

Sympathetic Chain

- Two Ganglionic Trunks

Extent

base of skull to C1

Position

- Paravertebral

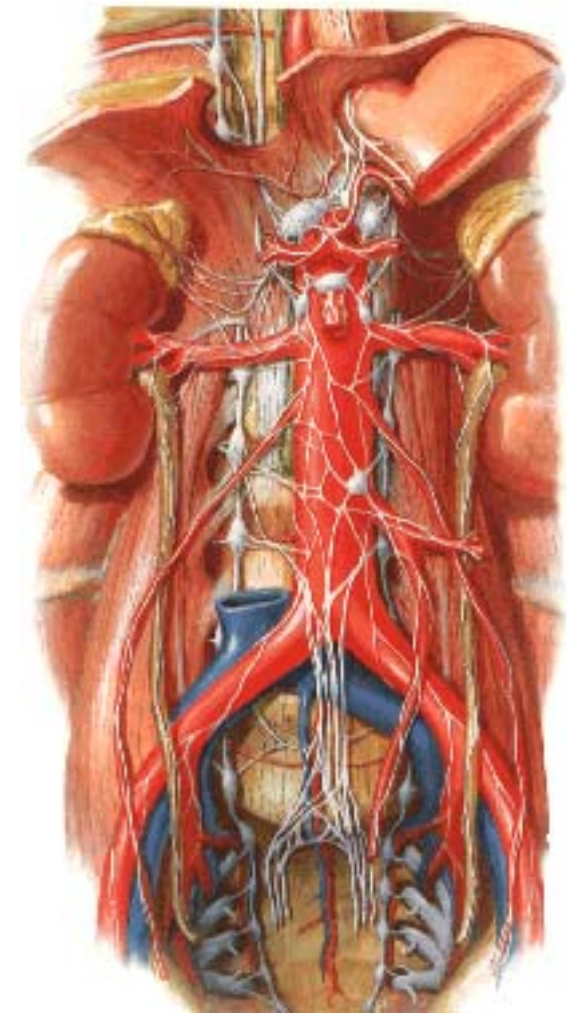
Termination

- fuse in front of coccyx to form an unpaired
Ganglionic Impar



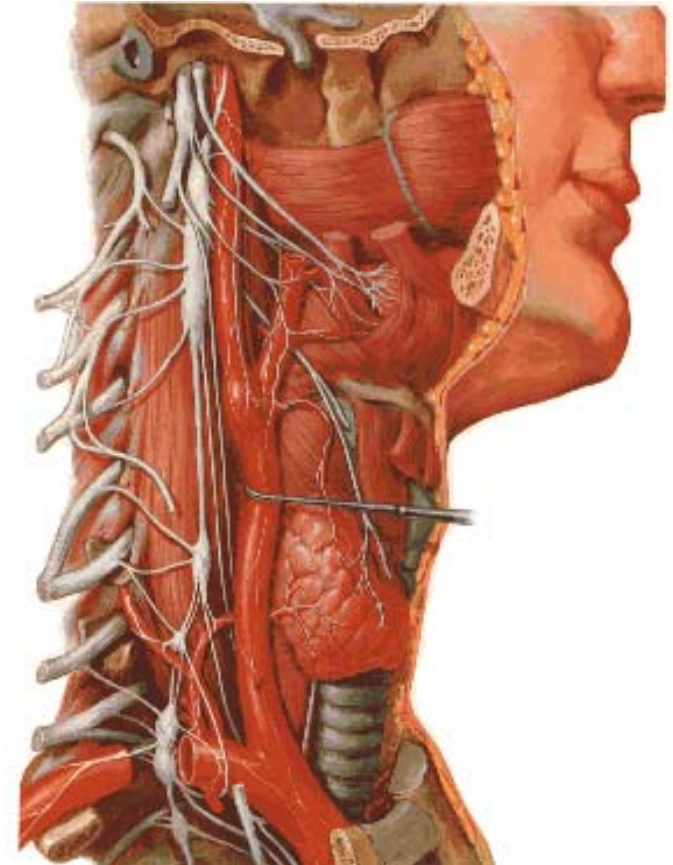
Sympathetic Chain

- 3 Ganglia in cervical part
- 11 Ganglia in thoracic Part
- 4 lumbar Ganglia
- 4 Sacral ganglia



Sympathetic Chain-cervical part

- **lie Behind** Carotid Sheath and
- **in front of** Longus colli & Longus Capitis muscles
- Initially
no. of Sympathetic ganglia
correspond to no. of Spinal Nerves
- Later
- **Superior** formed by fusion
of upper 4 cervical Ganglia
- **Middle** by 5th and 6th
- **Inferior** by joining of
7th and 8th cervical ganglia

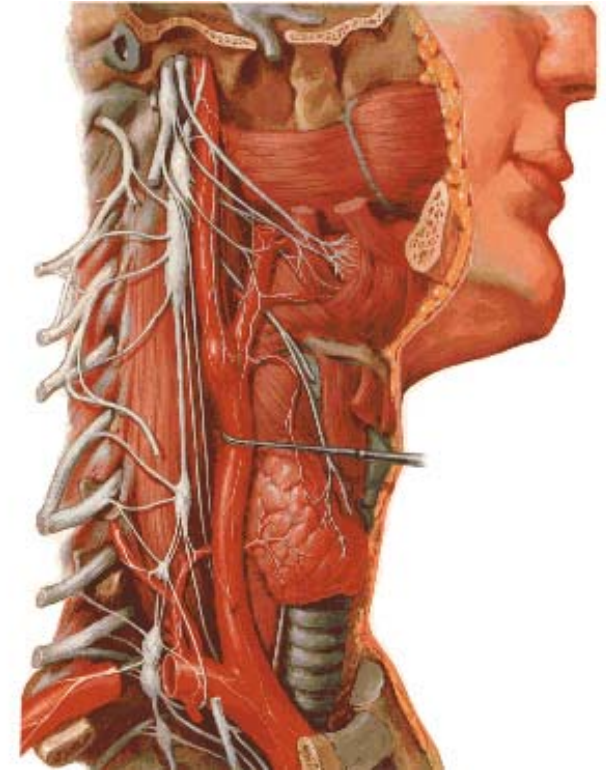


Sympathetic Chain – Cervical Part

- Cervical Part Ganglia
 - Superior Cervical ganglia
 - Middle Cervical Ganglia
 - Inferior Cervical ganglia

