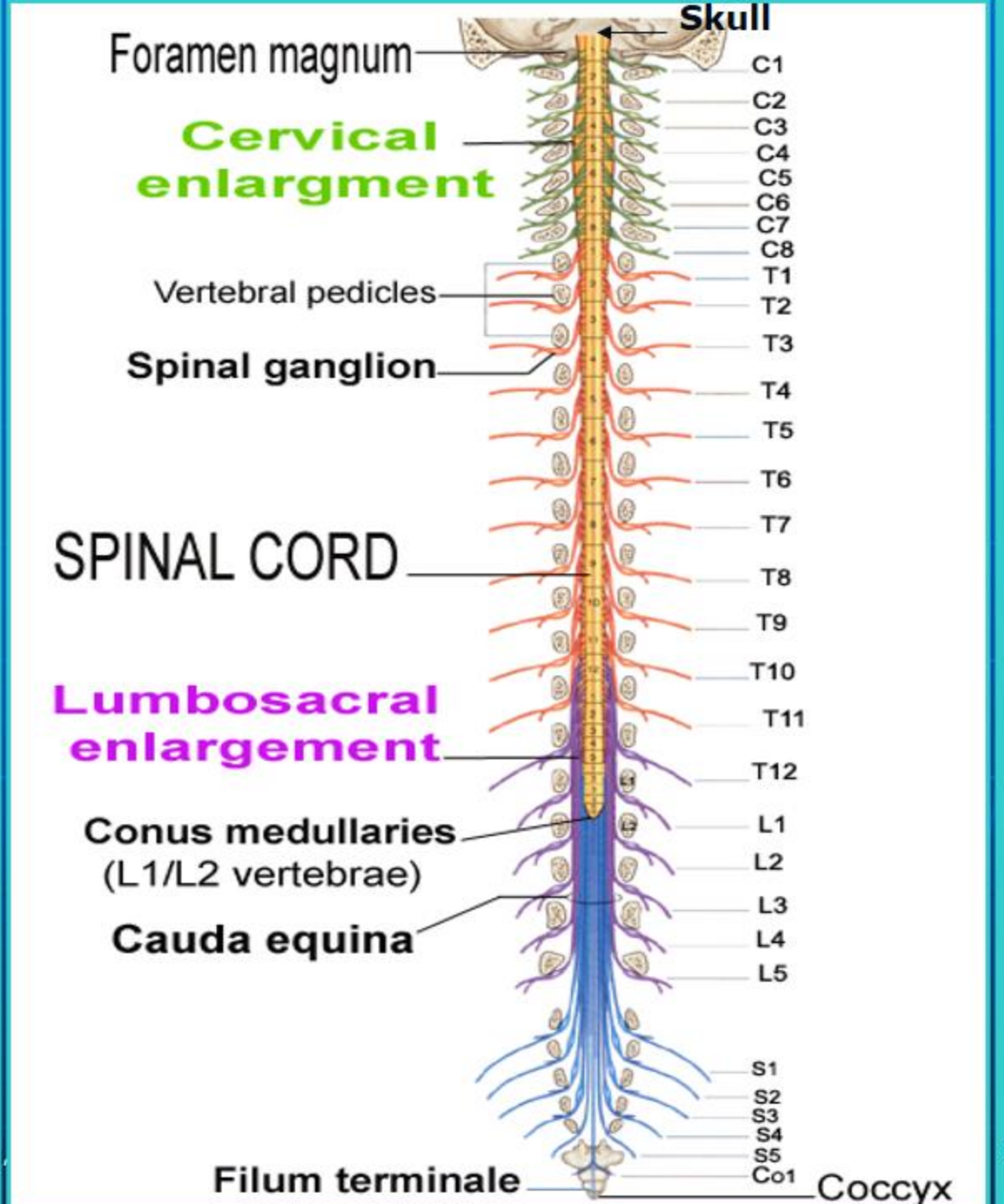
Brachial Plexus

Dear blooming doctors.

I hope that I shed a light in your way for supremacy.

