Al-Mustaqbal University

College of Engineering & Technology

Biomedical Engineering Department

Subject Name: Anatomy II

2nd Class, Second Semester

Subject Code: [UOMU011045]

Academic Year: 2024-2025

Lecturer: Dr.Ahmed ali.

Email: *ahmed.ali.shabaan@uomus.edu.iq……..*

Lecture No.: -4

Lecture Title: [Blood Supply]

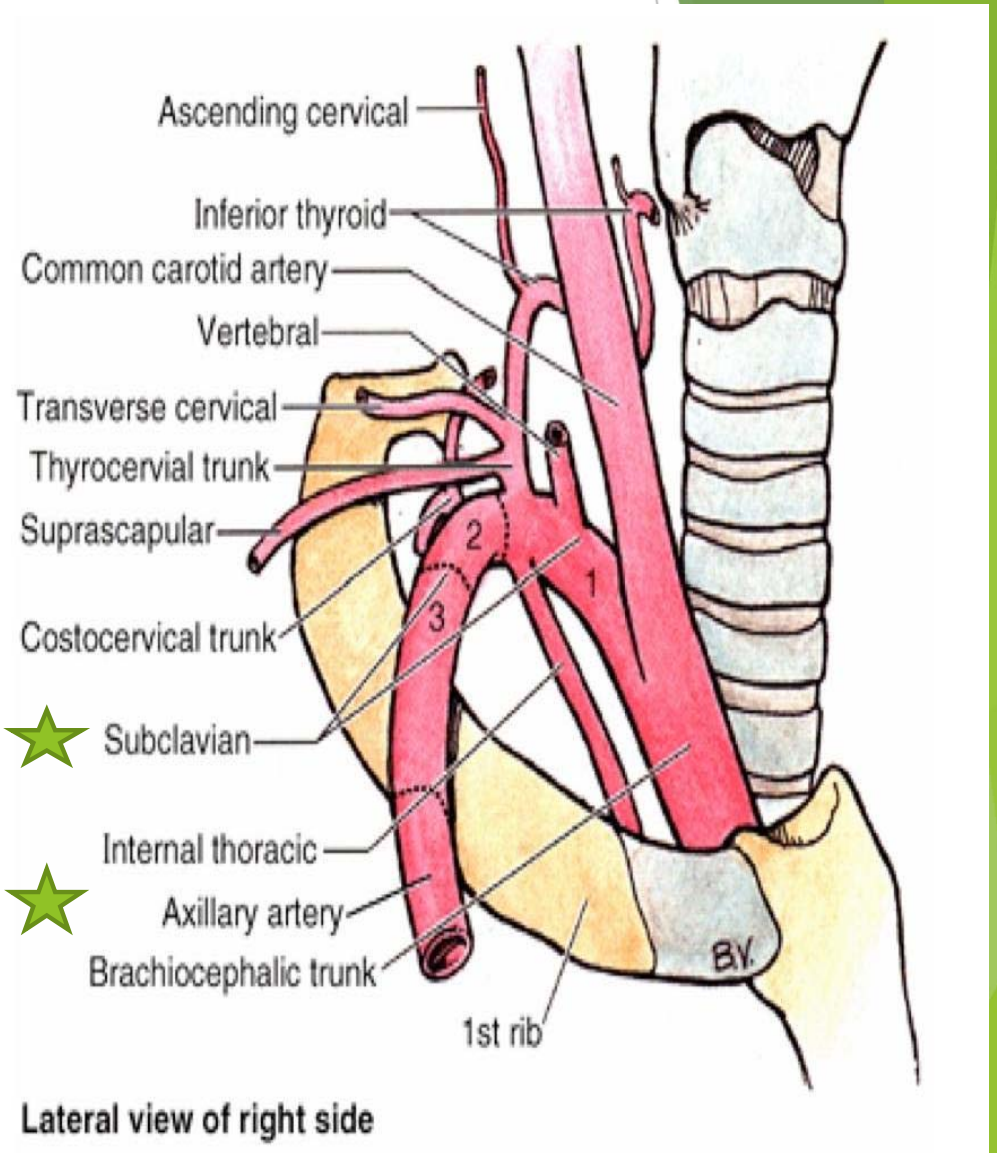
ANATOMY / 2nd Stage

Head and Neck

Lec.4
Blood Supply

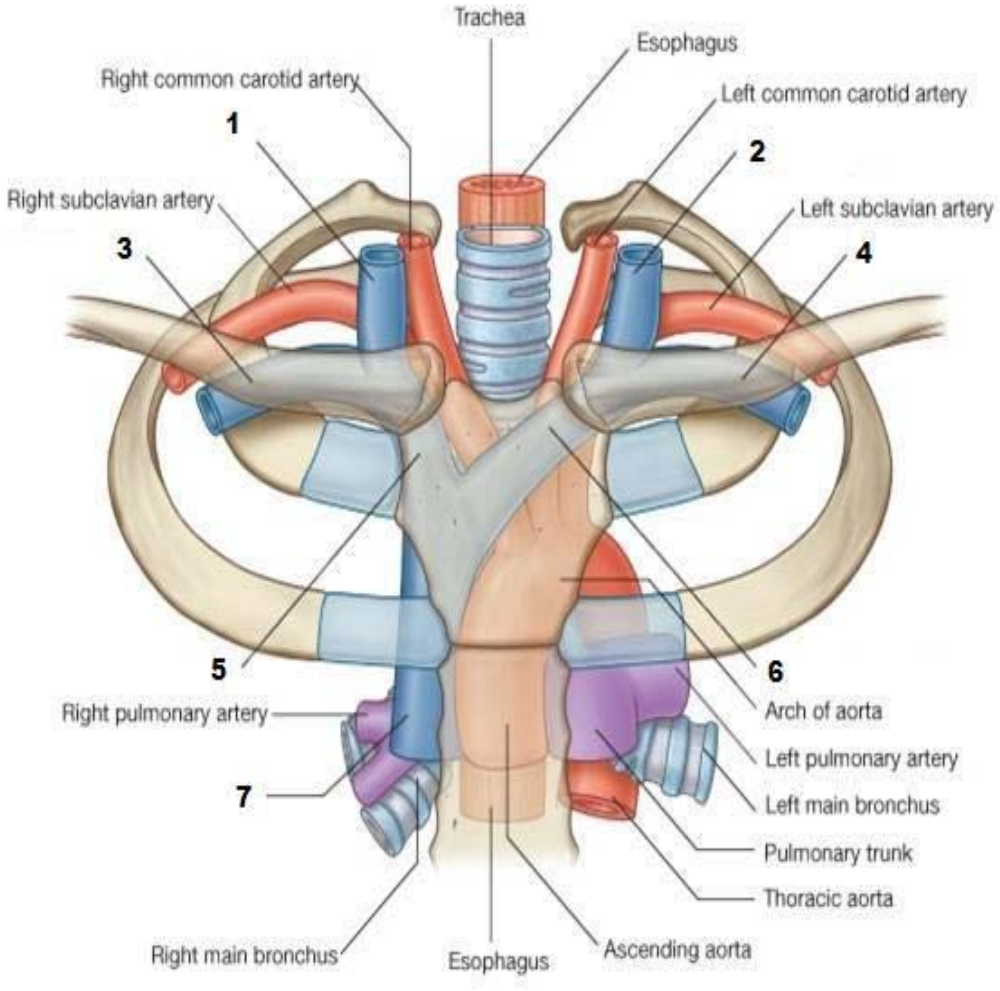
Subclavian Arteries

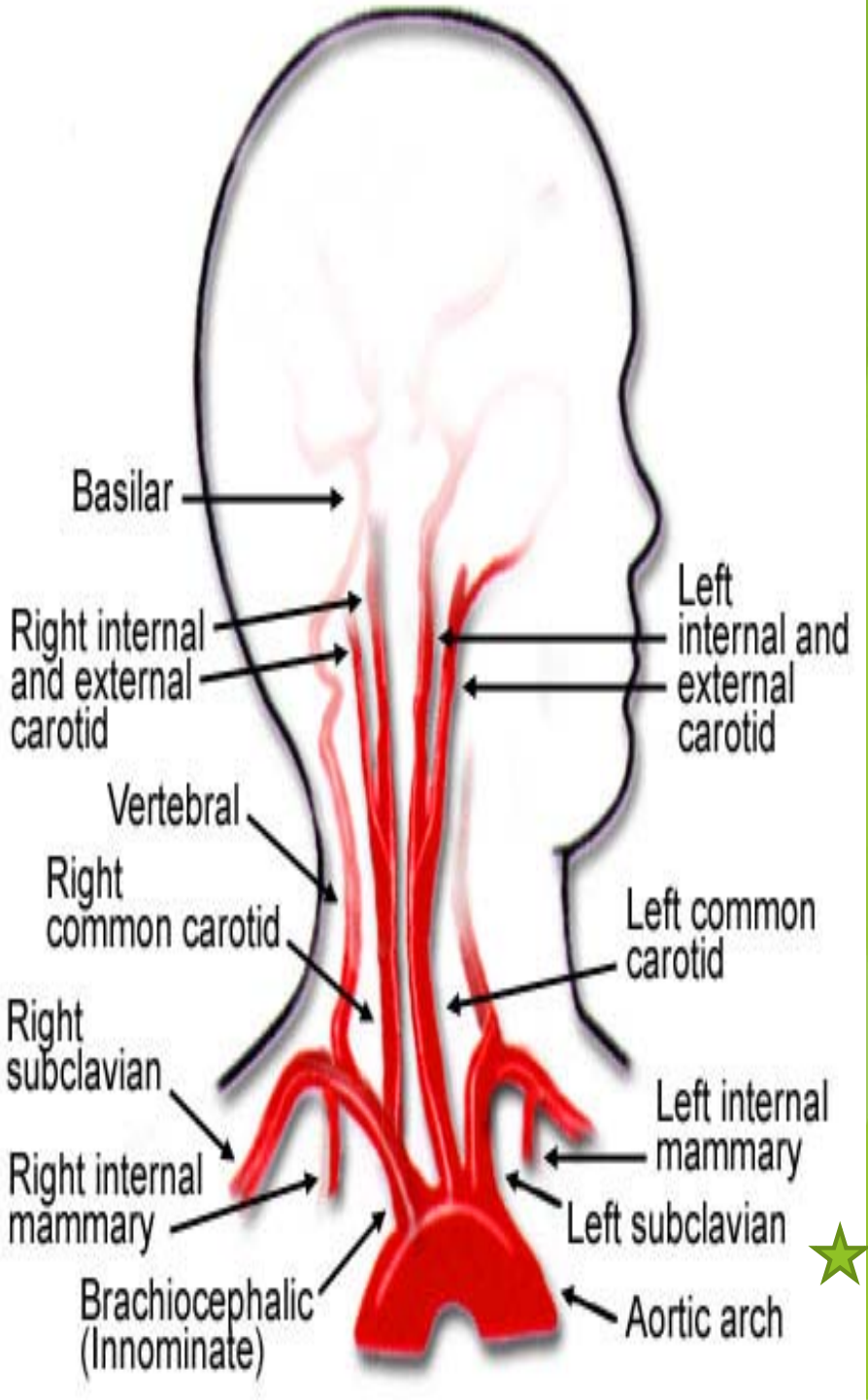