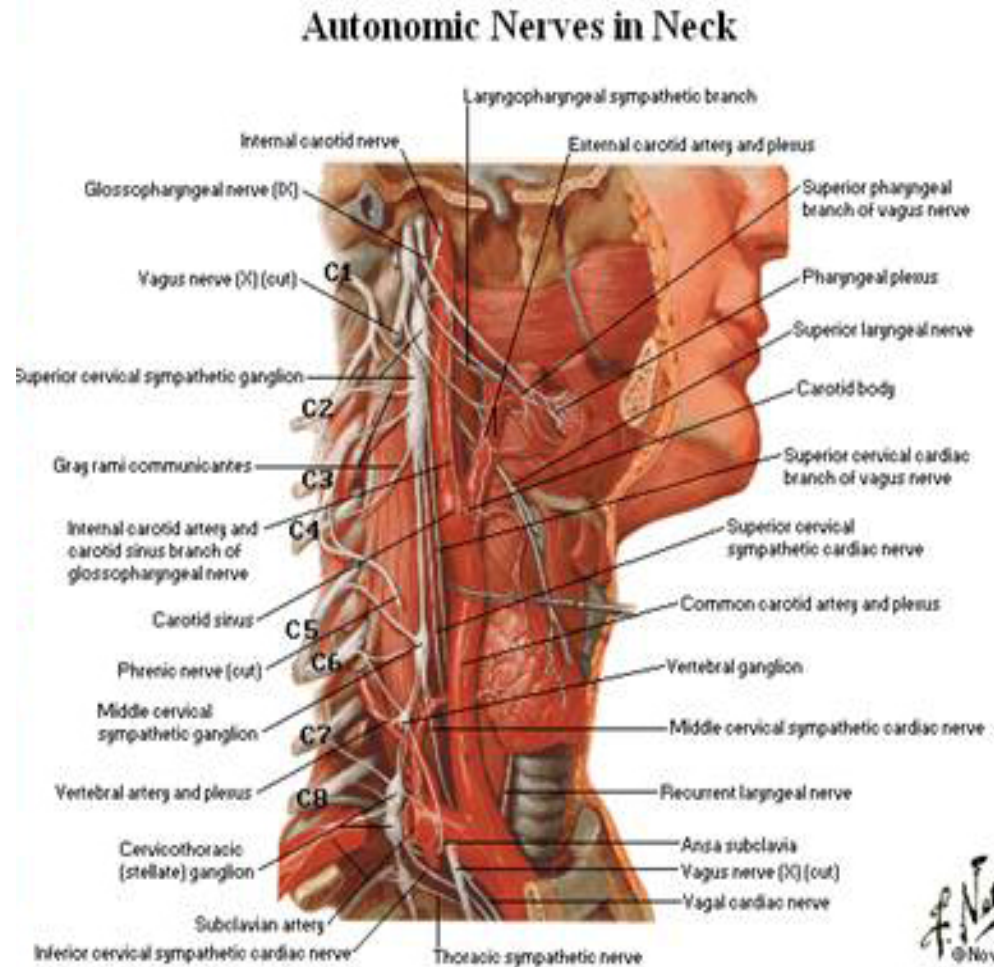
Sometimes

Inferior cervical and first Thoracic fuse to form a **Cervico-Thoracic** or **Stellate Ganglia**



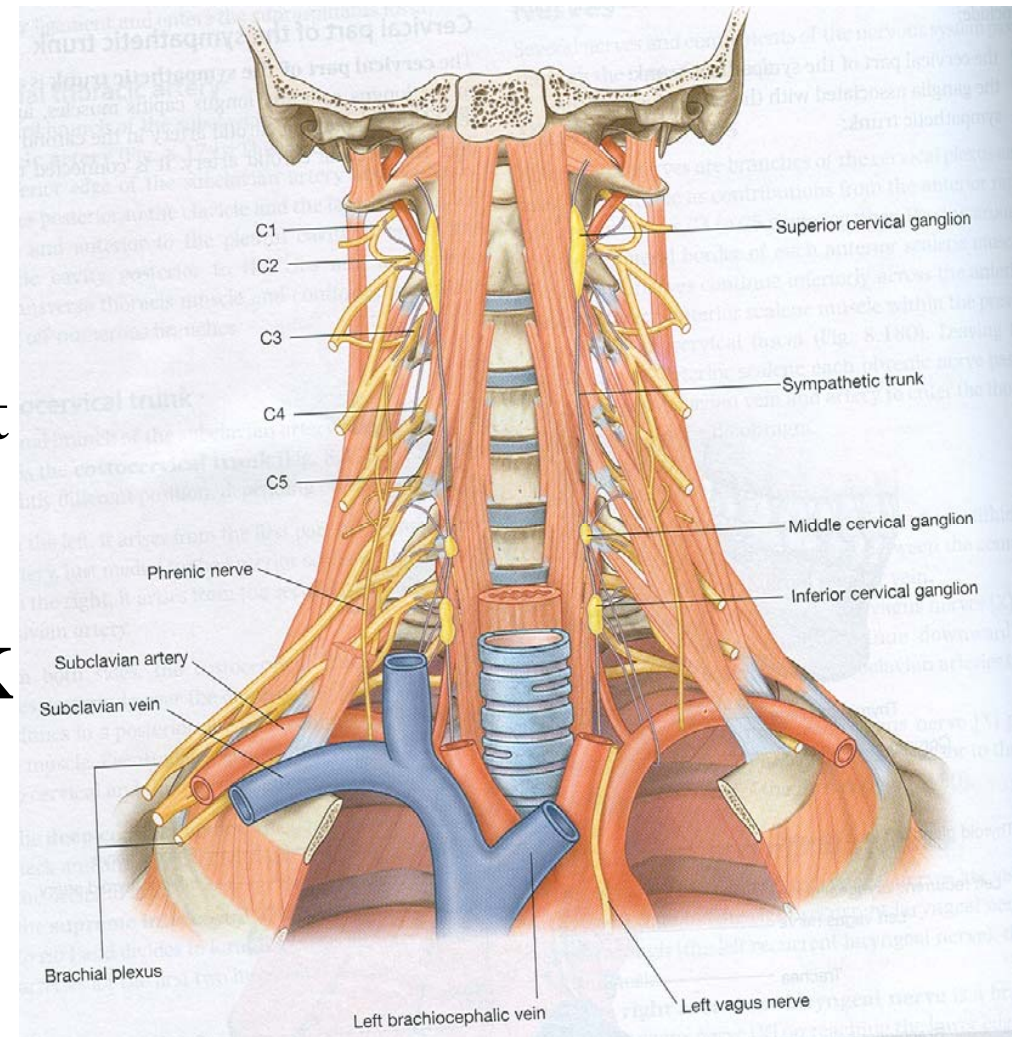
Sympathetic Chain – Cervical Part

- Do not receive white rami communicantes from cervical spinal segments
- LAT. HORN CELLS OF T1-T5 PROVIDE PRE-GANGLIONIC FIBRES
- Gives grey rami communicantes to all 8 cervical nerves