Spinal Cord

- Elongated cylindrical cable inside vertebral canal of vertebral column.
- Extends from **base of the skull** to the disc between L1/L2 vertebrae.
- Has **2 N**etwork of nerves (plexus), that runs **F**rom and **T**o the limbs forming 2 nerve enlargements:
  - **Upper: Cervical .**
  - **Lower: Lumbosacral.**

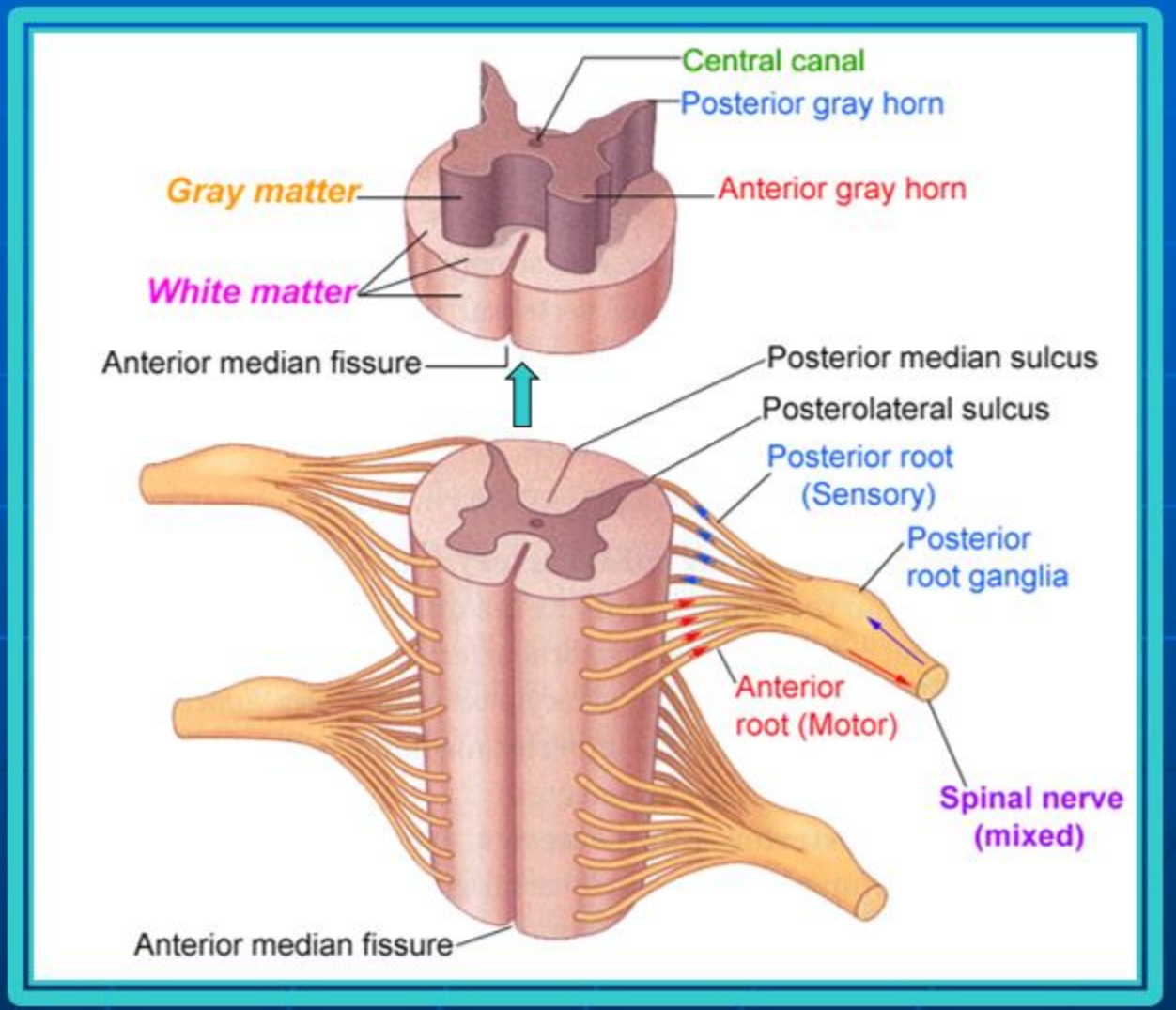


Spinal segment

- Spinal cord organized into 31 segments.
- Each segment form of **2** parts:
  - **Gray matter, inner →**

    H-shaped area full with nerve cells (neurons).
  - **White matter, outer →**

    Full with bundles of nerve fibers.
- Each segment gives a pair of spinal nerves (Right + Left) = **31 pairs**.



