies	<ul style="list-style-type: none">• Supplies the superior part of the cerebellum and the pons	<ul style="list-style-type: none">• Supplies the anterior and inferior parts of the cerebellum and parts of the pons and medulla oblongata

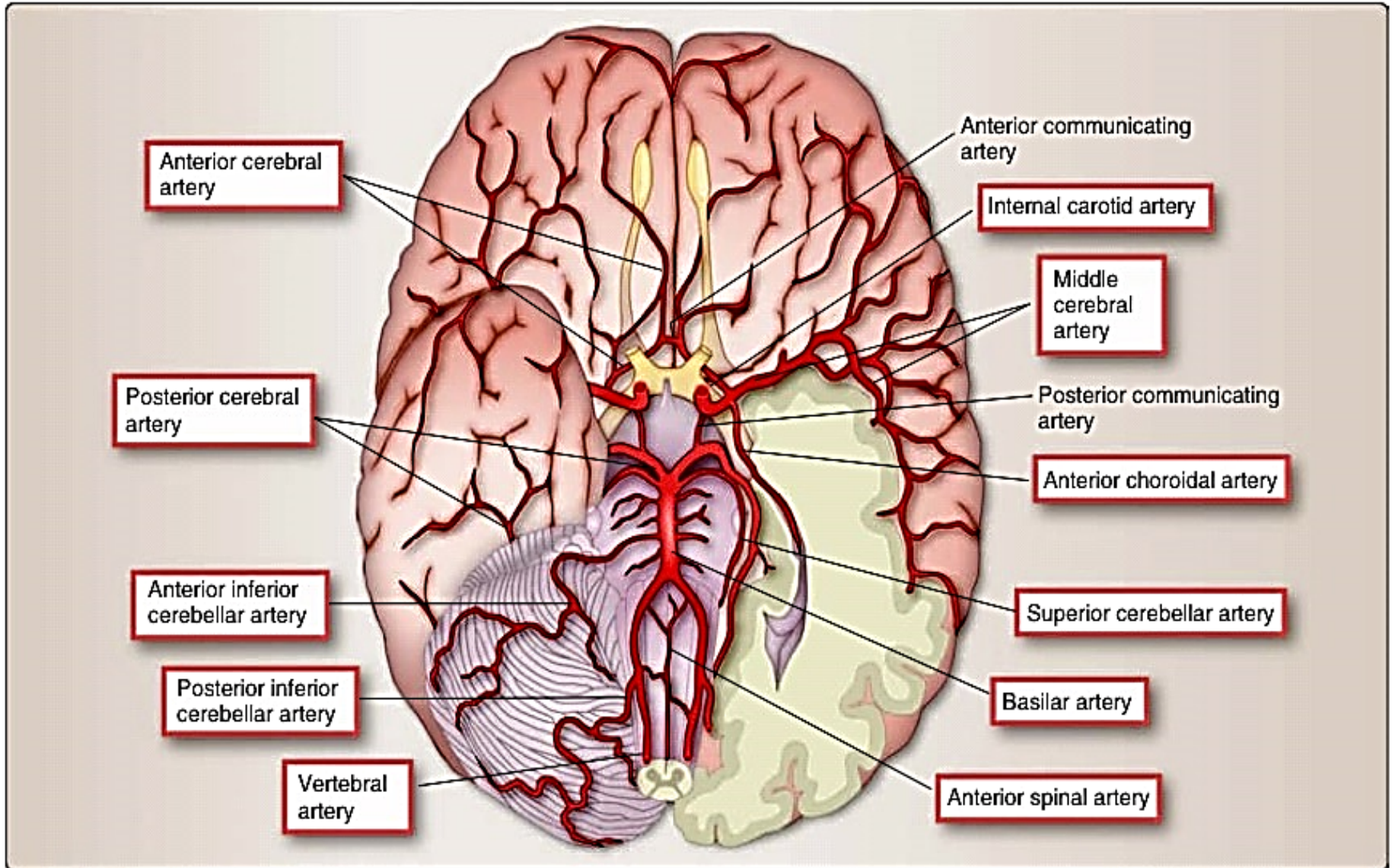
The anterior circulation



The anterior circulation







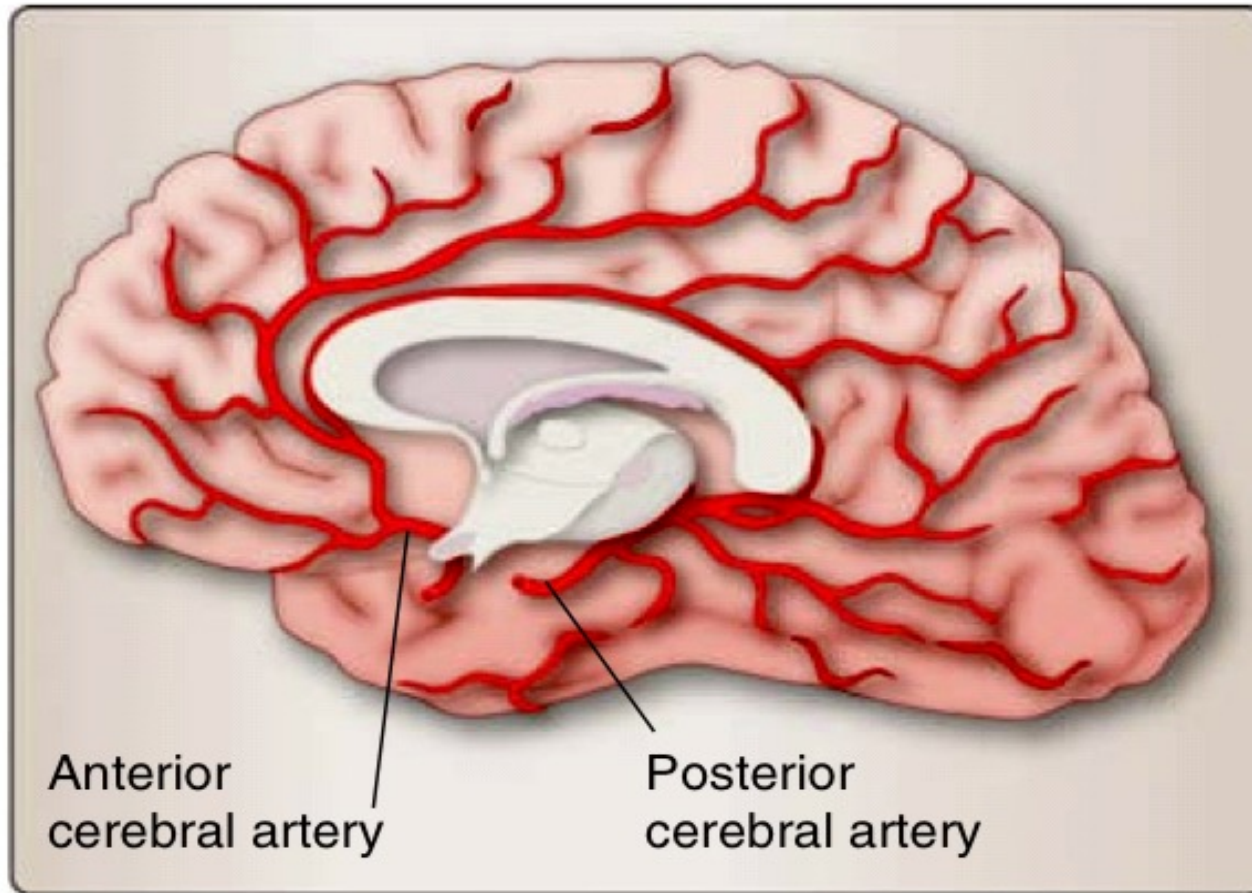
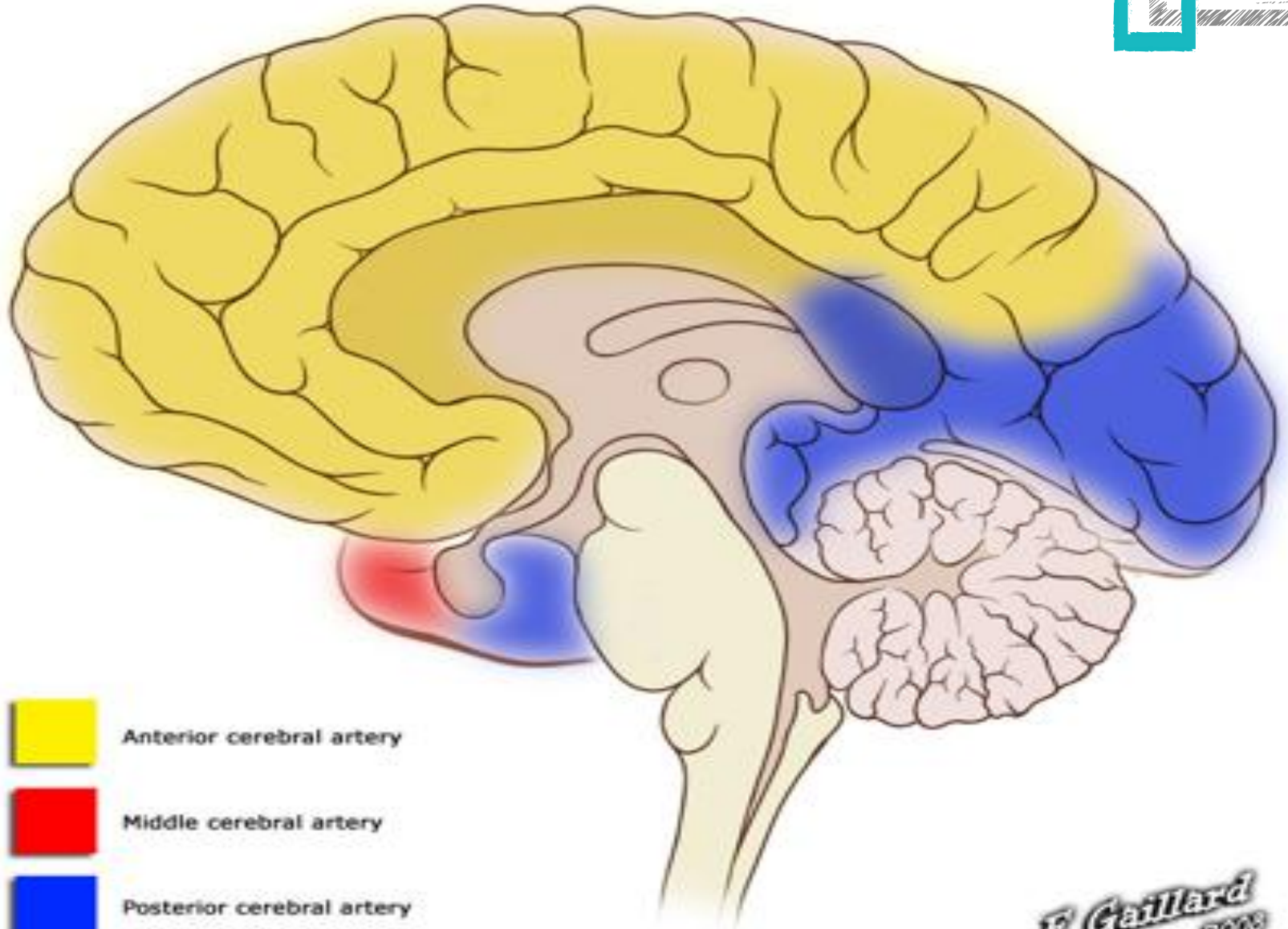