The right subclavian artery: arises from the brachiocephalic artery, behind the right sternoclavicular joint. At the outer border of the first rib, subclavian artery becomes the axillary artery.



Lateral view of right side

The left subclavian artery: arises from the arch of the aorta in the thorax.



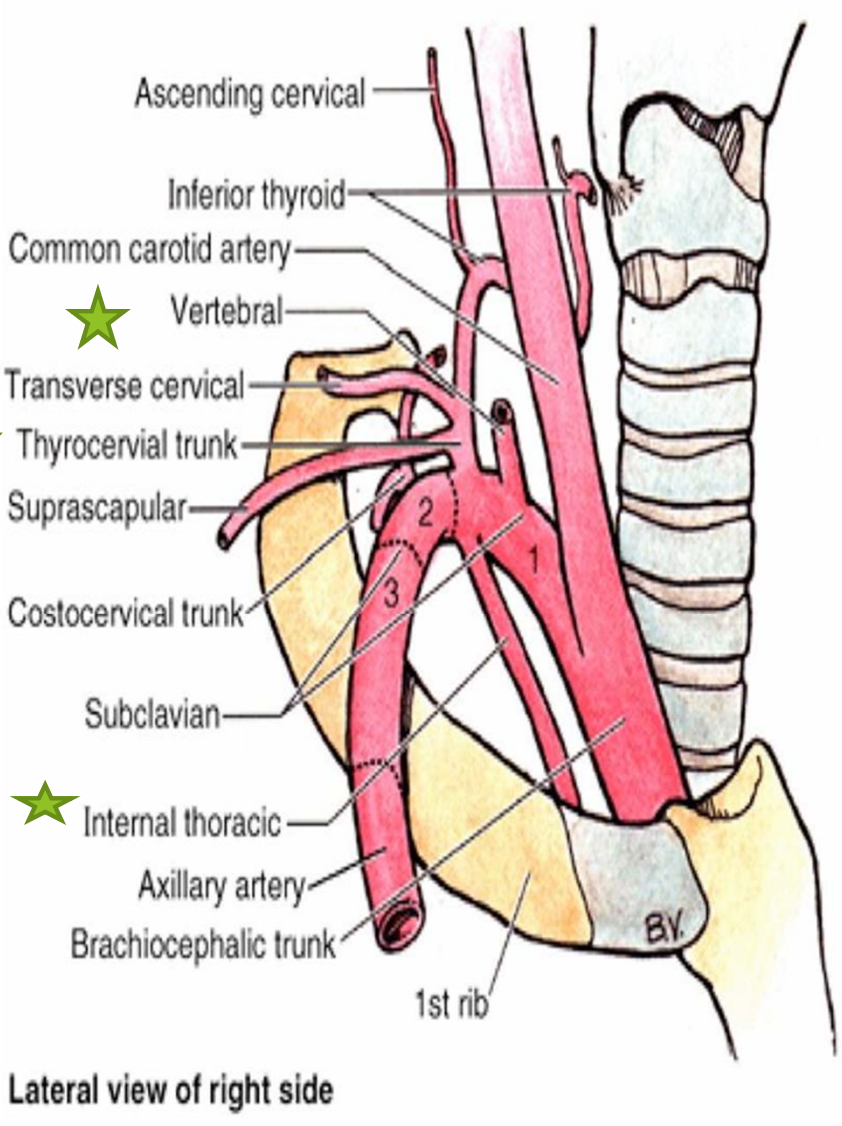


First Part of the Subclavian Artery

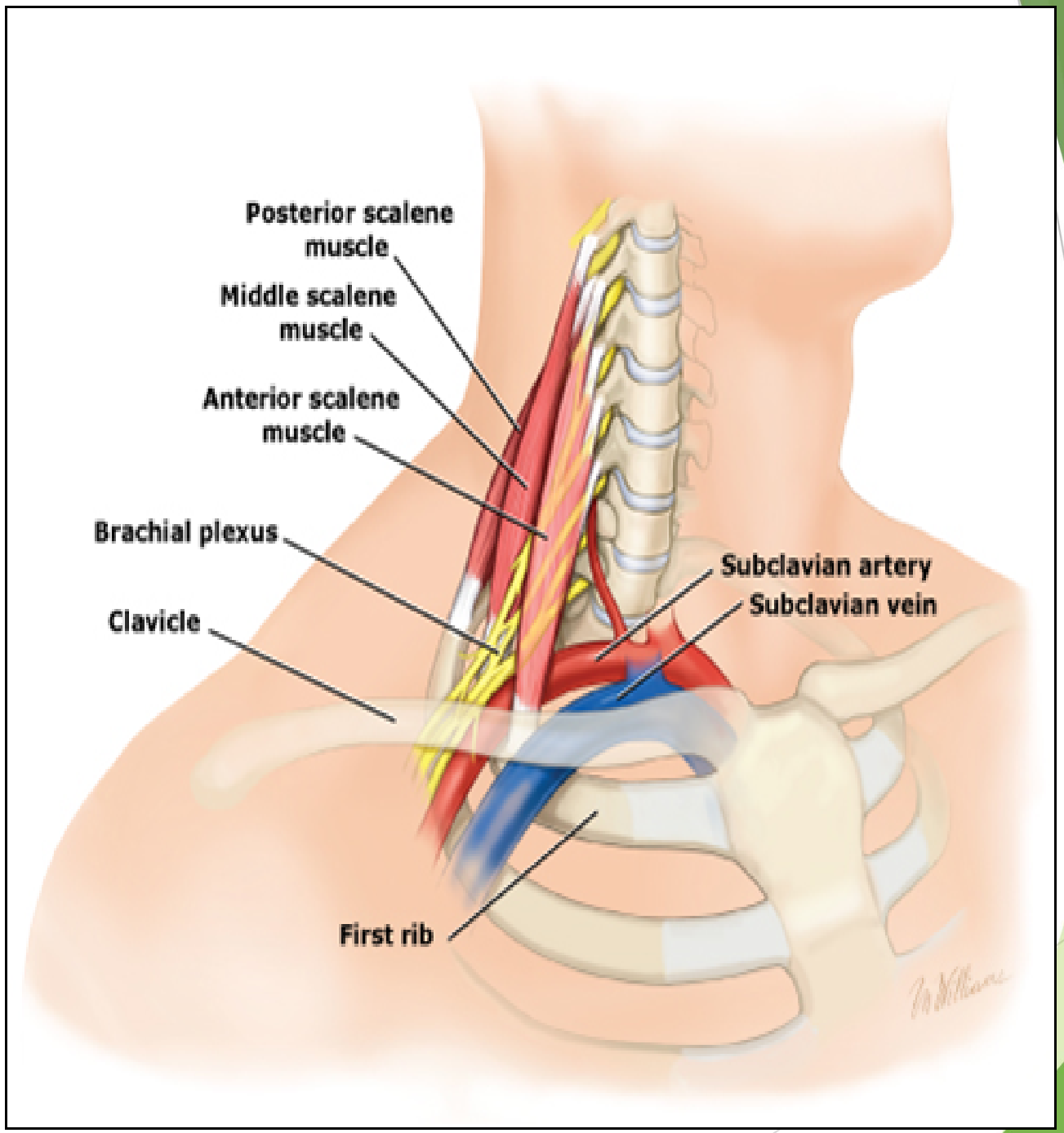
It extends from the origin of the subclavian artery to the medial border of the scalenus anterior muscle

It gives off:

1- Vertebral artery.
2- Thyrocervical trunk.
3- Internal thoracic artery.