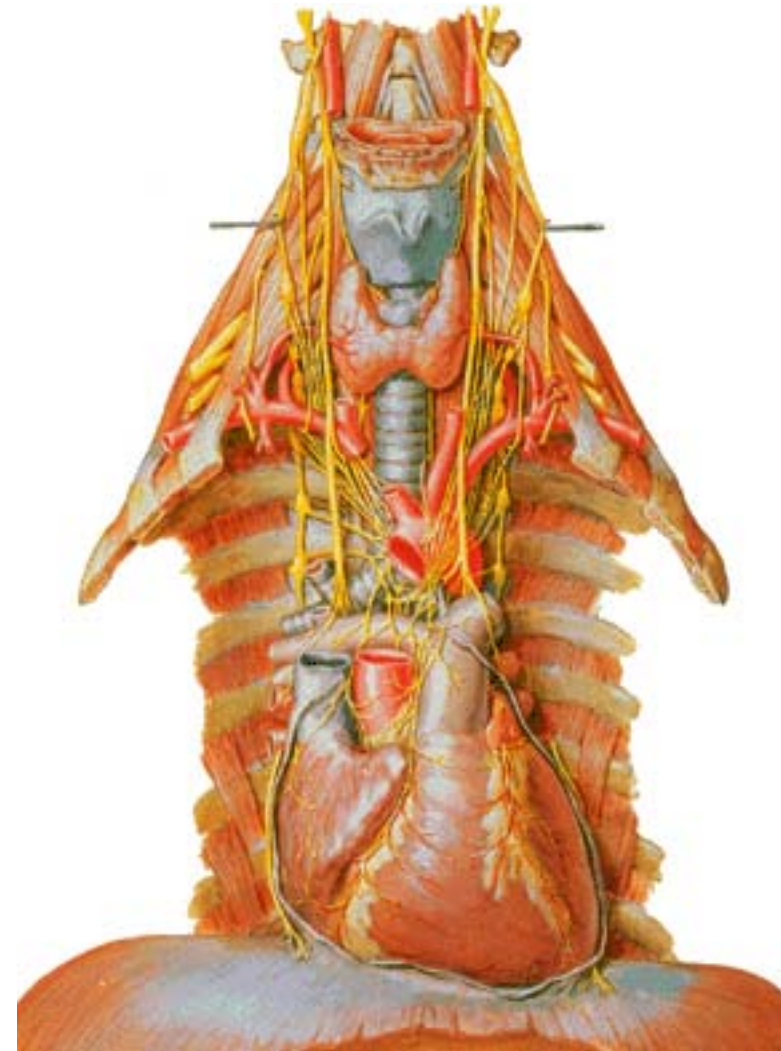
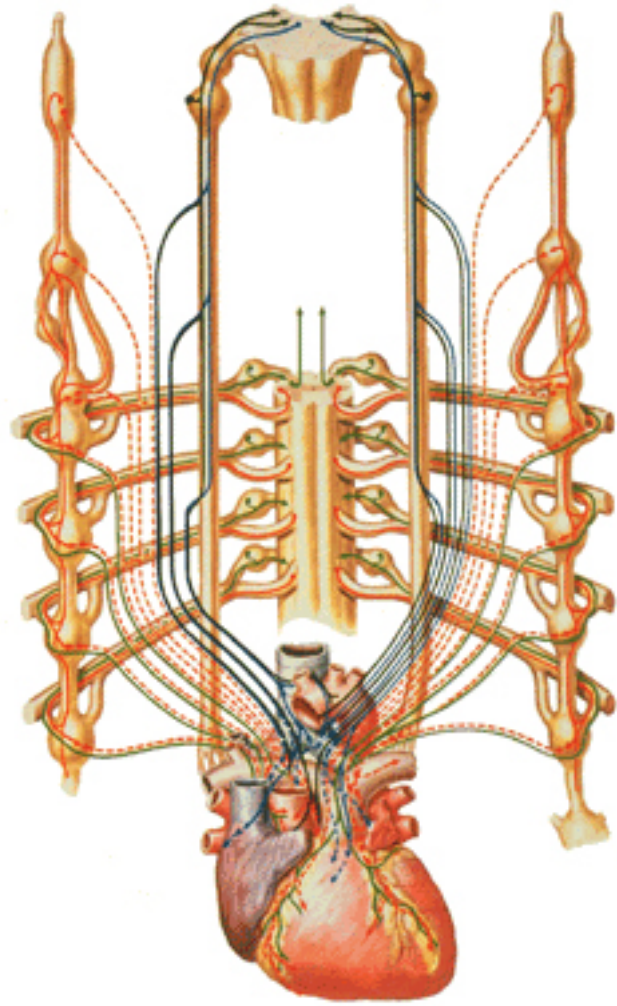
Sympathetic Chain – Cervical Part

- **GANGLION**
- Contains-multipolar post ganglionic neurons & few interneurons (chromaffin or SIF cells*)
- *modulate activities of post ganglionic neurons by dopamine
- **SYMPATHETIC TRUNK** conveys pre & post ganglionic motor & sensory fibres between ganglia