Figure 13.21

The anterior and posterior cerebral arteries on the medial surface of the right cerebral hemisphere.

Cortical vascular territories

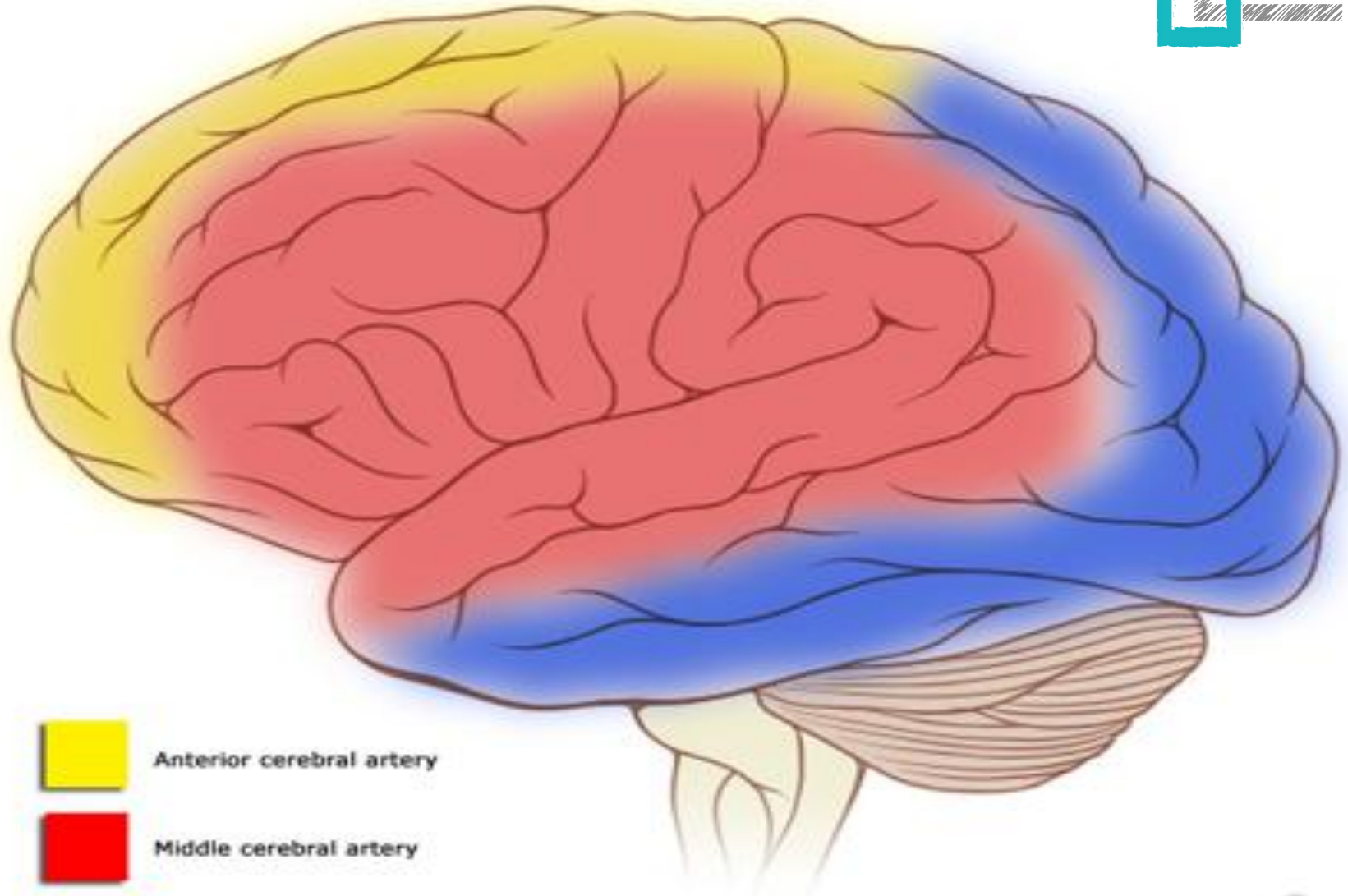





-  Anterior cerebral artery
-  Middle cerebral artery
-  Posterior cerebral artery

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Cortical vascular territories