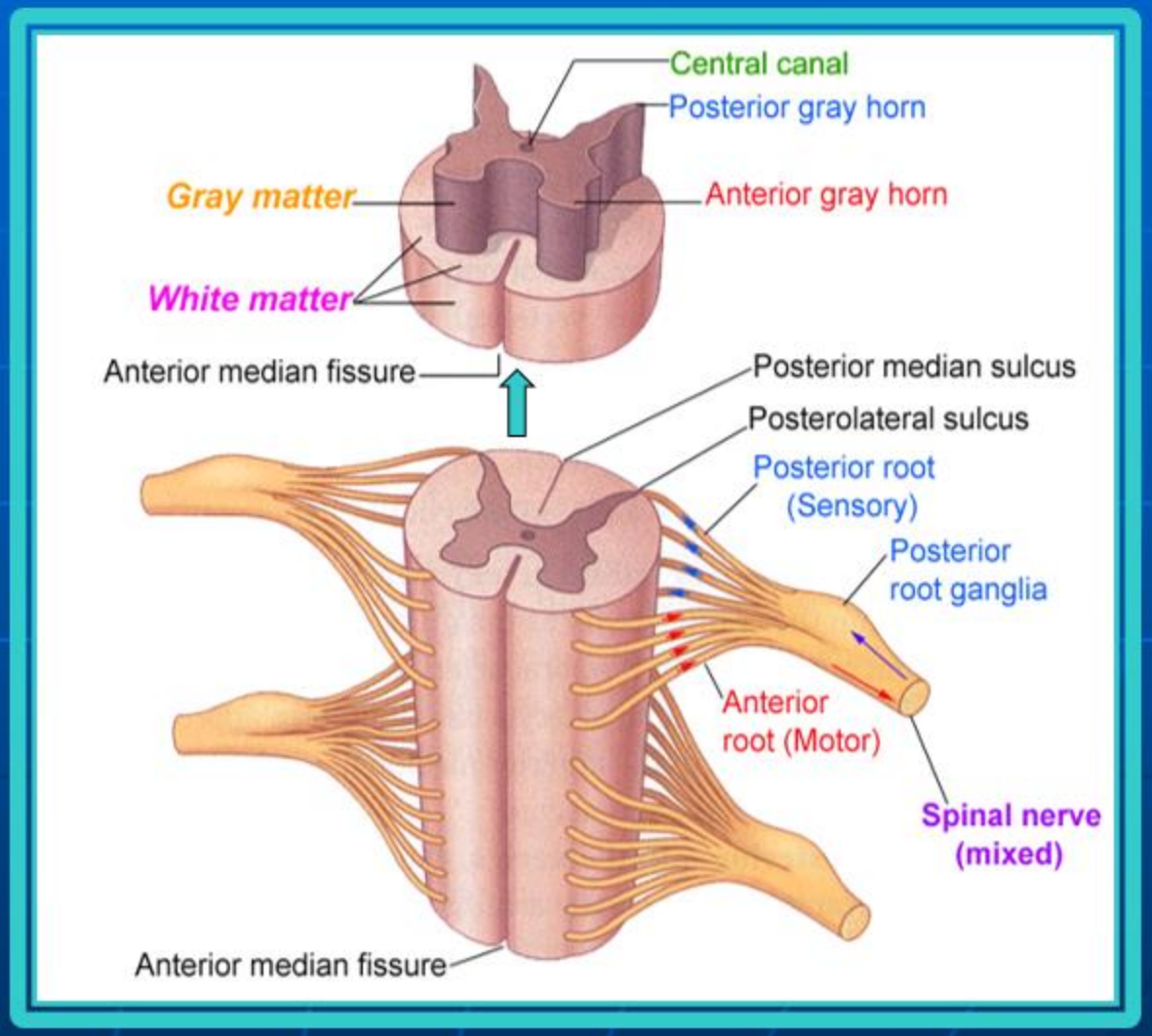
Spinal segment- Gray matter

Gray matter subdivided into:

- **Anterior horn:**
  - Contain motor cells

    To give motor impulses for contraction of skeletal muscles.

- **Posterior horn:**
  - Contain sensory cells that Receives sensory input.