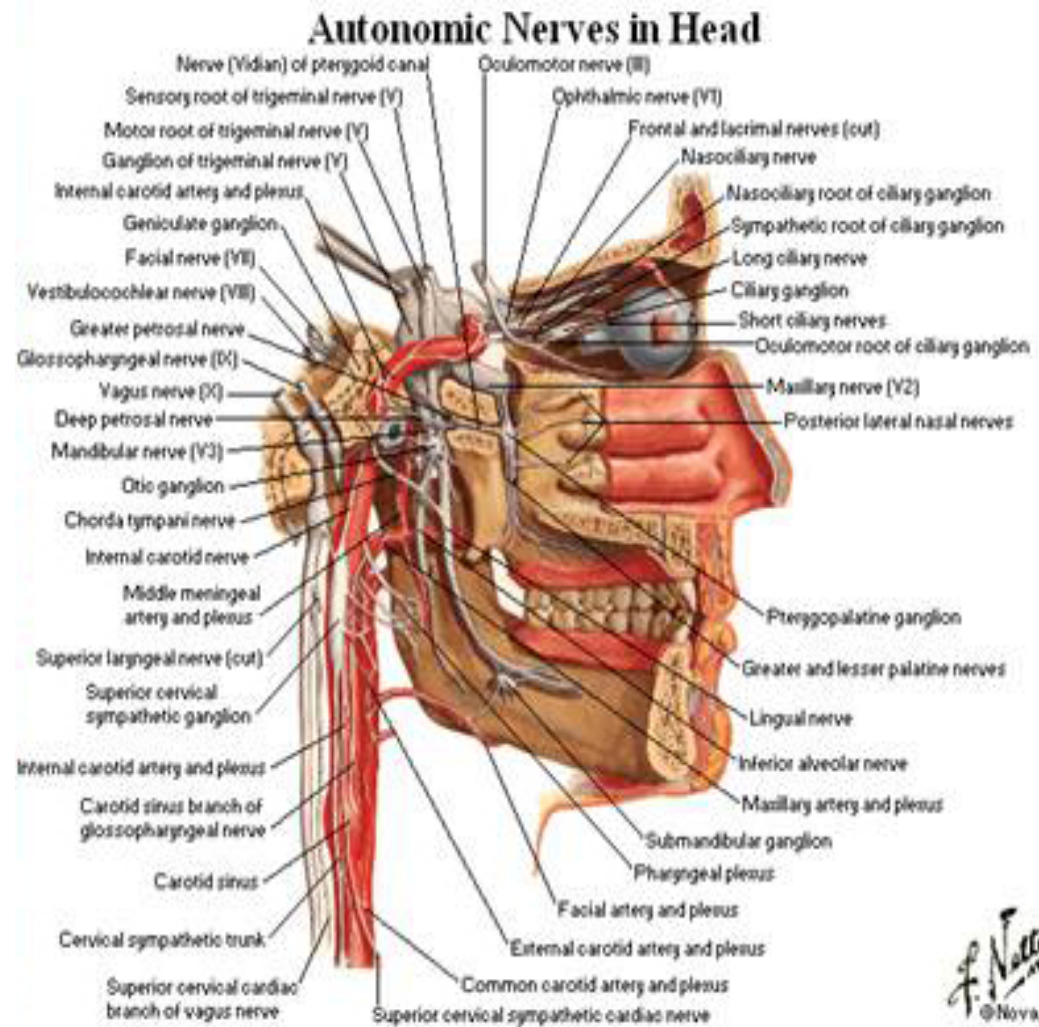
Innervation of Heart

Schema



SUPERIOR CERVICAL GANGLION

- Largest ,fusiform, 2.5cm length
- Fuses upper four cervical ganglia
- Situation- opposite C2 & C3 Vertebrae behind ICA & in front of l. capitis
- Receives pre ganglionic fibres mostly from upper three thoracic segments
- BRANCHES (all convey post ganglionic fibres & some sensory fibres)



SUPERIOR CERVICAL GANGLION

- BRANCHES
- Lateral-grey rami comm. to C1-C4 nerves & (C5-C8)
- Medial-laryngo-pharyngeal
- cardiac (no pain fibr.)