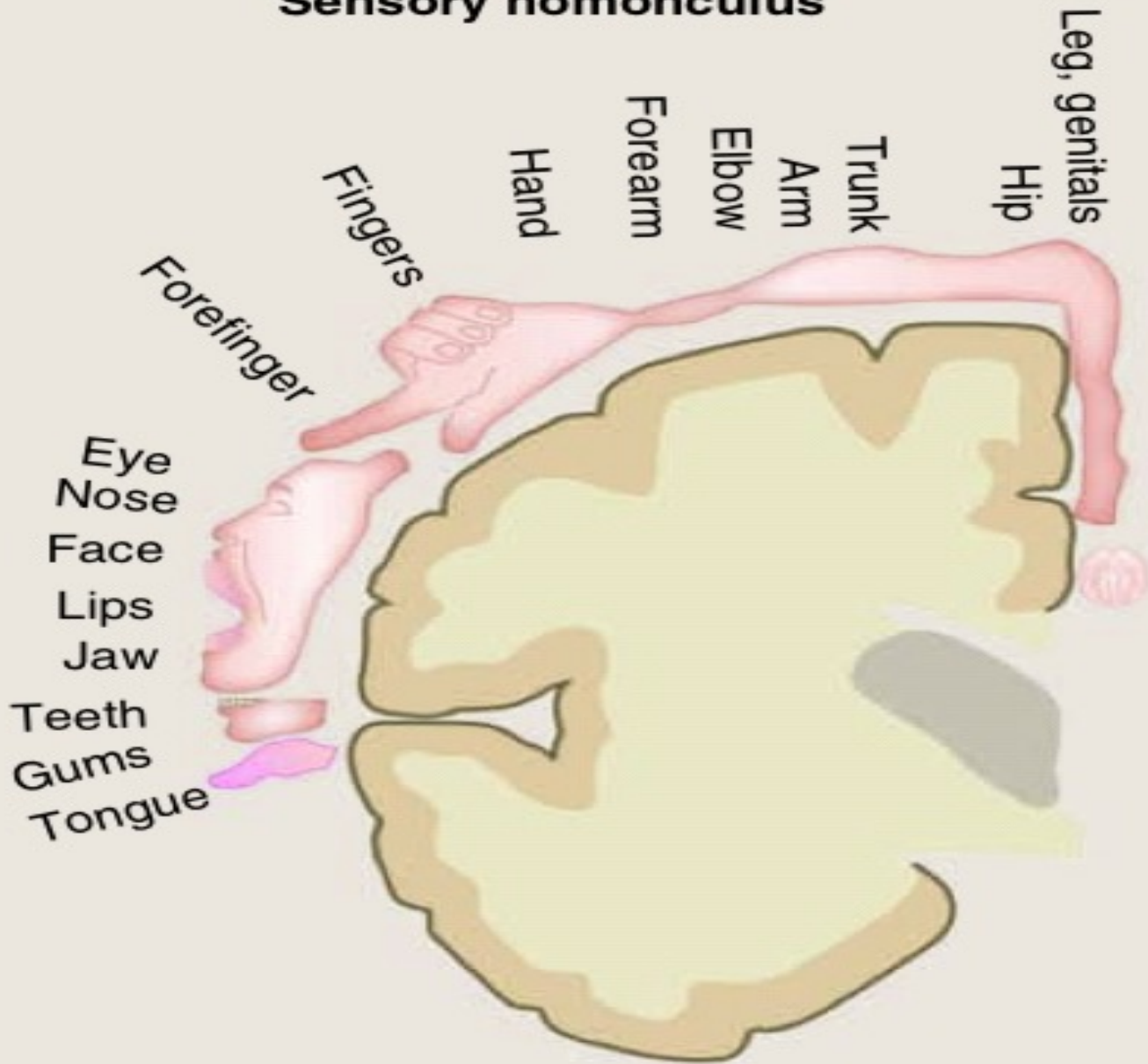


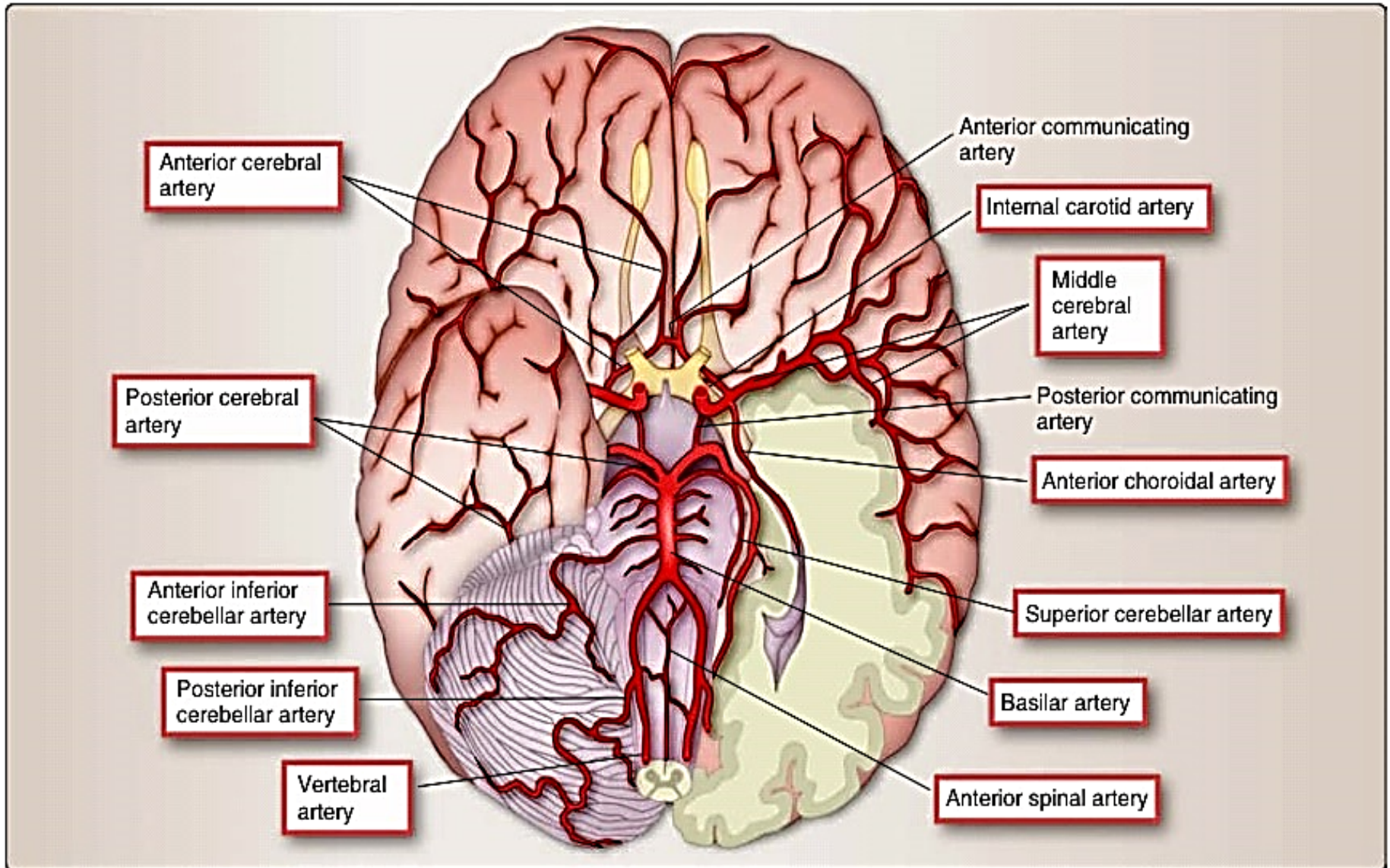
-  Anterior cerebral artery
-  Middle cerebral artery
-  Posterior cerebral artery