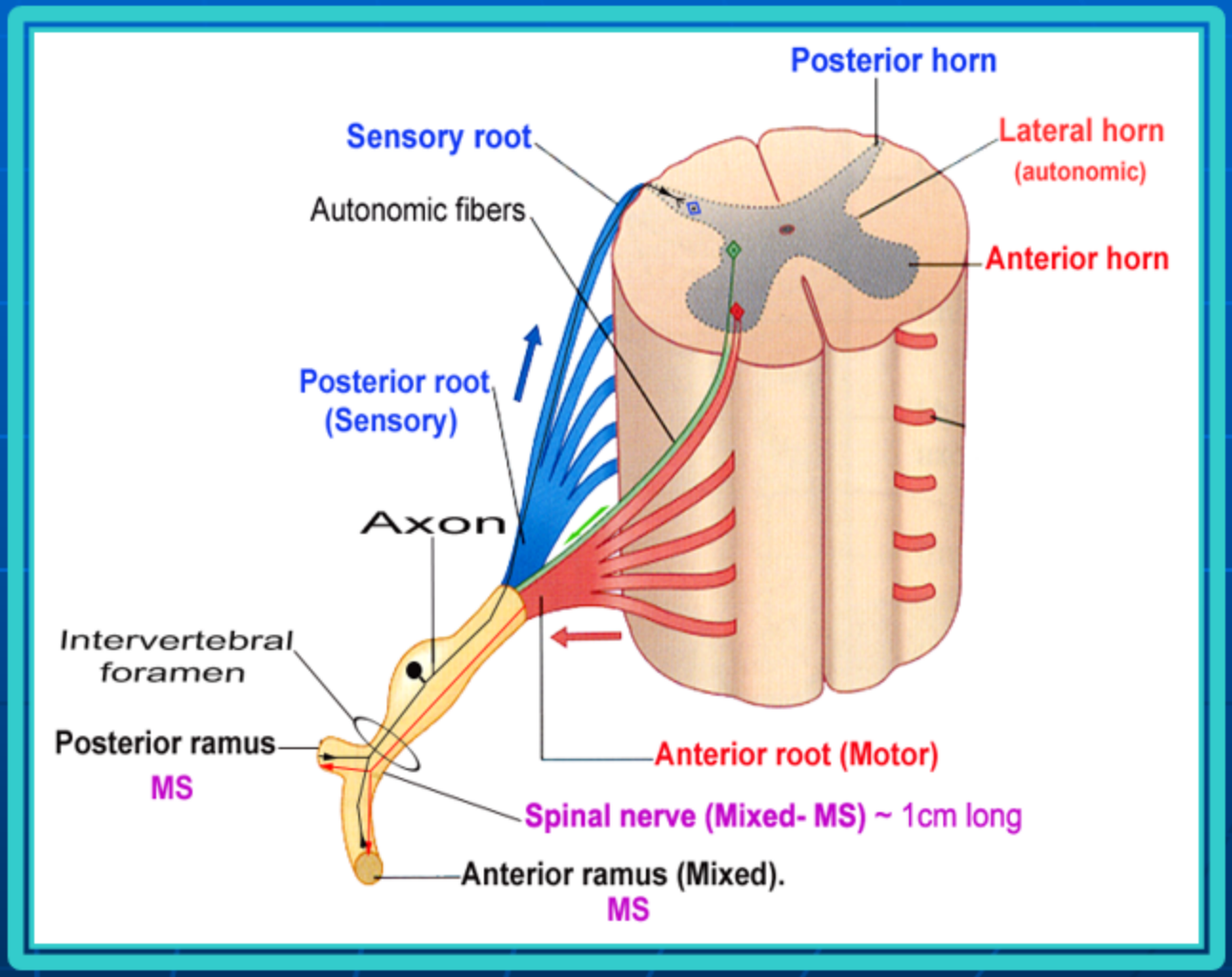


Spinal nerves-1

31 pairs

Each spinal nerve consists:

- **Anterior motor root:**
  Carry **motor** stimuli ***out*** from motor cells at the anterior horn to the spinal nerve.
- **Posterior sensory root:**
  Carry ***sensations*** from spinal nerve to posterior horn cells.