Lateral view of right side


Posterior scalene muscle
Middle scalene muscle
Anterior scalene muscle
Brachial plexus
Clavicle
First rib
Subclavian artery
Subclavian vein

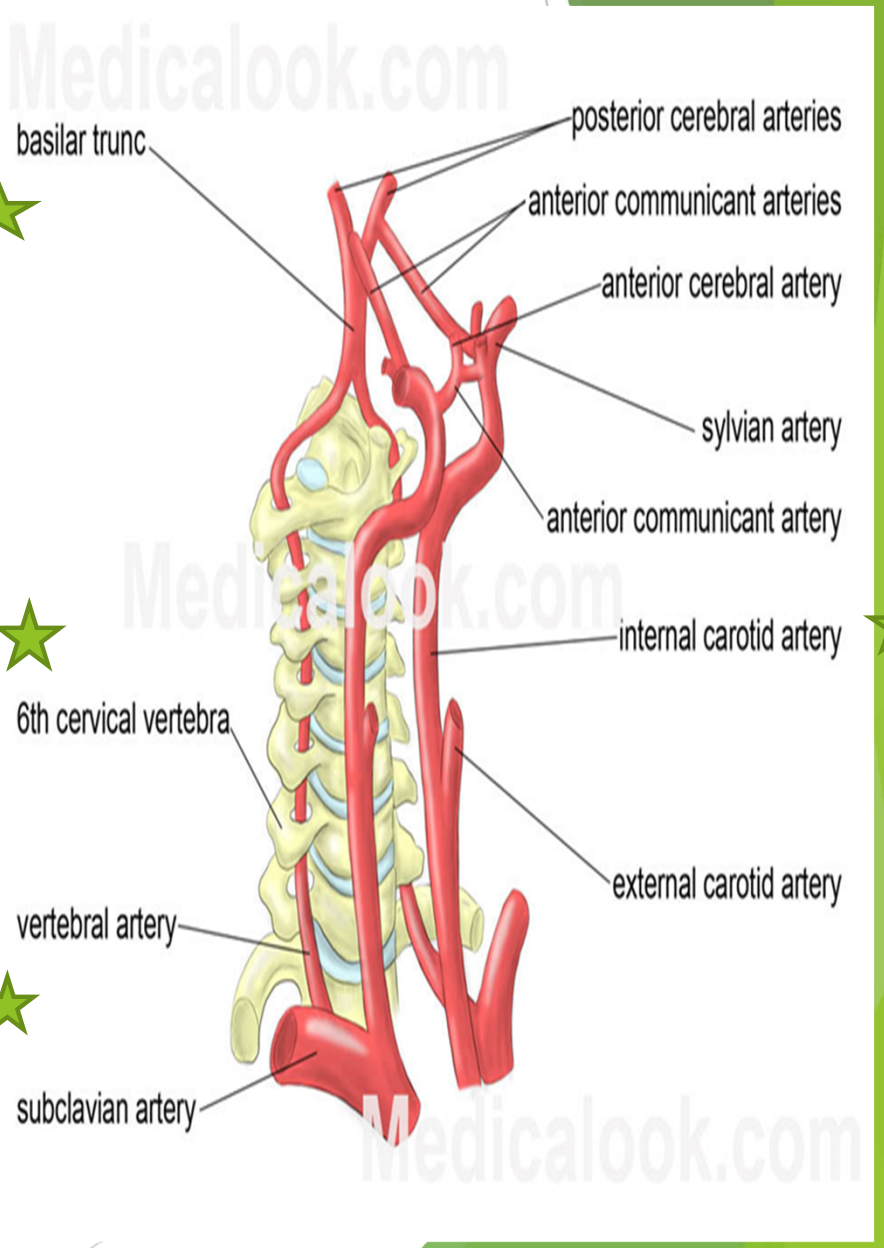
1- The vertebral artery

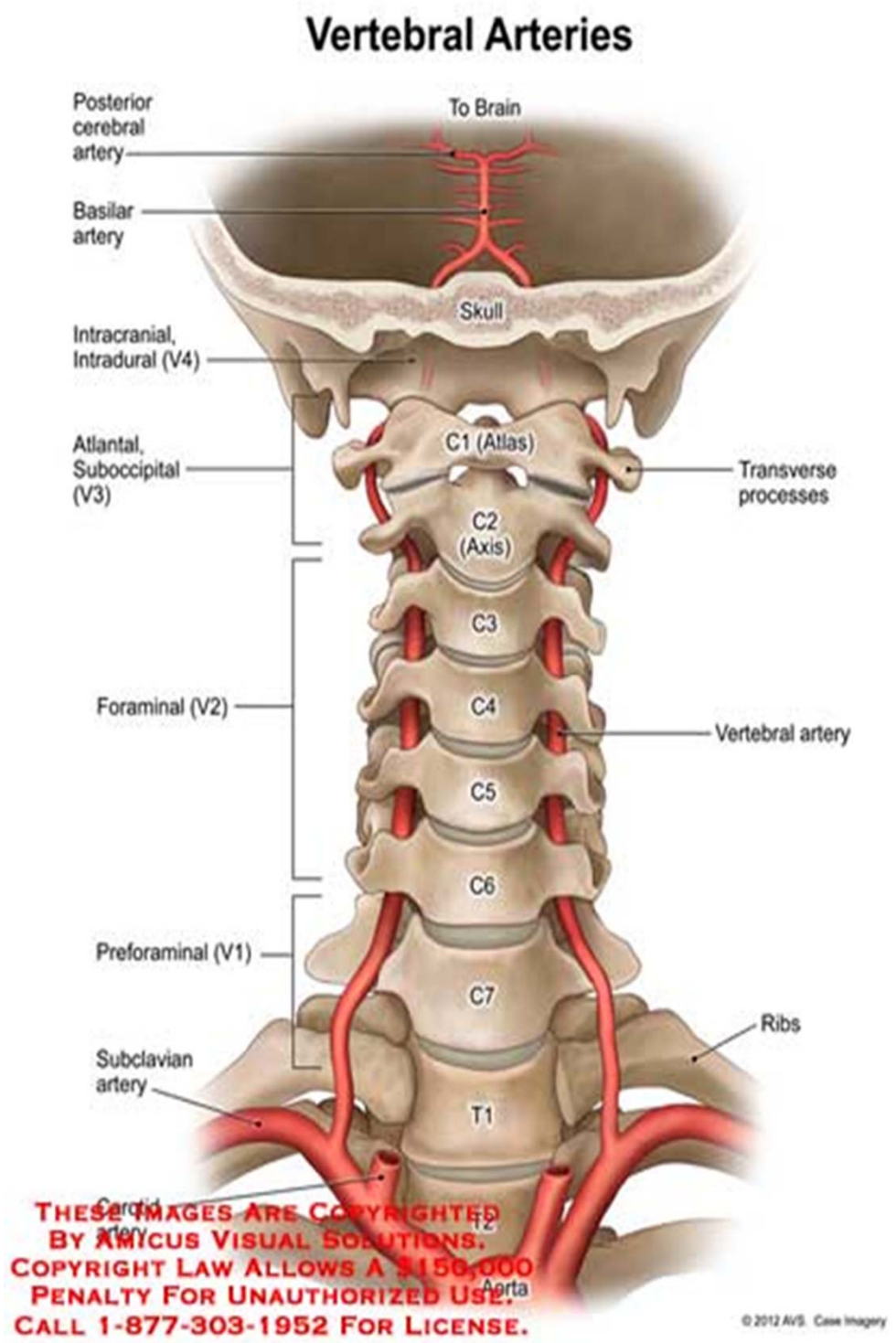
The vertebral artery is one of the main arteries at the base of the neck ,and is the first branch of the subclavian artery.