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Sensory homonculus





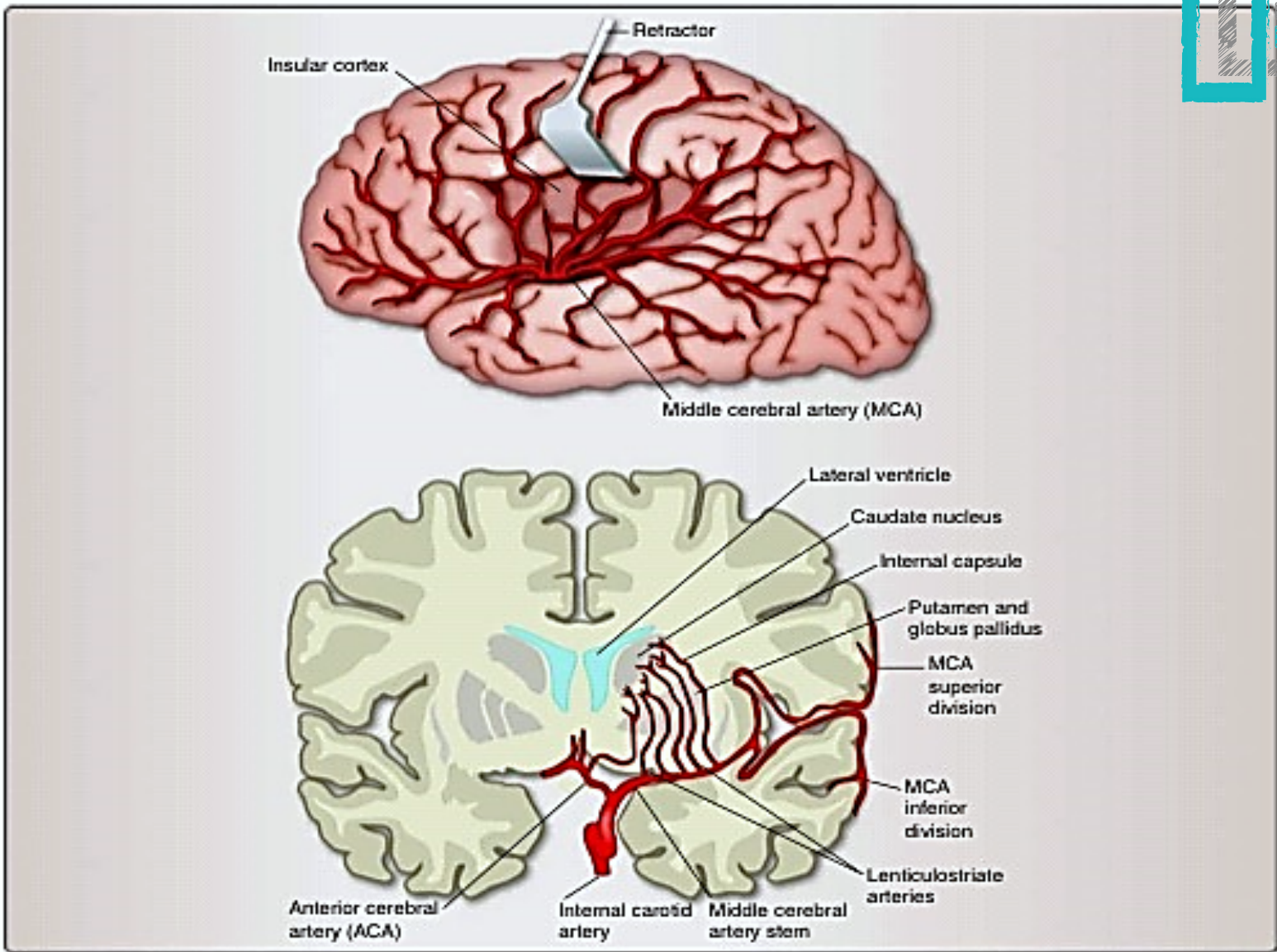
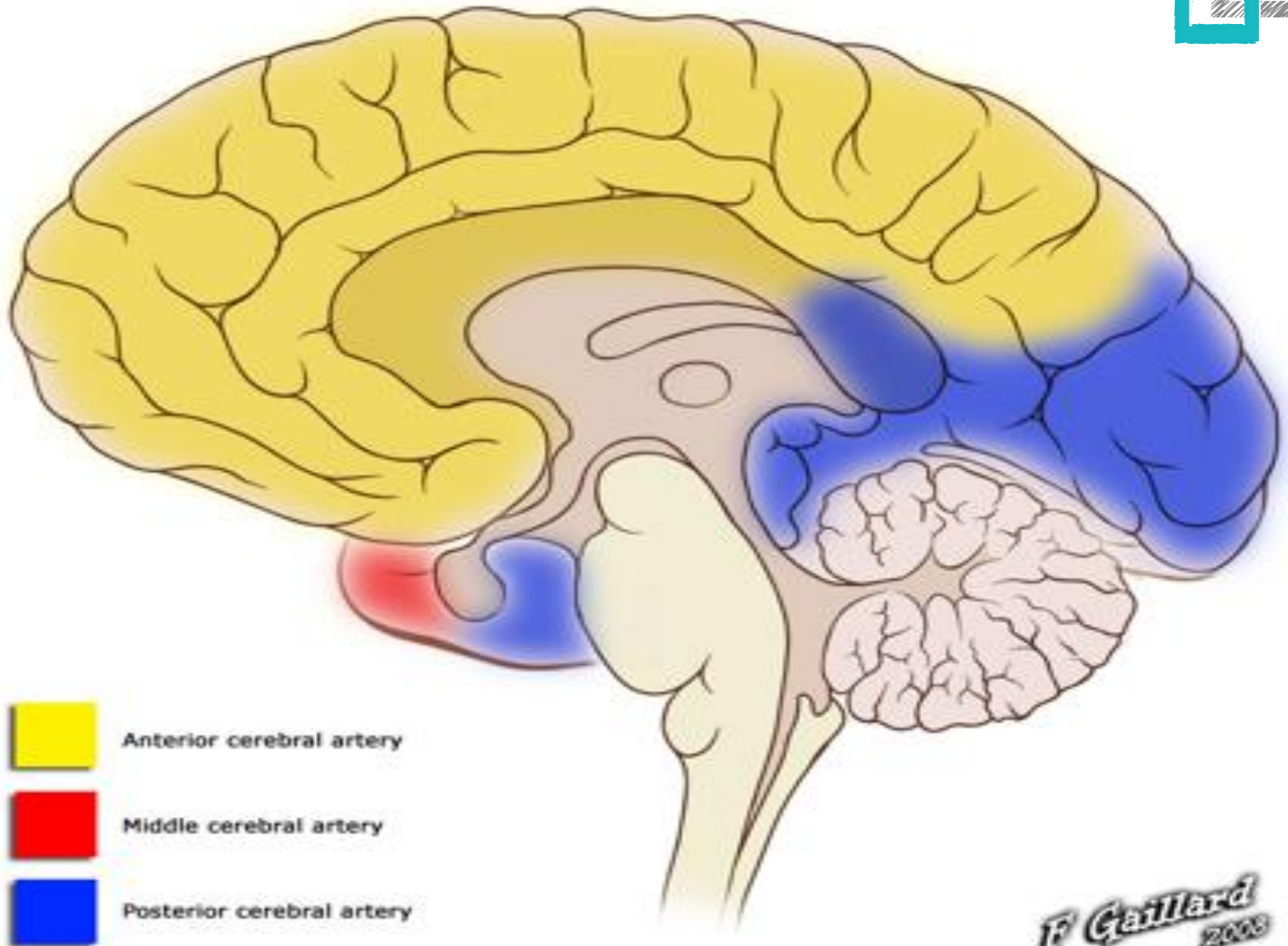


Figure 13.22

The middle cerebral artery as it branches onto the lateral surface of the brain from the insula deep in the lateral fissure.