Spinal nerves-2

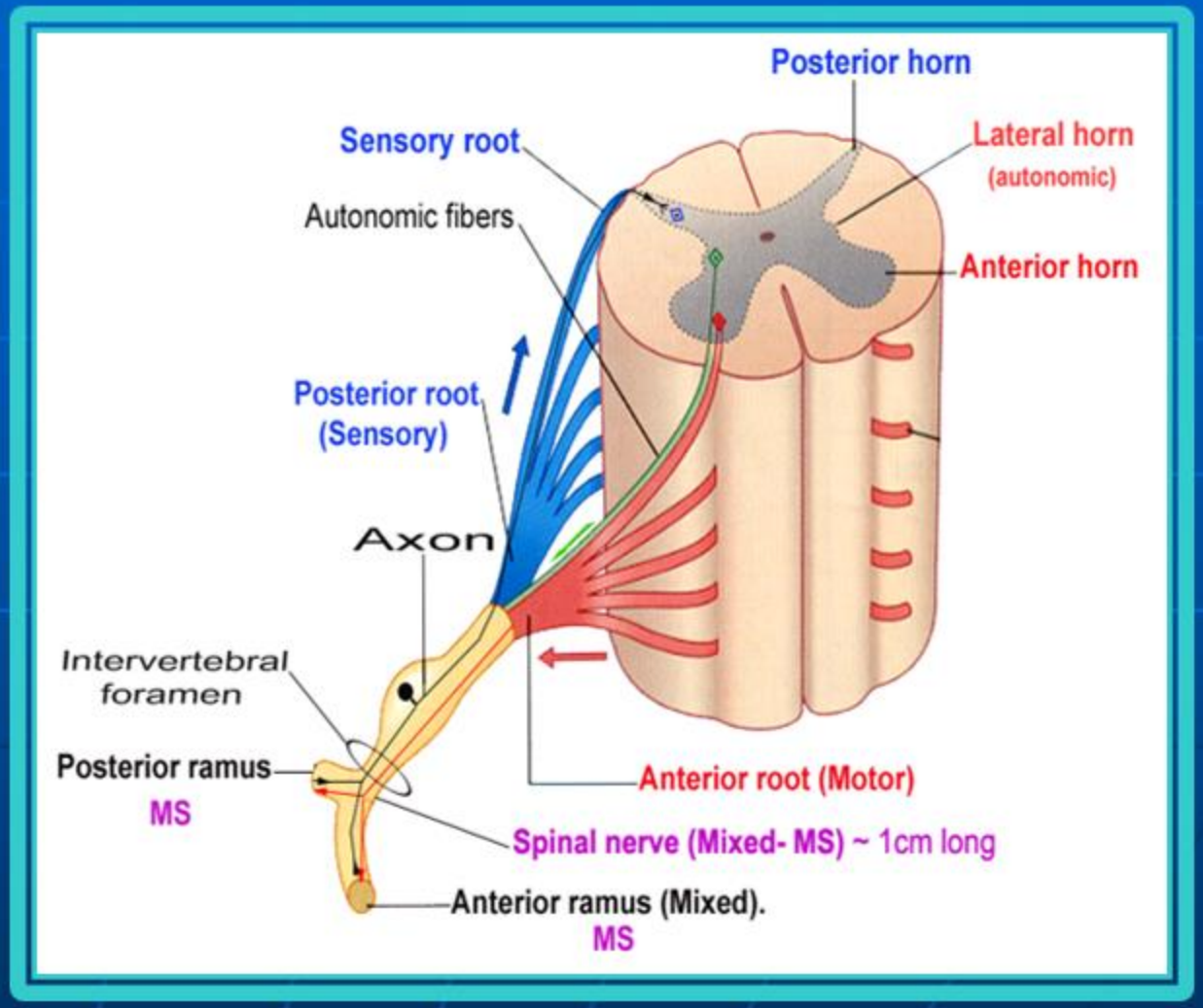
31 pairs

- Each spinal nerve leave through its intervertebral foramen "between two sequential vertebrae" as a mixed nerve (Motor and Sensory).