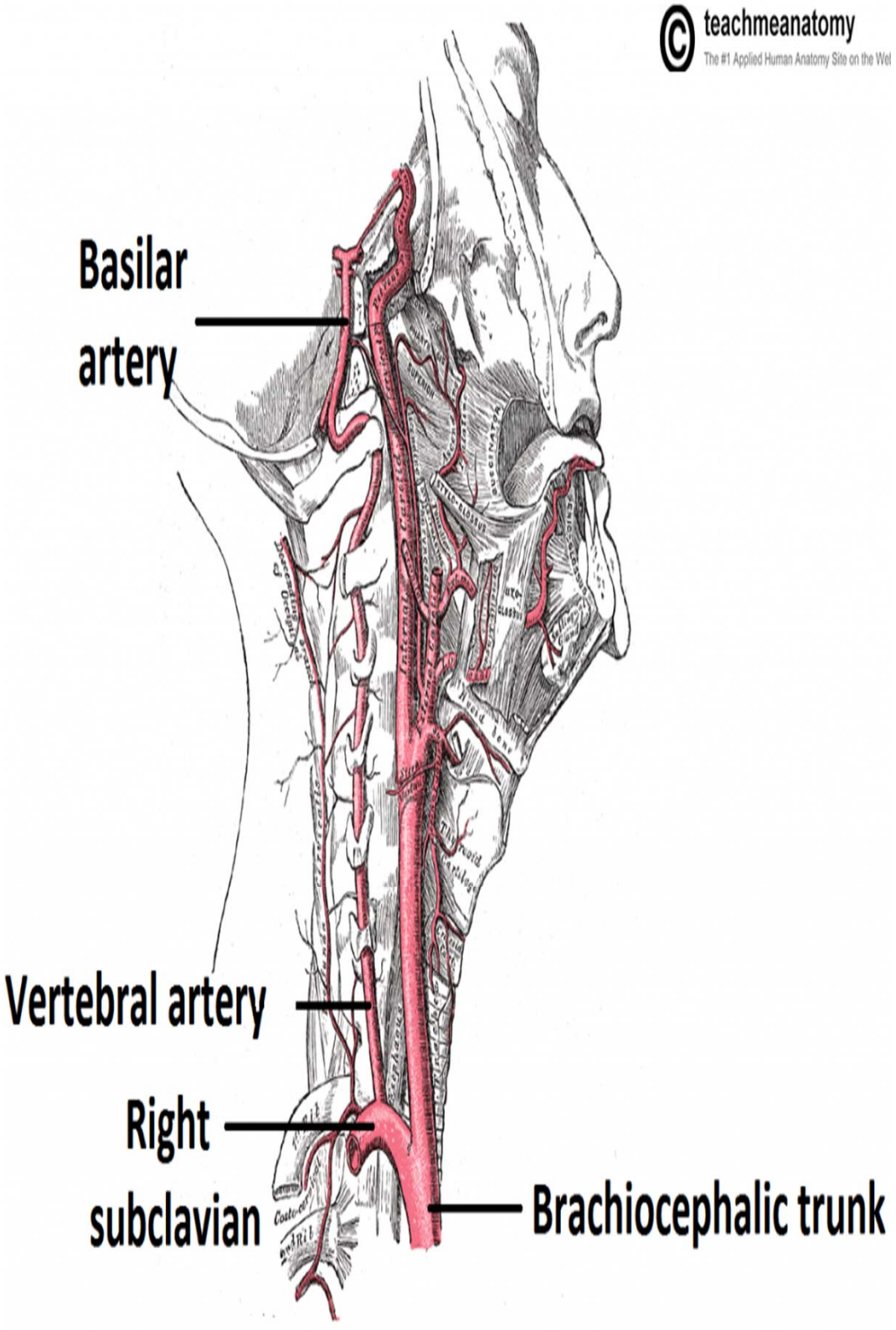
It later unites to create the basilar artery in a complex named the vertebrobasilar system. This system provides important areas of the brain with blood.

origin: subclavian artery

course: ascends posterior to the internal carotid artery in the transverse foramina of the cervical vertebrae




Vertebral Arteries
Posterior cerebral artery
To Brain
Basilar artery
Skull
Intracranial, Intradural (V4)
Atlantal, Suboccipital (V3)
C1 (Atlas)
Transverse processes
C2 (Axis)
C3
Foraminal (V2)
C4
Vertebral artery
C5
C6
Preforaminal (V1)
C7
Ribs
Subclavian artery
T1
T2
Aorta
THESE IMAGES ARE COPYRIGHTED BY AMICUS VISUAL SOLUTIONS.
COPYRIGHT LAW ALLOWS A $150,000 PENALTY FOR UNAUTHORIZED USE.
CALL 1-877-303-1952 FOR LICENSE.
© 2012 AVS. Case Imagery


© teachmeanatomy
The #1 Applied Human Anatomy Site on the Wel
Basilar artery
Vertebral artery
Right subclavian
Brachiocephalic trunk

Circle of Willis

The circle of Willis is an anastomotic system of arteries that sits at the base of the brain lies in the subarachnoid space . It is formed by the anastomosis between the branches of the two internal carotid arteries and the two vertebral arteries

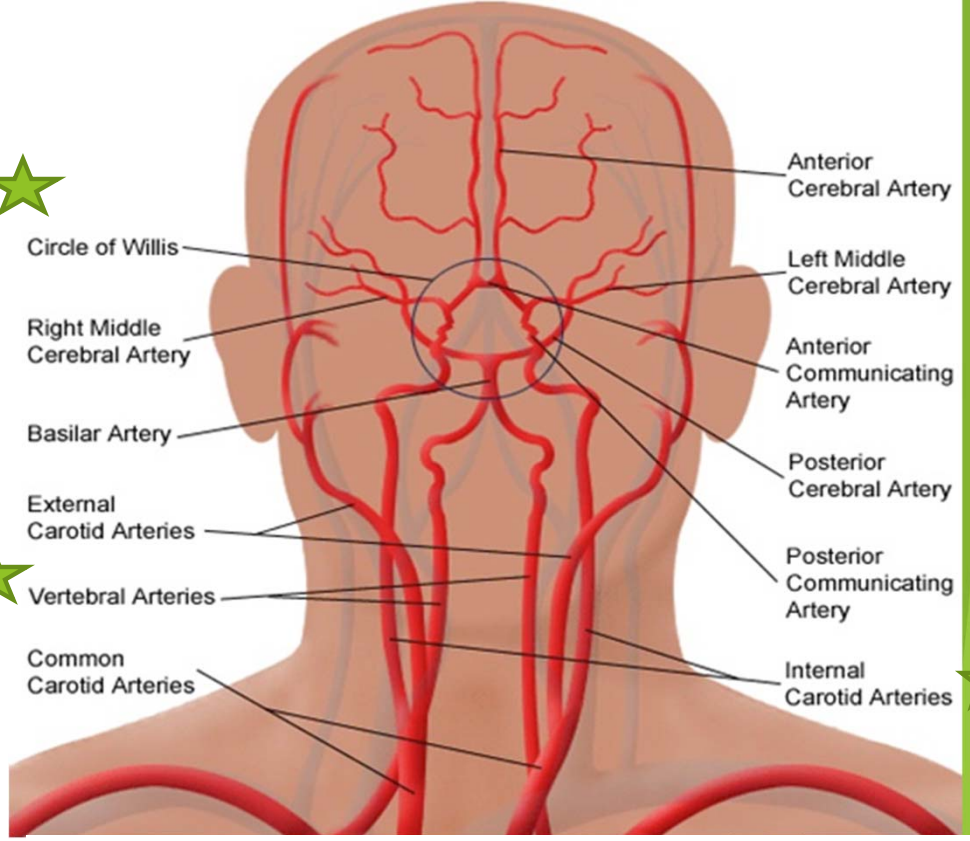
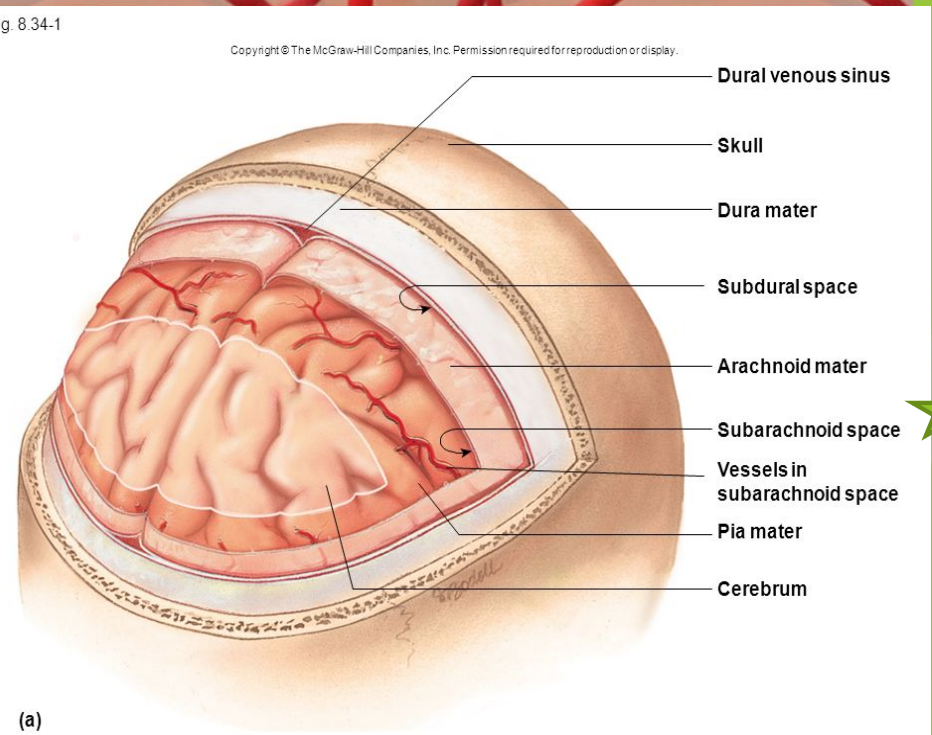