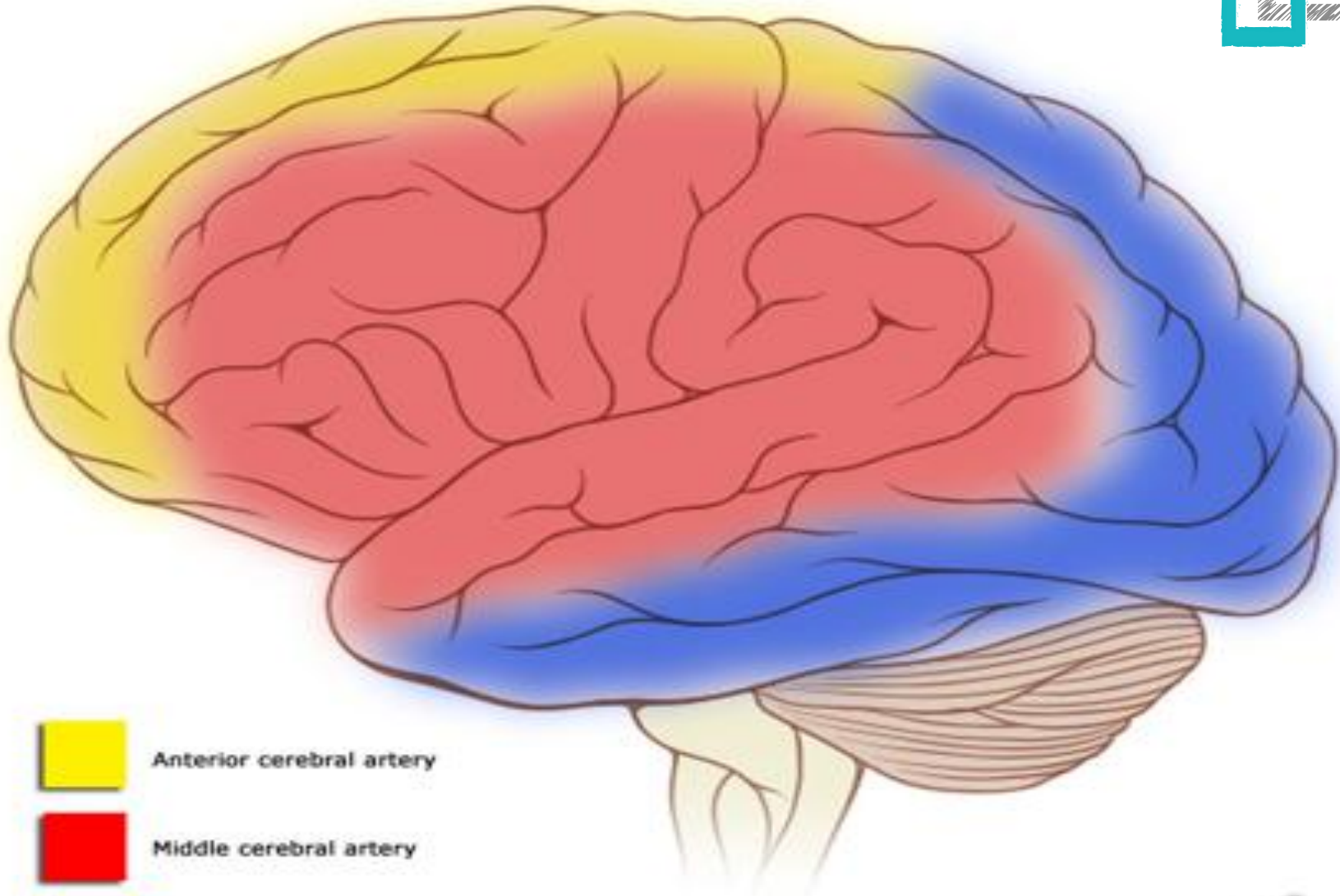
Cortical vascular territories






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2003
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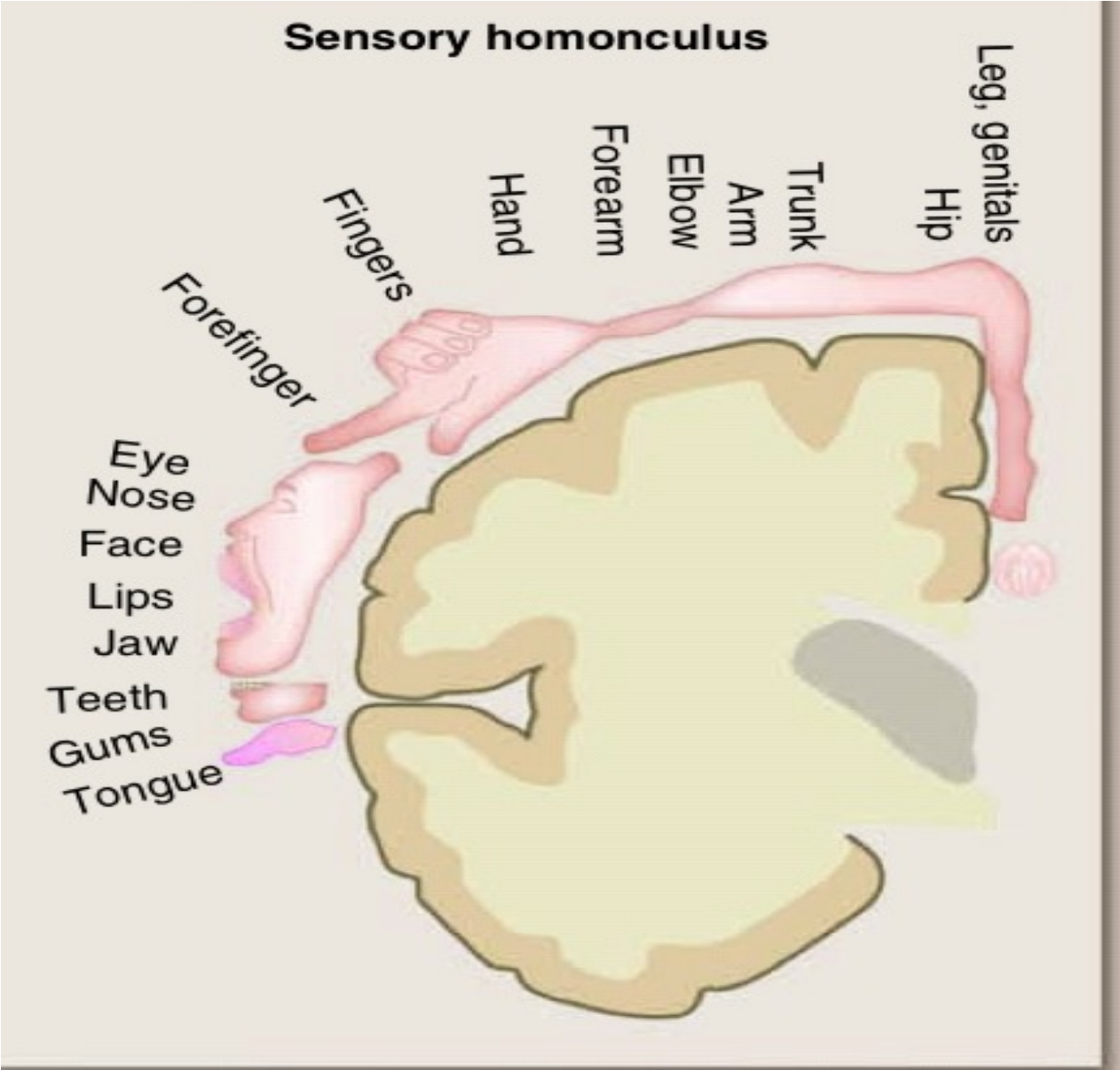
Cortical vascular territories