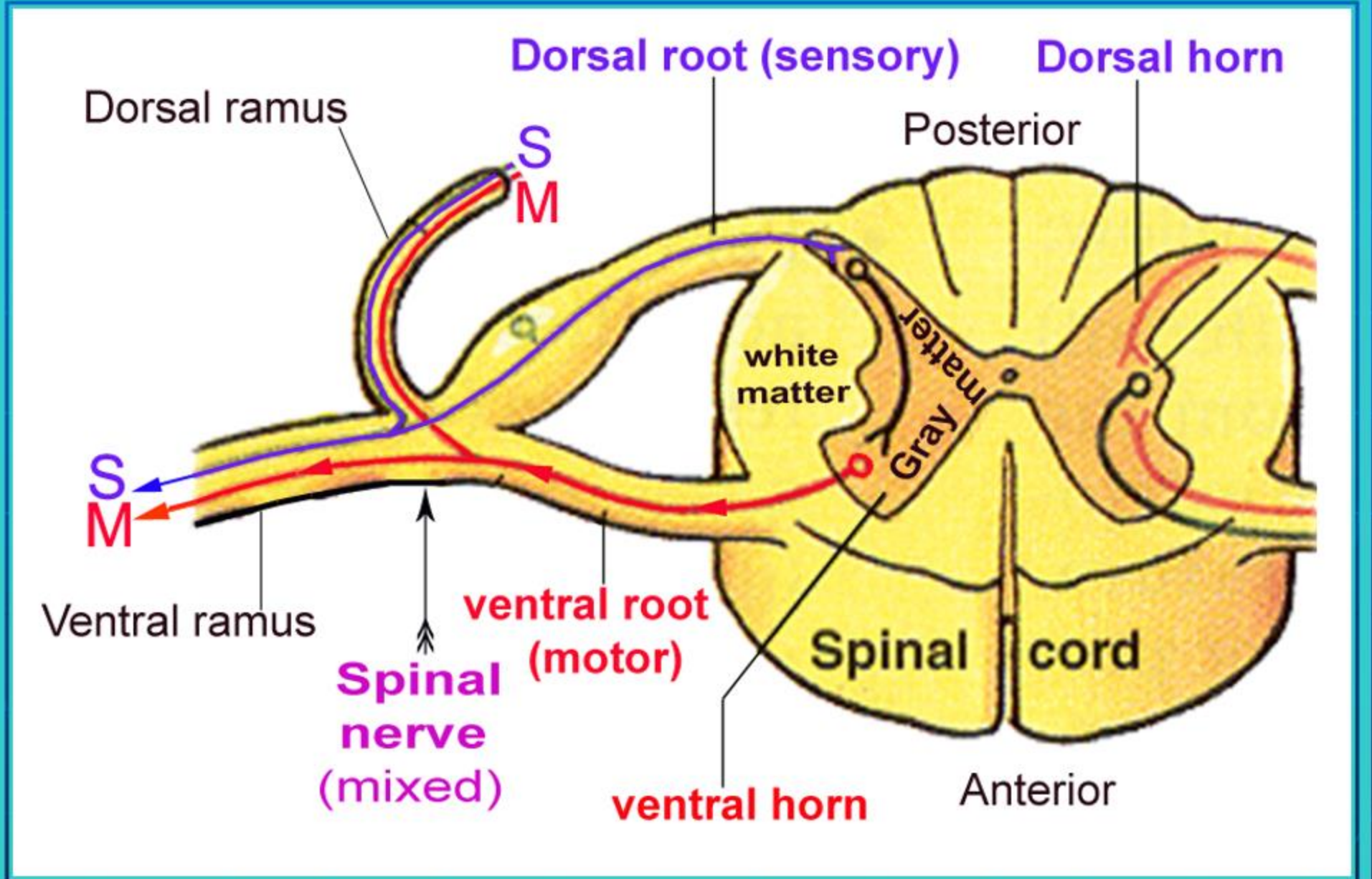
- Just outside foramen , it divides into 2 limbs (Ramus = limb):

  - Anterior ramus (mixed).
    To Anterior parts of the body.

  - Posterior ramus (mixed).
    To posterior parts of the body.