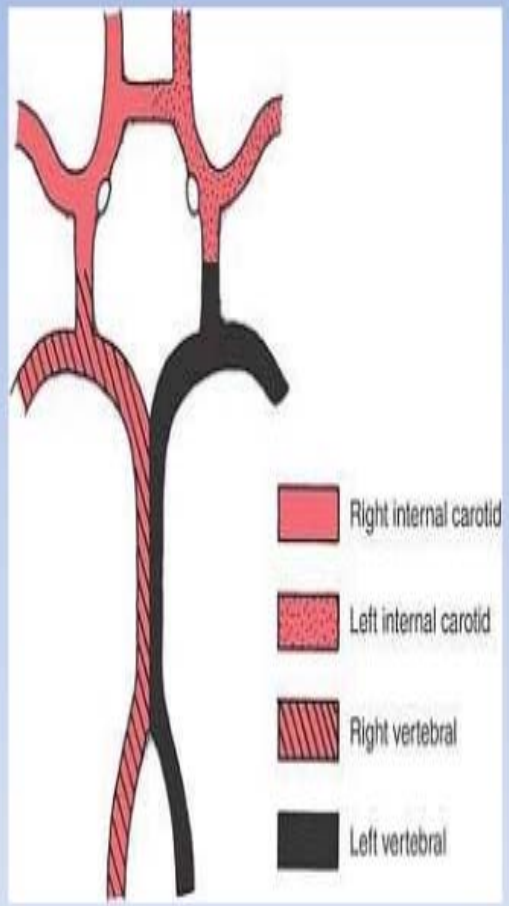
Fig. 8.34-1

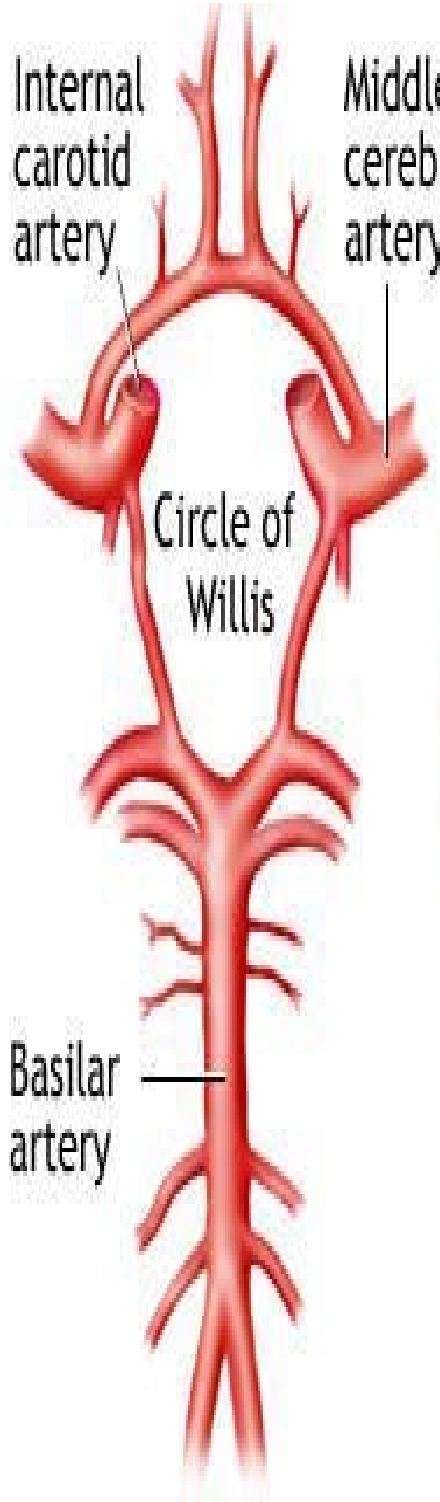


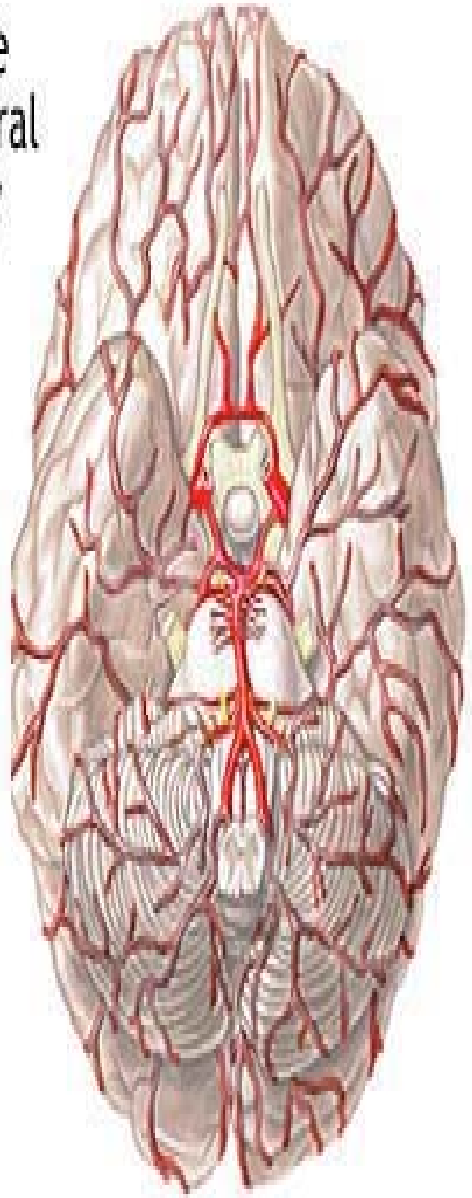
Blood Supply of the Brain

The brain is supplied by
two **internal carotid**.
two **vertebral arteries**.

The four arteries lie within the subarachnoid space, and their branches anastomose on the inferior surface of the brain to form the **circle of Willis**.