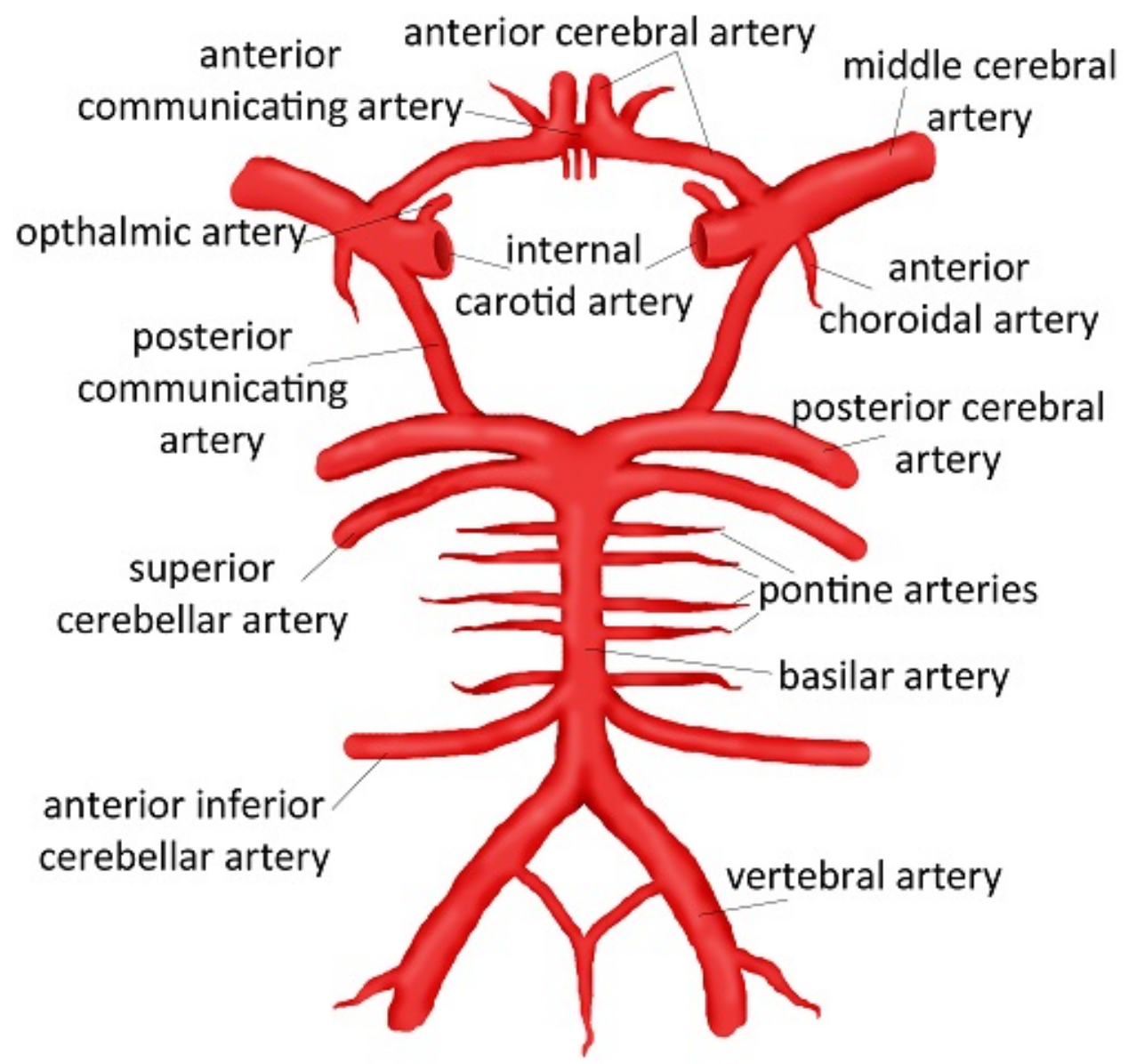


-  Anterior cerebral artery
-  Middle cerebral artery
-  Posterior cerebral artery

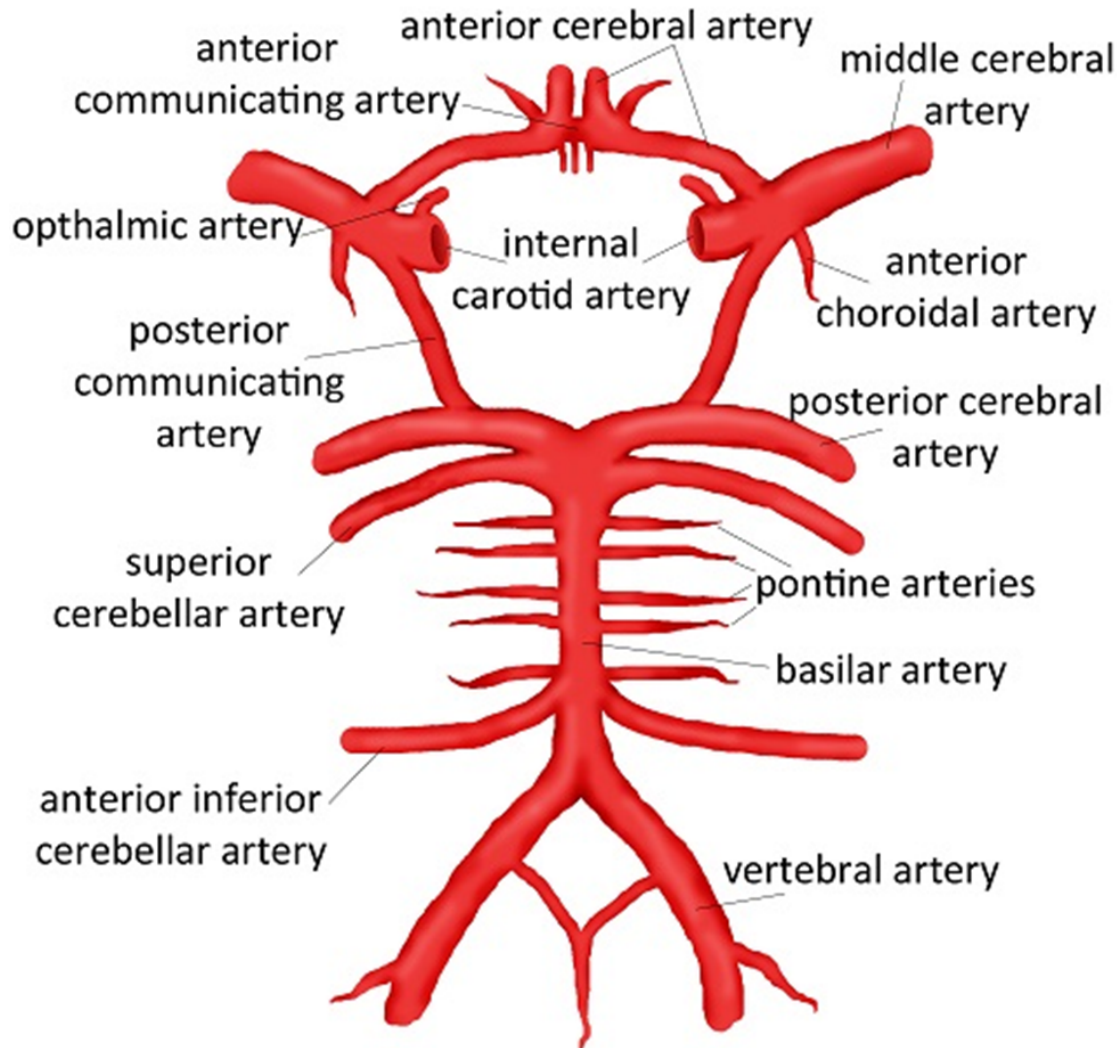
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Circle of Willis



Contributors to the circle of Willis :

- The anterior communicating
- anterior cerebral,
- internal carotid
- posterior communicating
- posterior cerebral
- basilar arteries