Anterior-ramify around CCA, ECA
& its branches

Ascending-INTERNAL
CAROTID NERVE

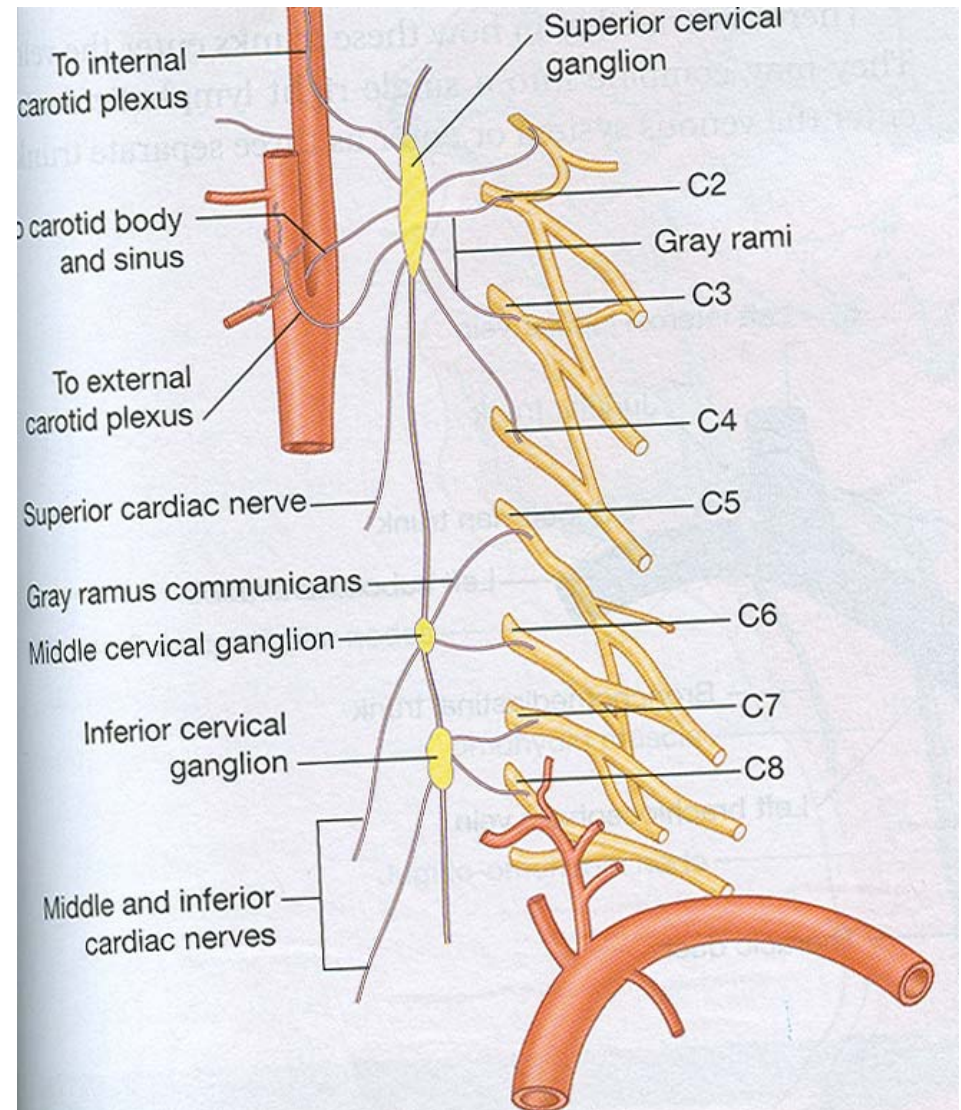
-carotido-tympanic

-deep petrosal

-communicating (v, iii, iv, v, & vi)

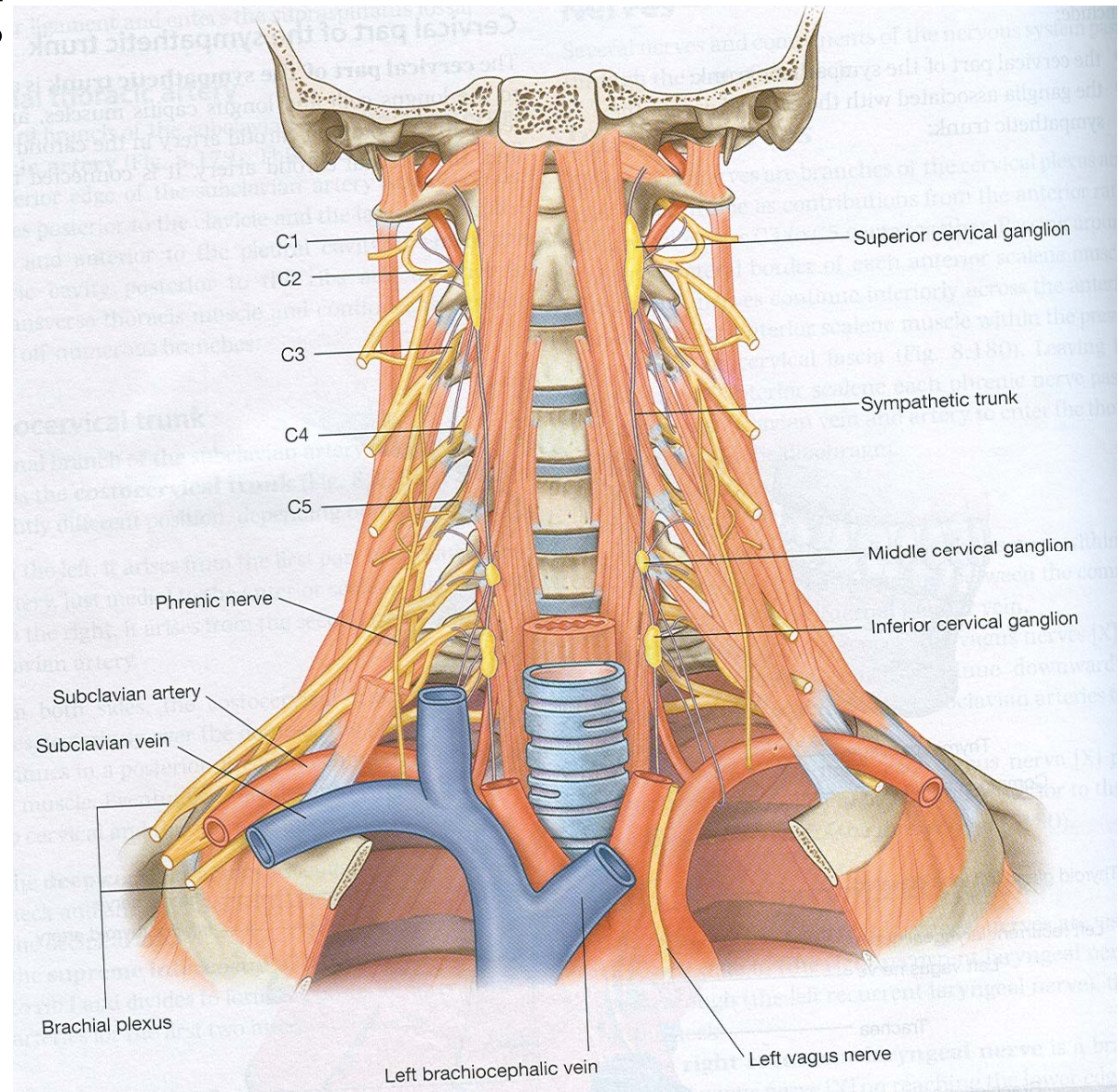
-nervus conarii (pineal gland)

Term. communicating (ant. &
middle cerebral ophthalmic
arteries)



Middle Cervical ganglion

- Formed by joining of Two ganglia
- Corresponding C5 and C6 Nerves
- Situated Opposite C6 Vertebra
- Between C C A in front and the loop of the I T Art Behind