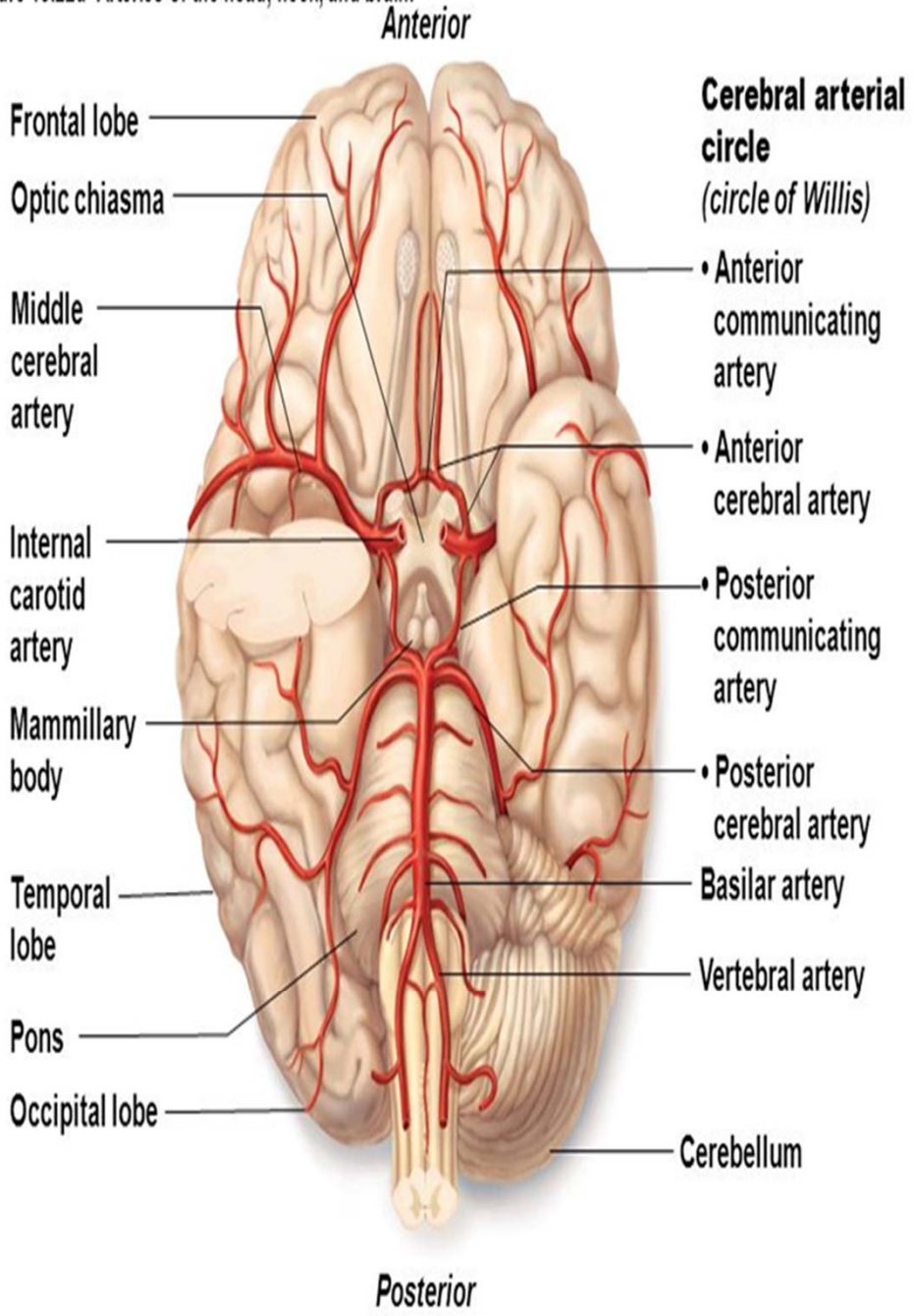




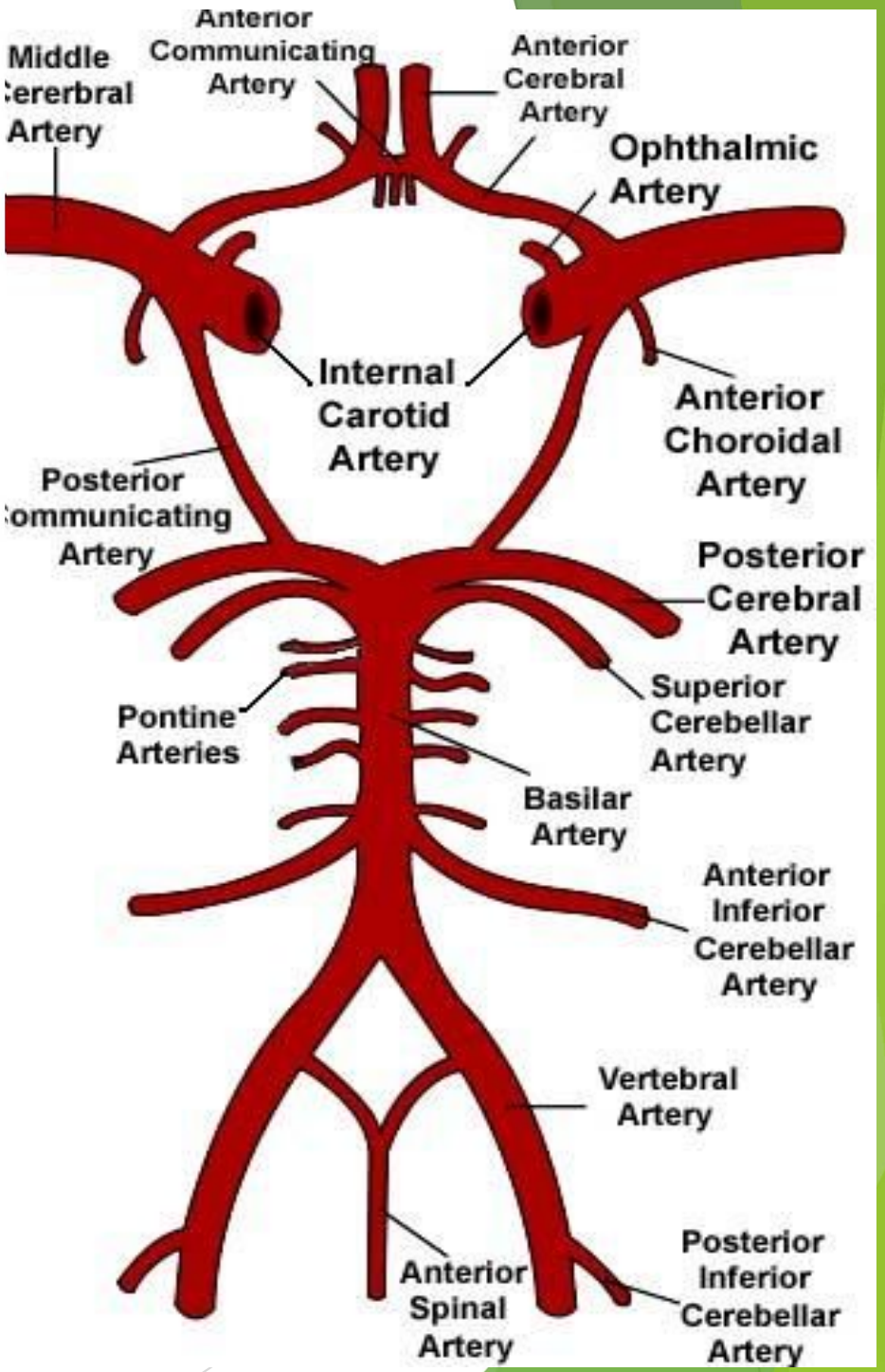


Bottom view of brain

Figure 19.22d Arteries of the head, neck, and brain.



(d) Major arteries serving the brain (inferior view, right side of cerebellum and part of right temporal lobe removed)



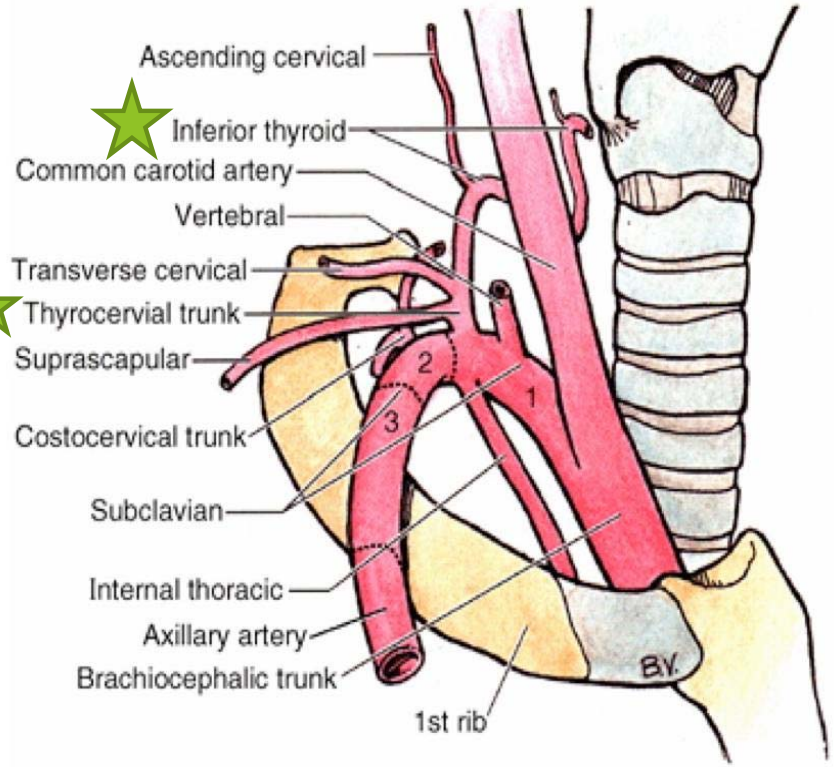
2- Thyrocervical Trunk

It is a short trunk that gives off three terminal branches:

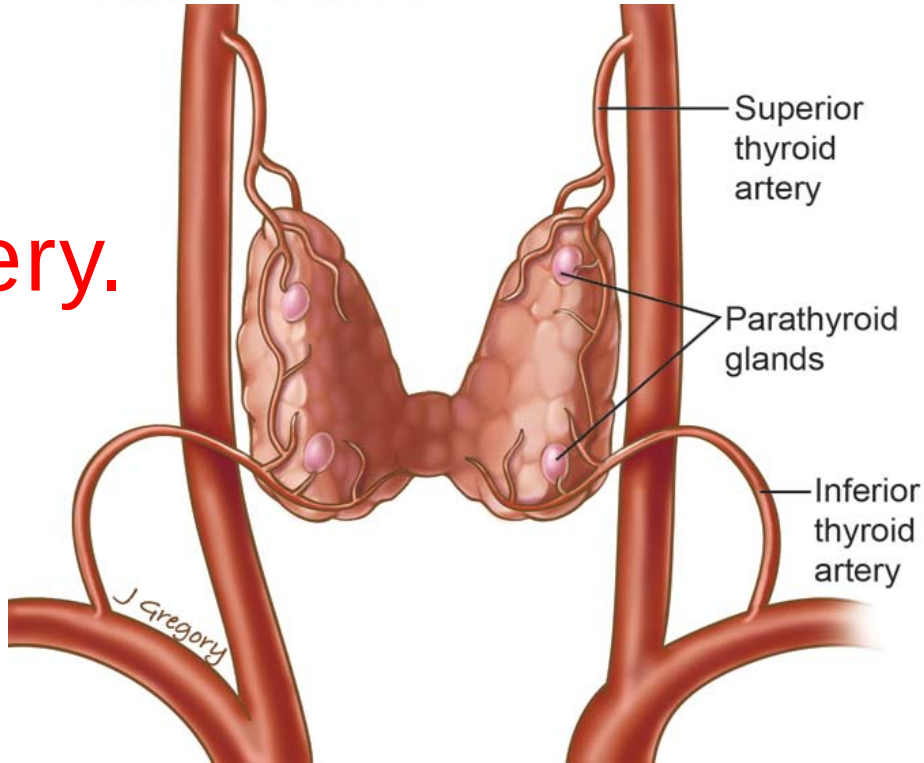
1- Inferior thyroid artery: It supplies the thyroid and the inferior parathyroid glands.