Summary: Branches of the internal carotid artery



1- The ophthalmic artery	2-The anterior cerebral artery	3- The middle cerebral artery.
	<p>A- The Cortical branches: Supply the medial surface of the cerebral cortex + 1 inch laterally and from the back it reaches up to the pre-occipital sulcus.</p> <p>B- The central branches:</p> <ol style="list-style-type: none">1. The lentiform nucleolus2. Caudate nucleolus3. The internal capsule	<p>Largest branch of the internal carotid</p> <p>A- The Cortical branches: Supply the remaining lateral cortical surface except for:</p> <ol style="list-style-type: none">1. The narrow lateral area supplied by the anterior cerebral artery2. The occipital lobe supplied by the posterior cerebral artery3. The inferolateral surface of the temporal lobe supplied by the posterior cerebral artery <p>B- The central branches:</p> <ol style="list-style-type: none">1. The lentiform nucleolus2. Caudate nucleolus3. The internal capsule

Summary: Branches of the internal carotid artery



4- The choroidal artery

Ends up in the choroid plexus of the lateral ventricle

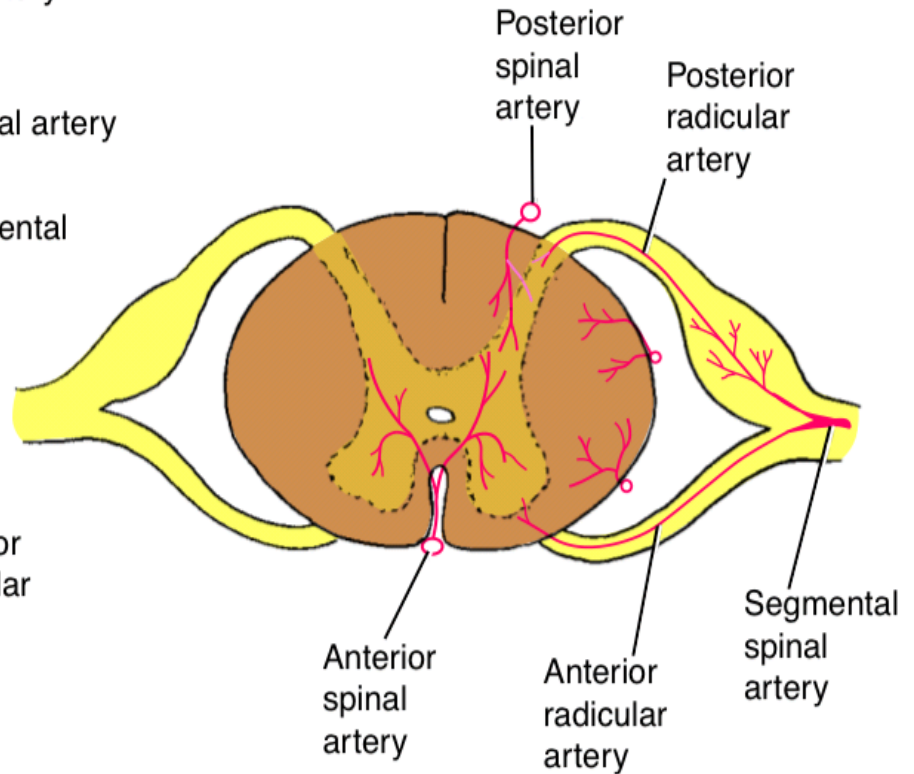
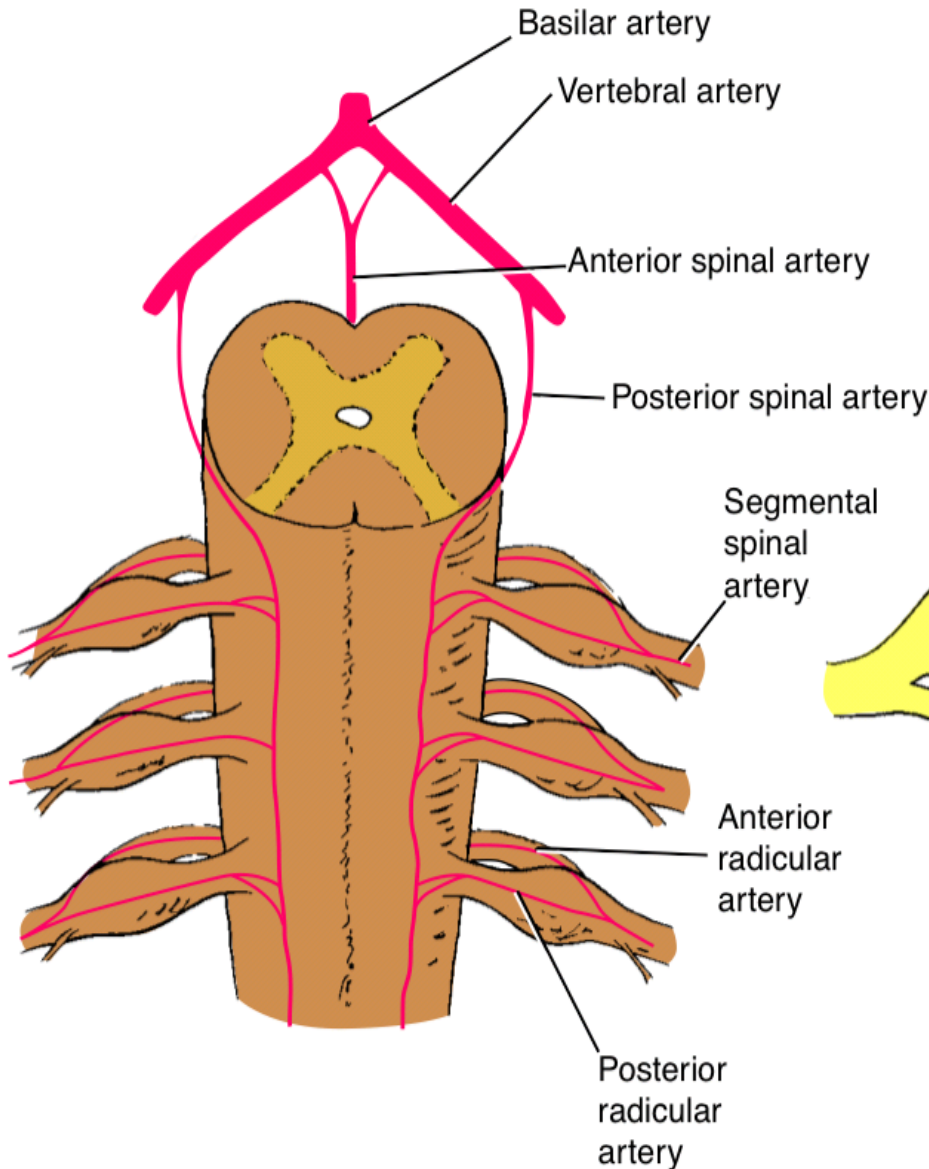
5- The posterior communicating artery

Joins **the middle cerebral artery** with **the posterior cerebral artery** forming part of **the circle of Willis**

Blood supply of the spinal cord



- 1- The Anterior spinal artery
- 2- The paired Posterior spinal arteries
- 3- The segmental arteries