Middle Cervical ganglion

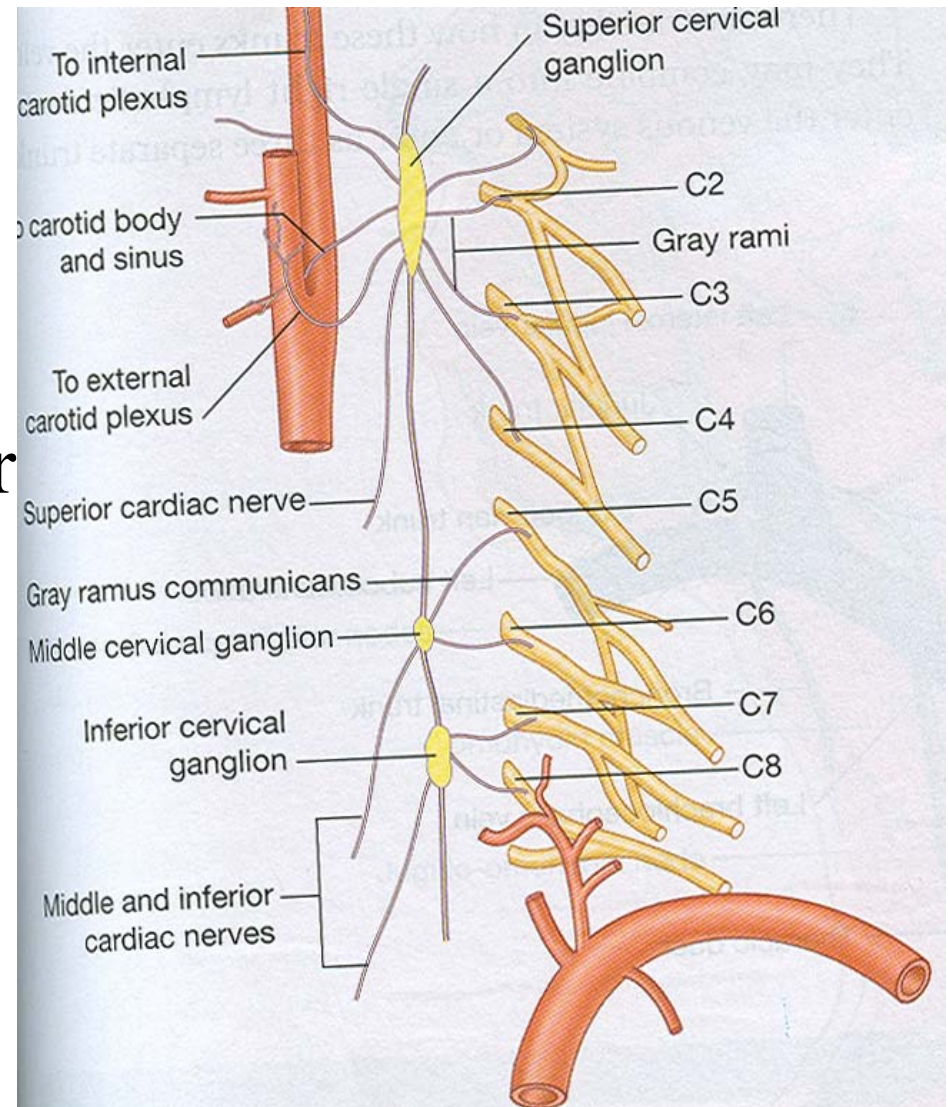
Communications

Connected with
Inf. Cer. Ganglion
by two cords

Posterior cord splits
to enclose the vertebral artery

Anterior Cord forms

Ansa Subclavia which
loops in front and
below the first part
of the subclavian artery