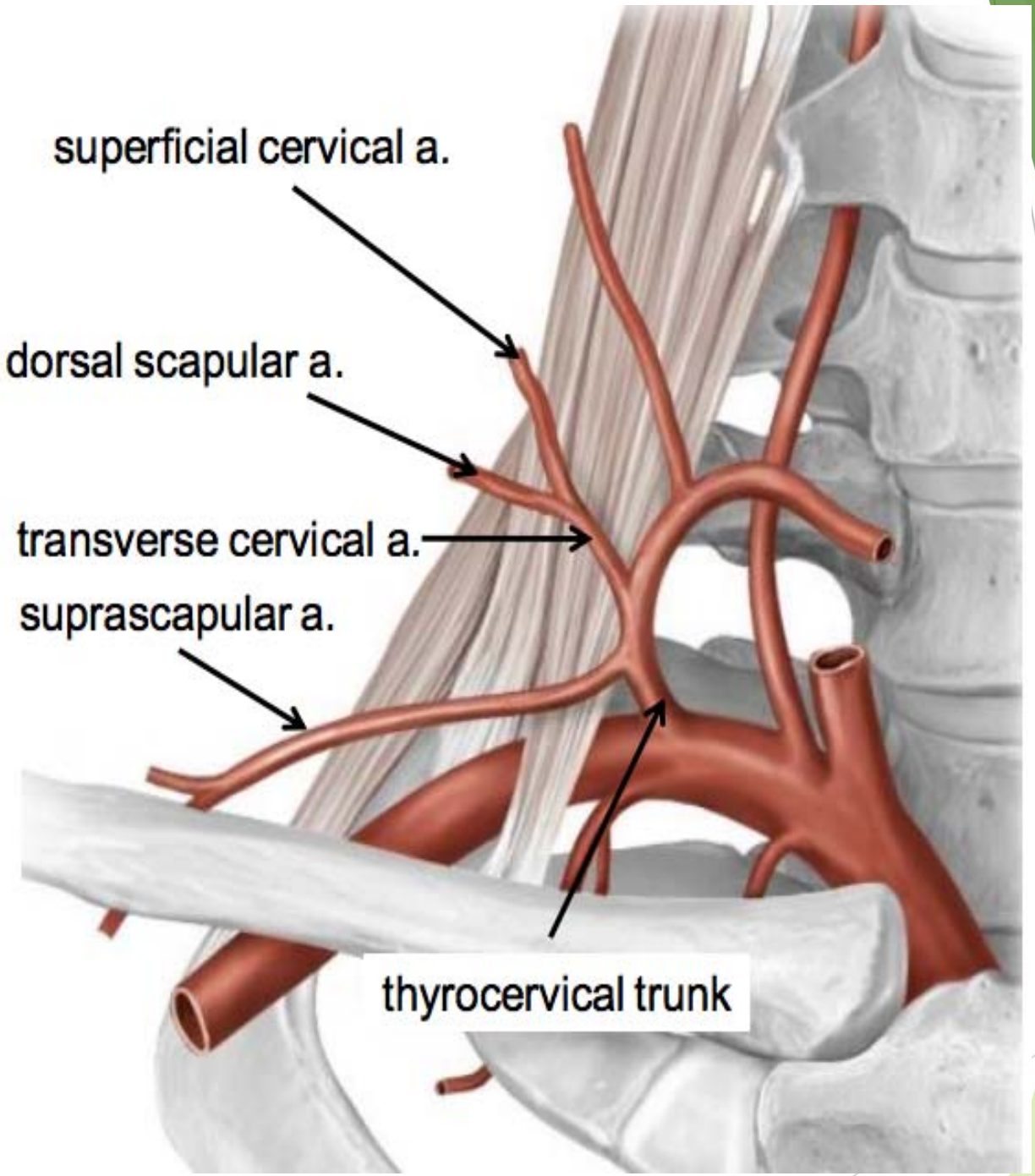
2- Transverse cervical artery.

3- Suprascapular artery



Lateral view of right side




superficial cervical a.
dorsal scapular a.
transverse cervical a.
suprascapular a.
thyrocervical trunk

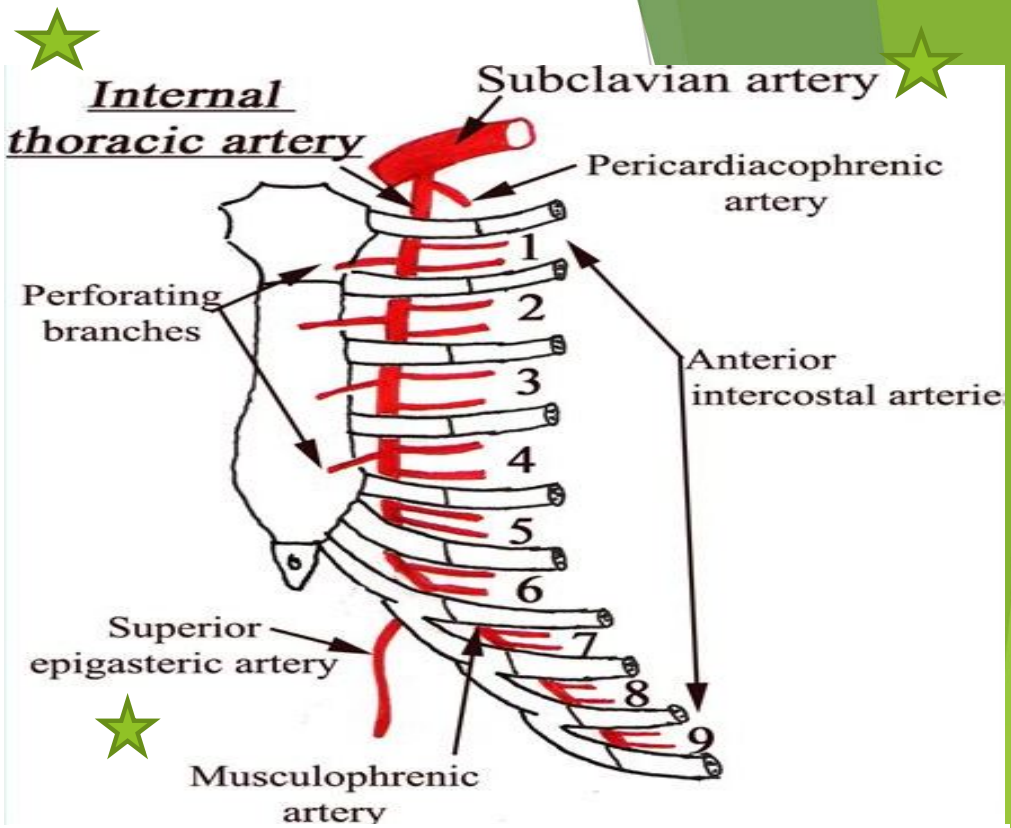
3-Internal thoracic artery

Origin: from the first part of the subclavain artery.

Termination: opposite the sixth intercostal space, by dividing into:

1- Superior epigastric artery.

2- Musculophrenic artery.



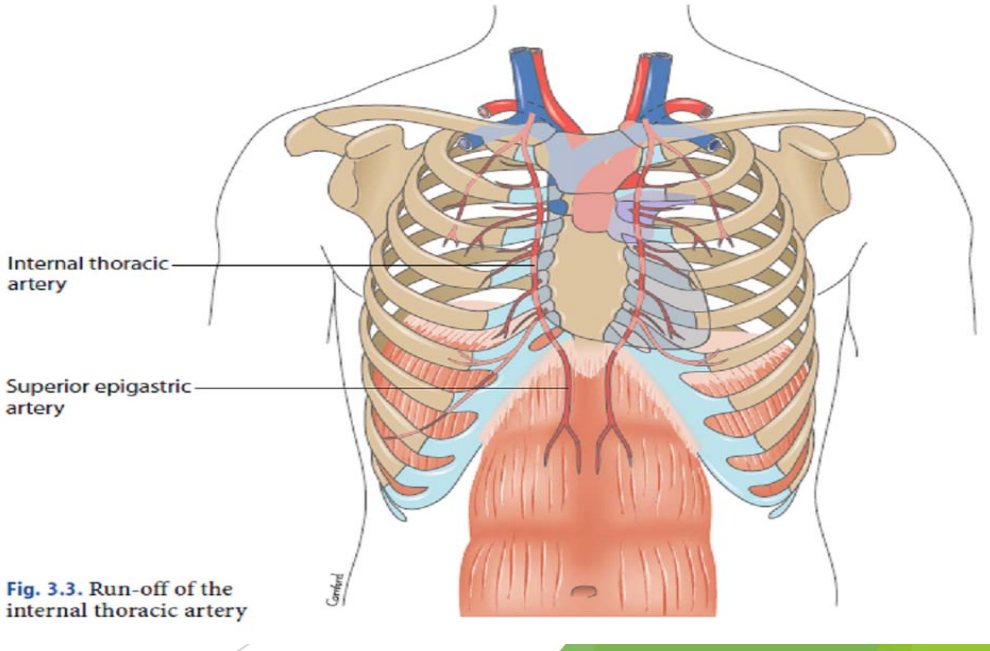


Fig. 3.3. Run-off of the internal thoracic artery

Second Part of the Subclavian Artery

Lies behind the scalenus anterior muscle.