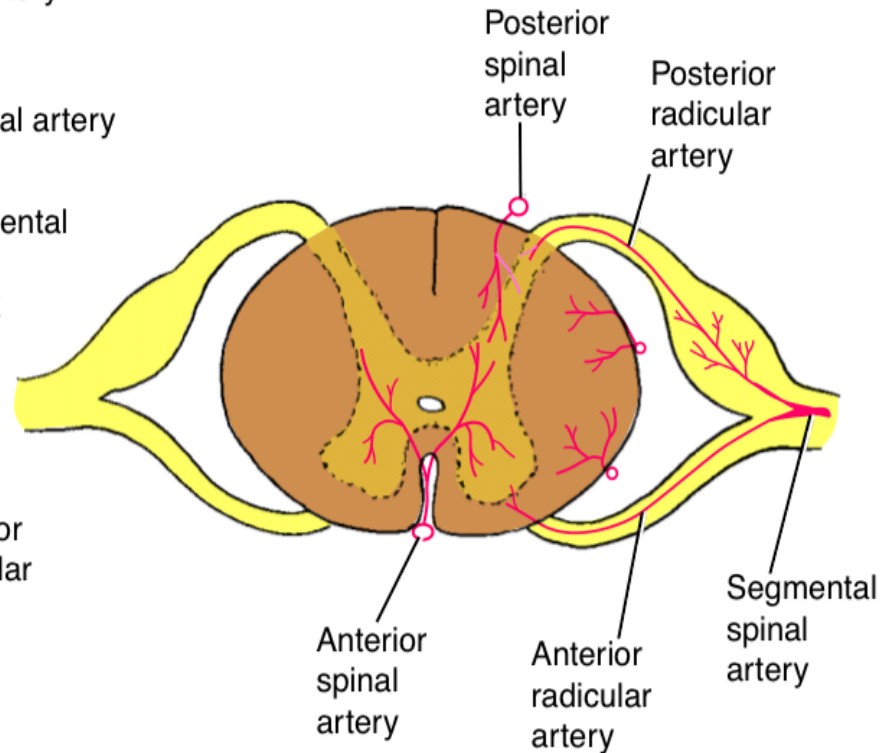
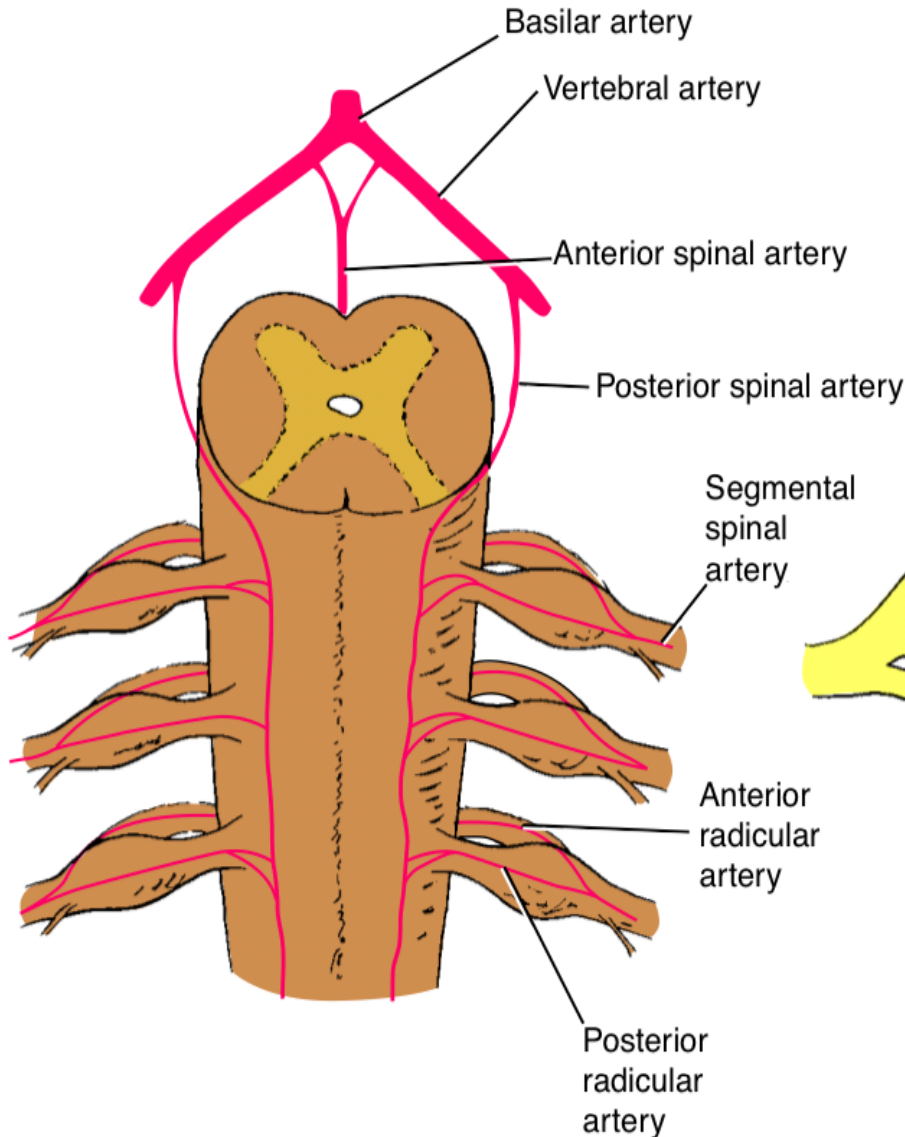


Blood supply of the spinal cord



3- The segmental arteries:

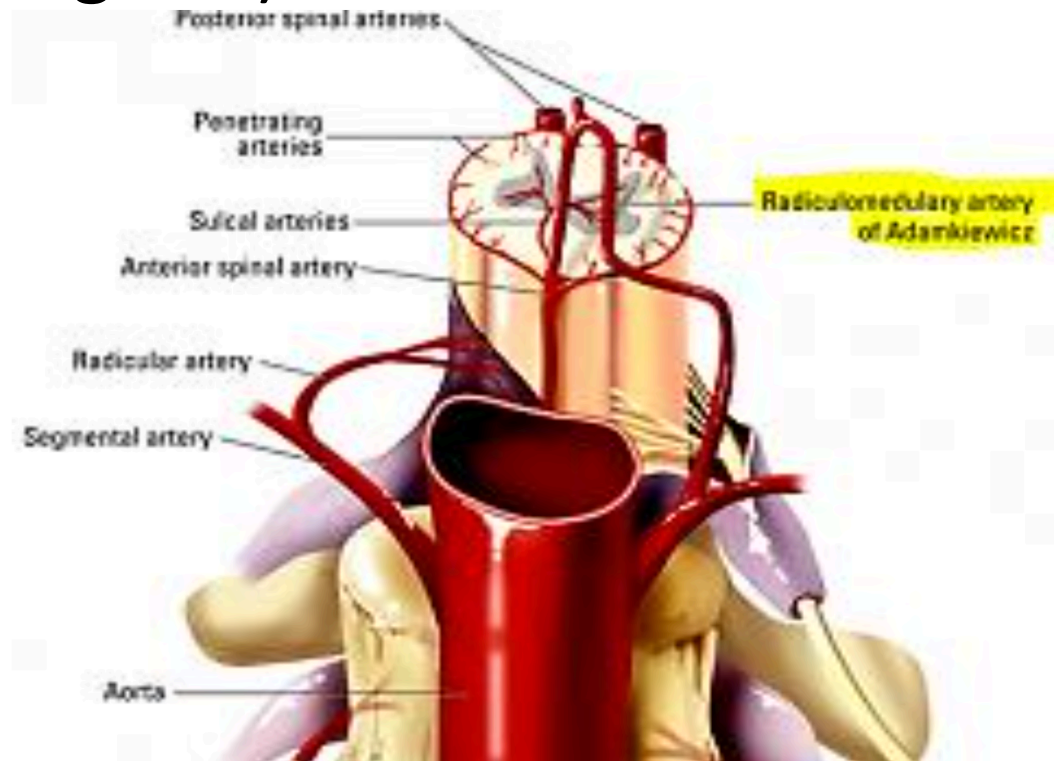
- In the cervical region -> the deep cervical arteries
- In the thoracic region -> intercostal A
- In the lumbar region -> lumbar Arteries
- As branches of the aorta



Great anterior medullary artery of Adamkiewicz



- It arises from the **Aorta** at the level of **T12**
- Supplies the lower part of the cord (the lumbar and sacral regions)





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