Middle Cervical ganglion

Branches

Lateral Branches

Send gray rami

communicans to

C5 and C6 spinal nerves

Medial Branches

a) Thyroid branches

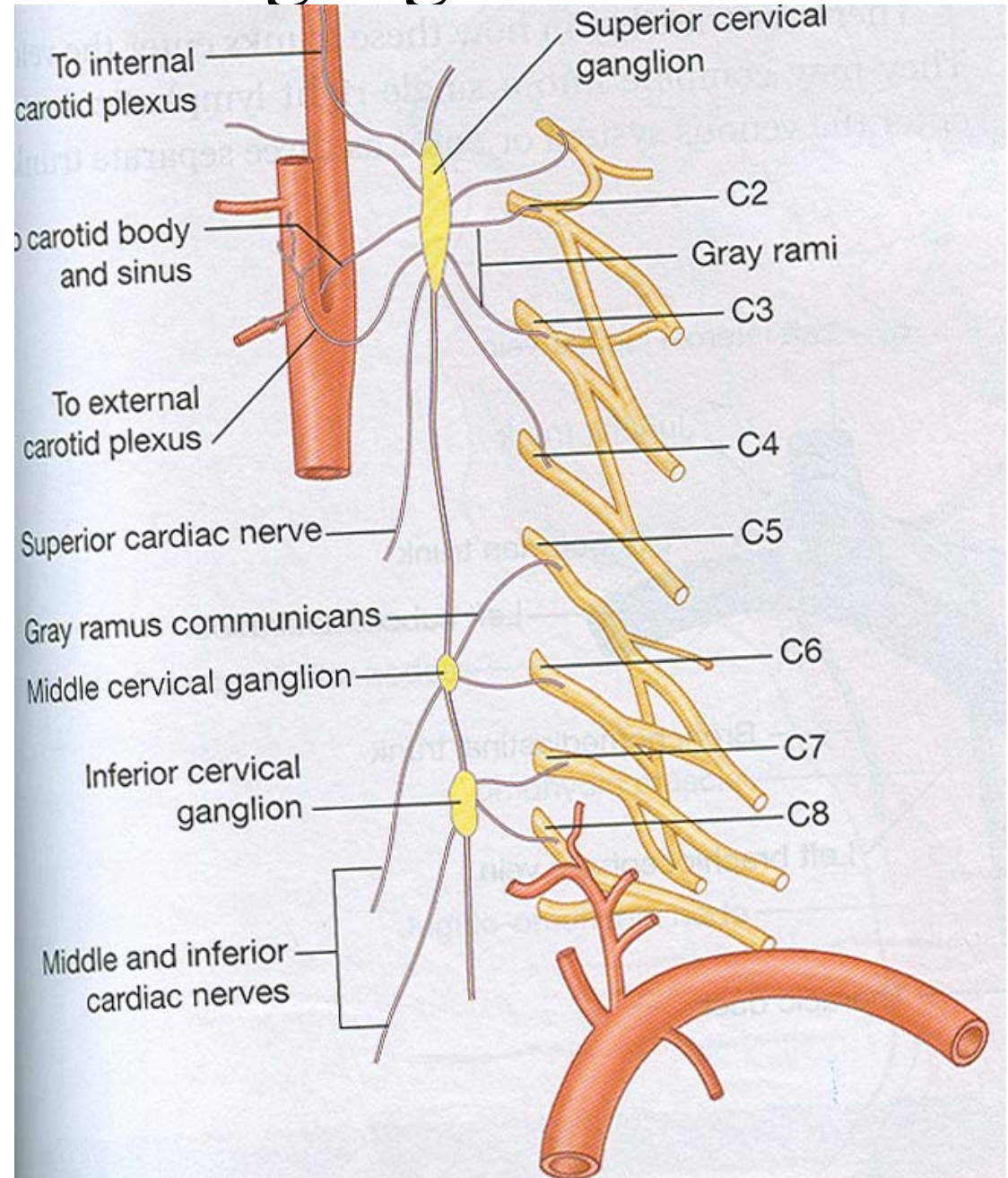
accompany the ITA

and supply the Gland

b) Cardiac branches

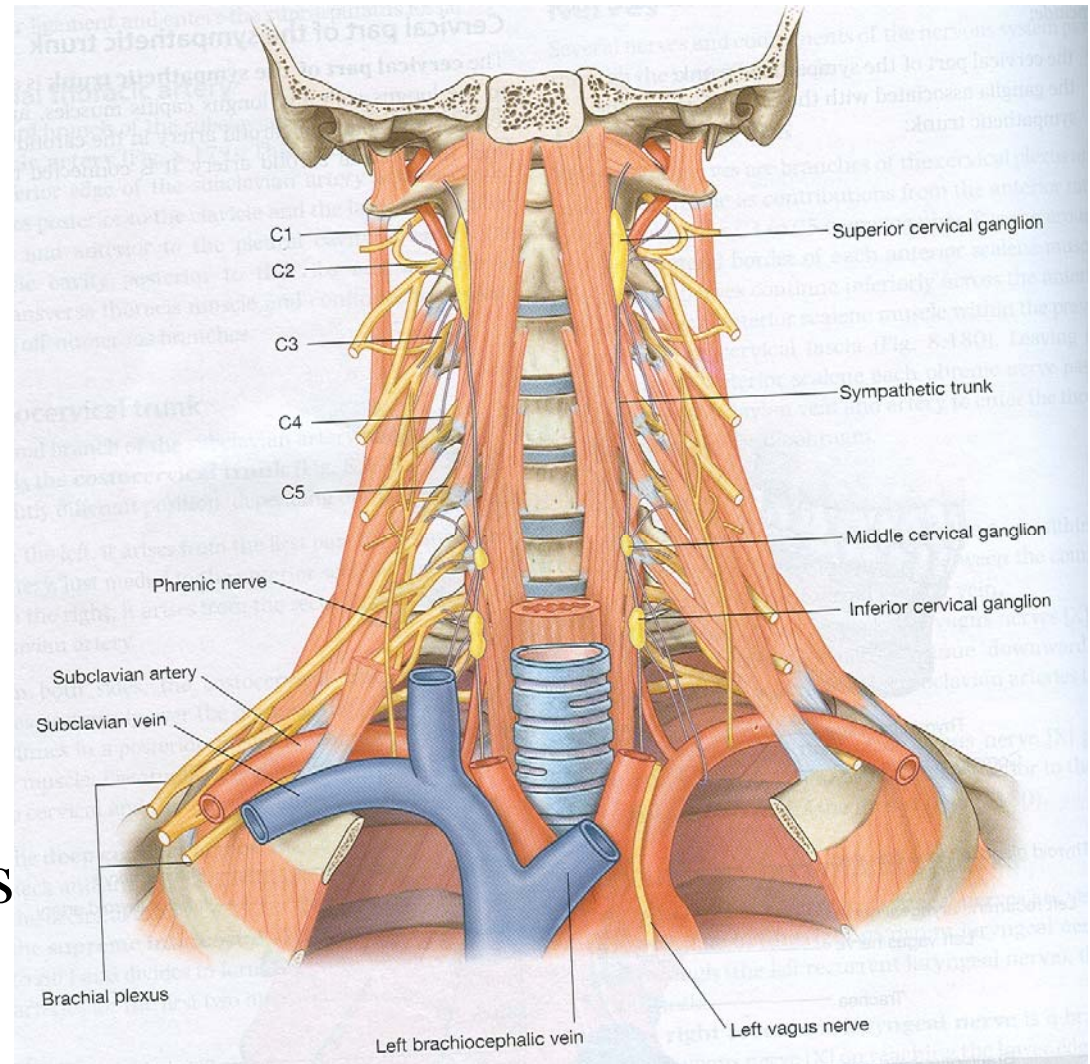
join to form deep

cardiac plexus



Inferior Cervical Ganglion

- Formed by Joining of Two ganglia corresponding with C7 and C8 Nerves
- Sometimes inferior joins with first Thoracic ganglia to form Cervico- Thoracic or Stellate ganglion
- Situation – between trans Pro. of C7 vertebra and the neck of First rib



Inferior Cervical Ganglion

- **Relations**

- In front –

- First Part of Vertebral Artery and corresponding Vein
- Thoracic duct (Lt) or Rt Lymphatic duct
- Carotid Sheath
- Cervical Pleura covered with Suprapleural Memb.