Branches

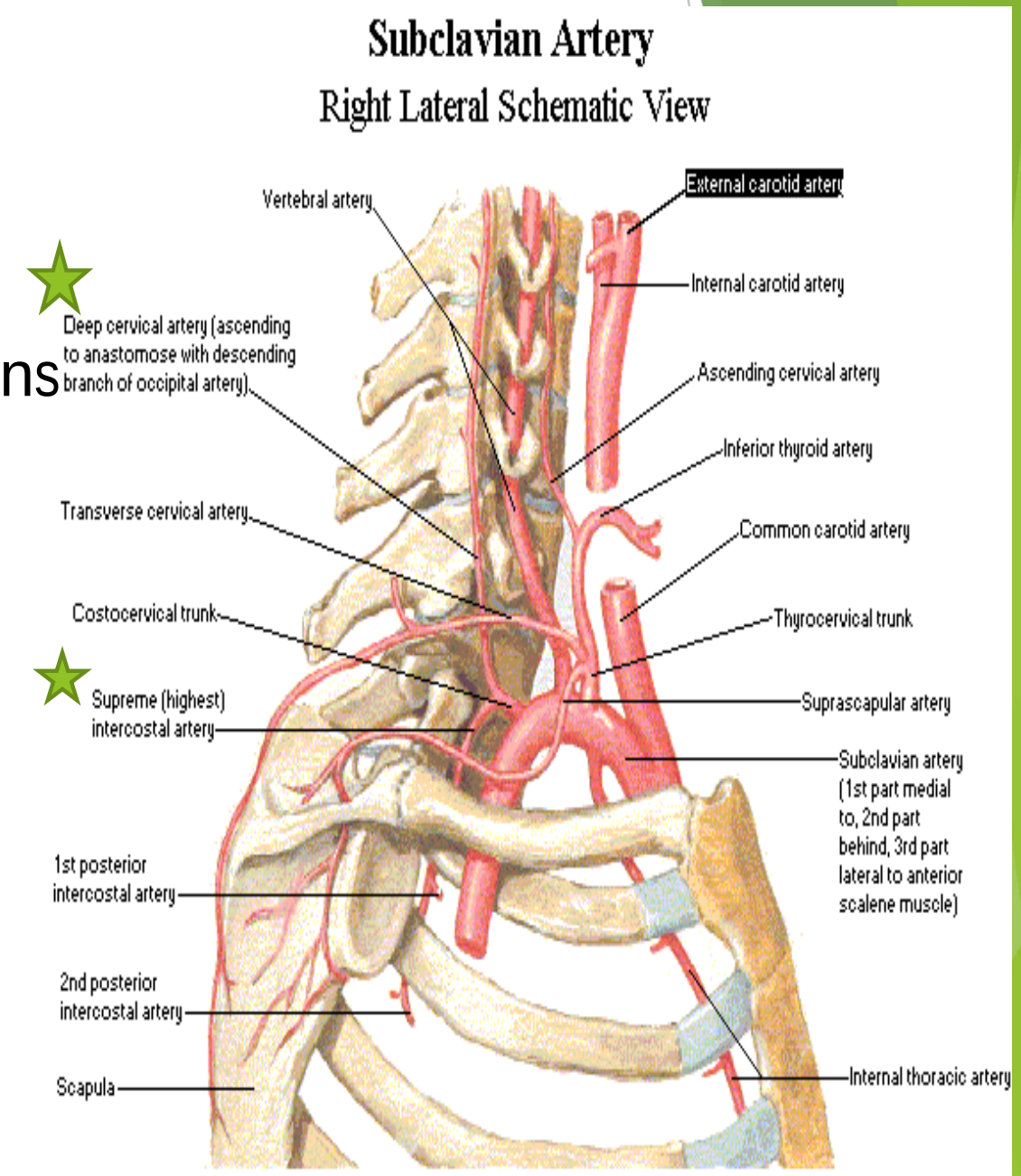
The costocervical trunk runs backward and divides into:

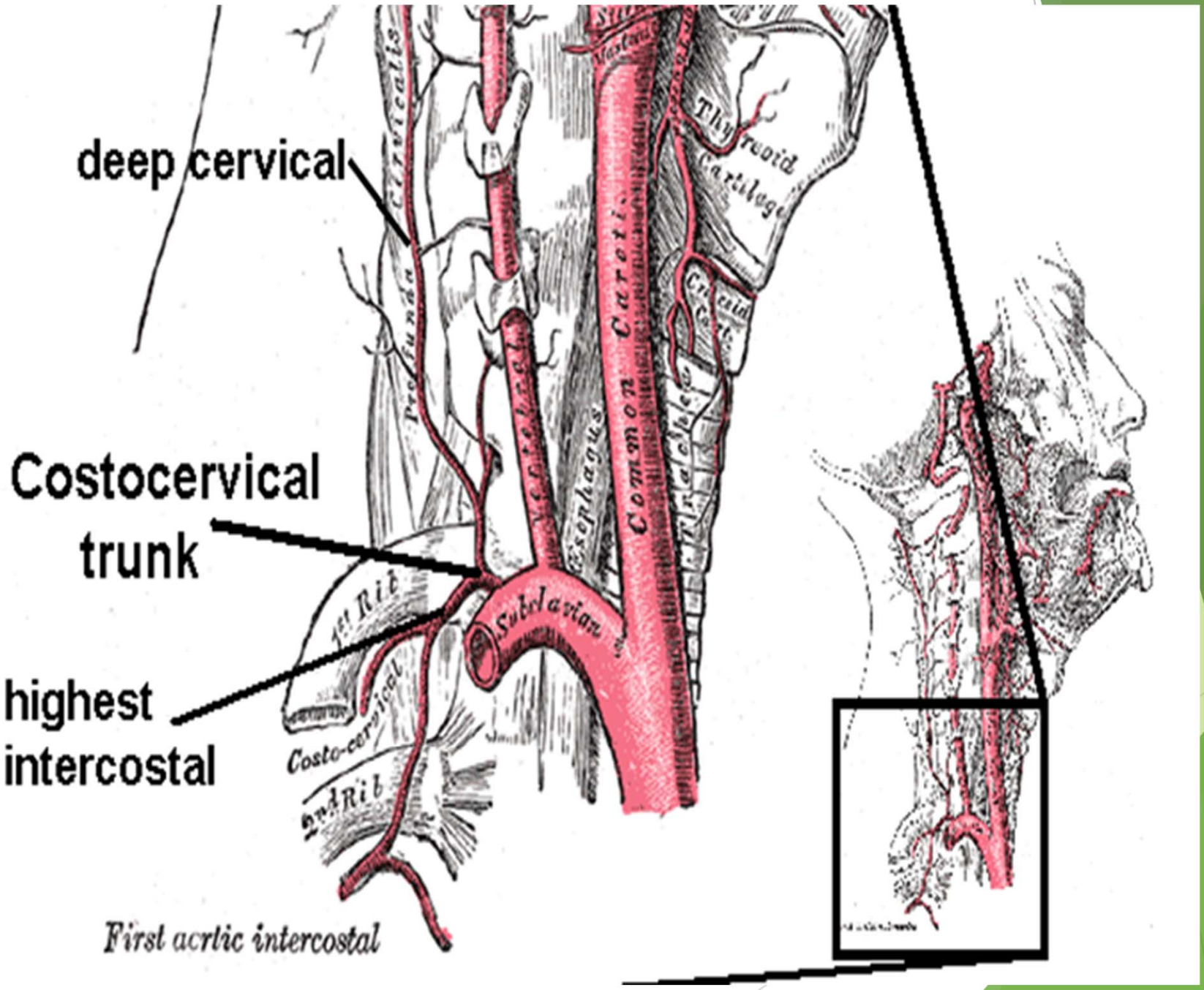
1- superior(highest) intercostal artery:

supplies the first and the second intercostal spaces

2- Deep cervical artery:

supplies the deep muscles of the neck




deep cervical
Costocervical trunk
highest intercostal
First aortic intercostal
Common Carotid
Subclavian
Thyroid Cartilage
Costo-cervical
2nd Rib

Third Part of the Subclavian Artery

extends from the lateral border of the scalenus anterior muscle across the posterior triangle of the neck to the lateral border of the first rib, where it becomes the axillary artery.
It has no branches.