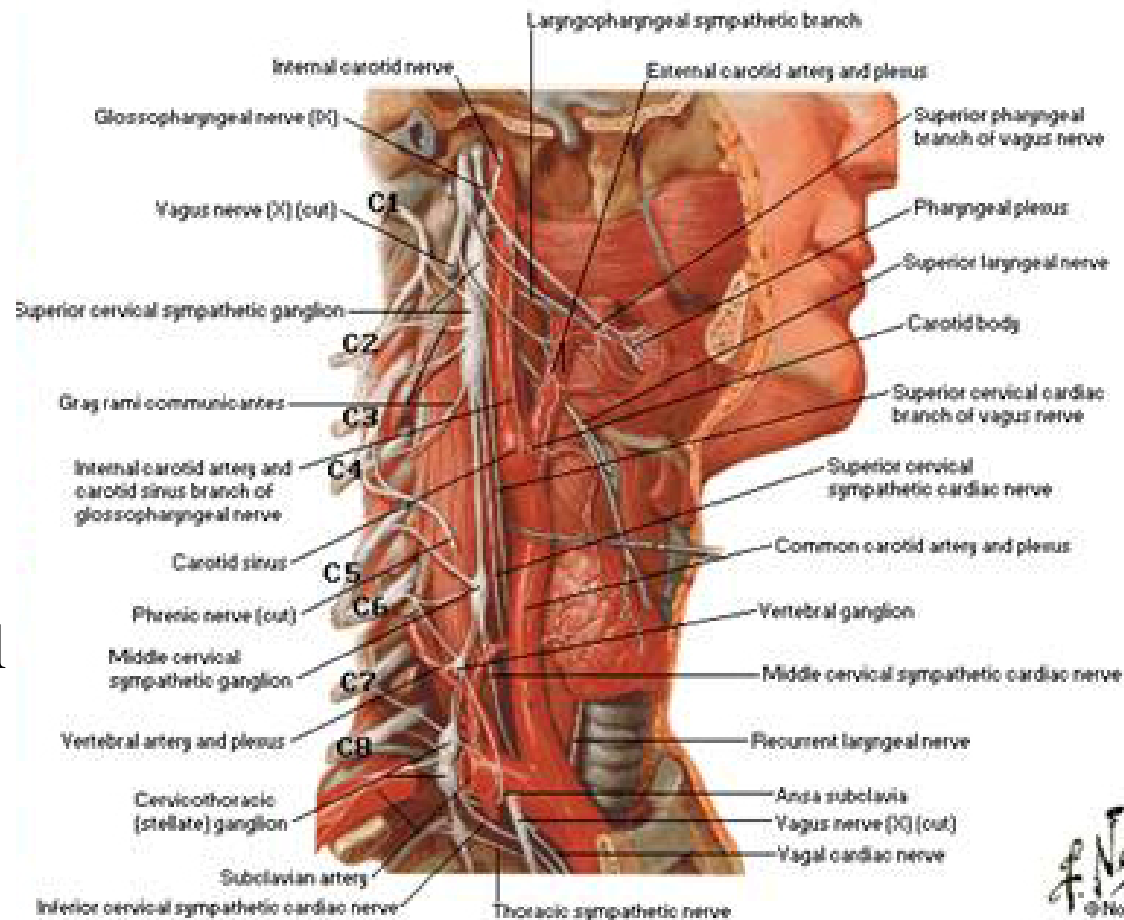
Behind

C8 nerves

Medially – Longus Coli Muscle

Laterally – Costo cervical Trunk

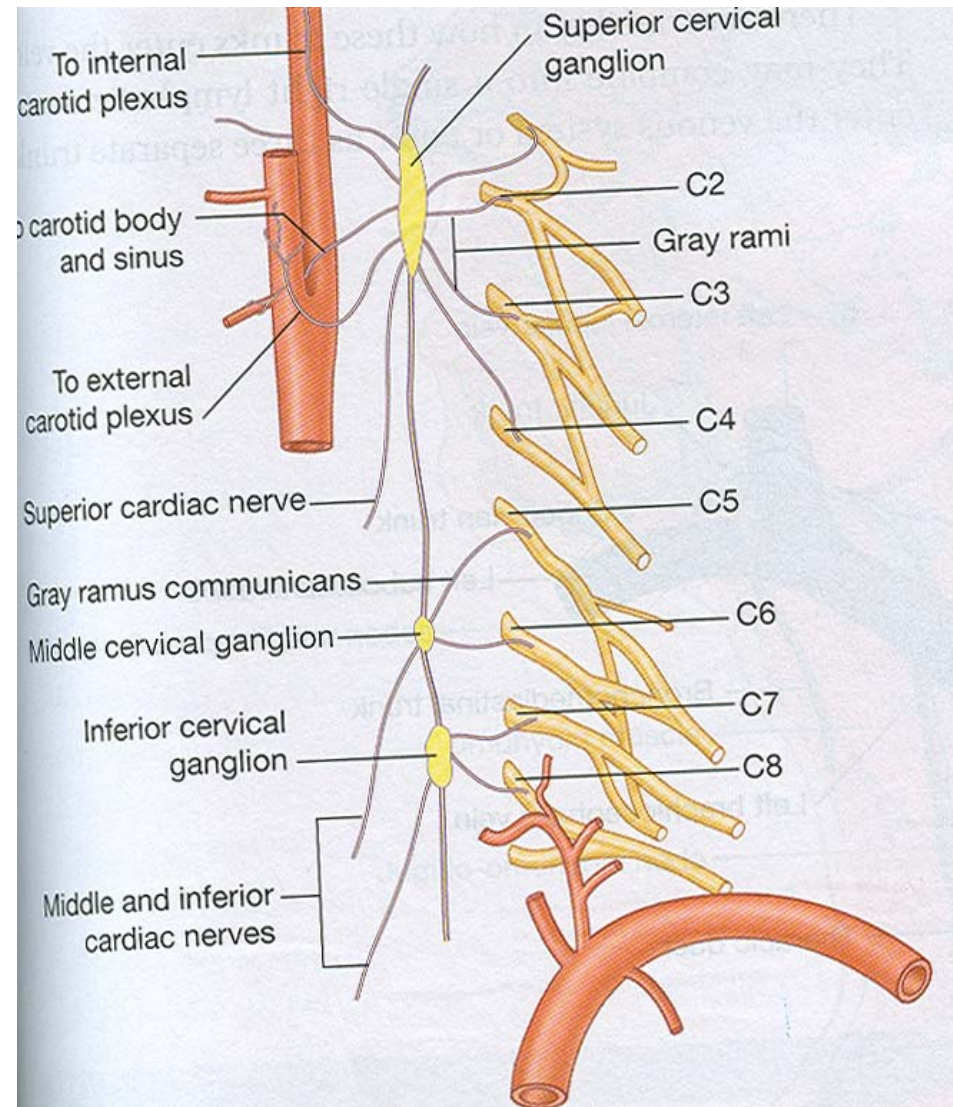
Autonomic Nerves in Neck



F. Netter
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INFERIOR CERVICAL GANGLION

- Branches-grey rami communicantes to C7& C8 (T2-T7 SPINAL SEGMENTS- UPPER LIMB)
- Cardiac (T1-T5)-convey pain fibres(middle & inferior ganglia)
- Vascular to subclavian artery
- Vertebral



Applied Anatomy

- Horner's Syndrome
- Raynaud's Disease
- Angina Pectoris