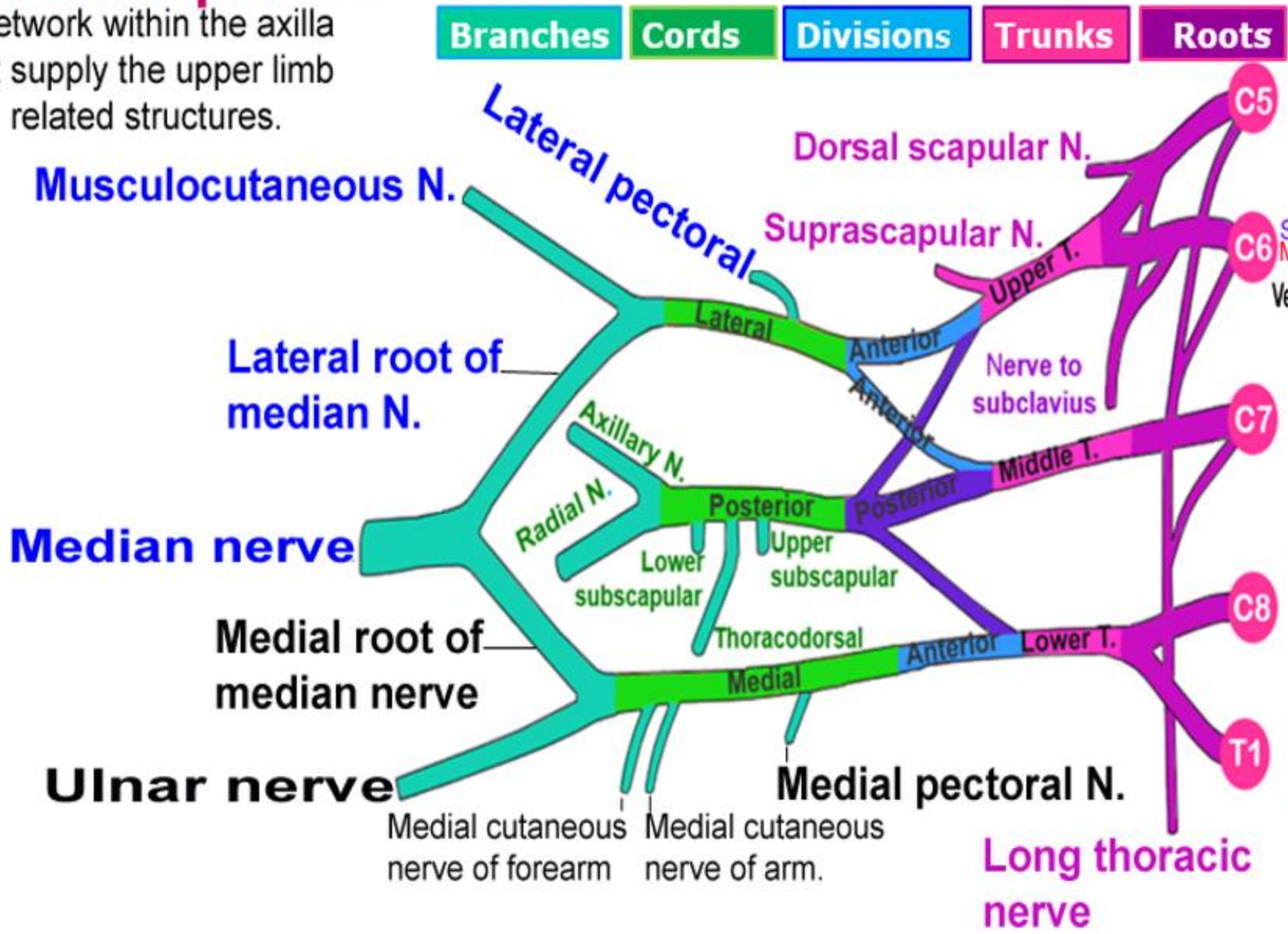


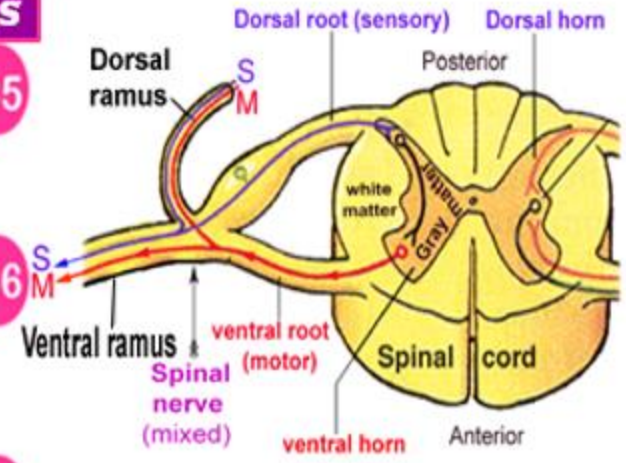
Spinal segment- Superior view



Brachial plexus

A network within the axilla that supply the upper limb and related structures.





- **Origin:** Ventral rami of C5 - T1 spinal nerves.
- Loves number 3 and 5.
- **Has:**
  - **5 Roots**
  - **3 Trunks**
  - **3 Anterior divisions**
  - **3 Posterior divisions**
  - **3 Cords**

Lateral cord gives 3 branches
Medial cord gives 5 branches
Posterior cord gives 5 branches

Brachial Plexus

A network of nerves within the axilla that supply the upper limb and related structures.

Origin: Ventral rami of C5-T1 spinal nerves.

- Loves number **5** and **3**.

Parts:

- 5 Roots.
- 3 Trunks.
- 3 anterior divisions + 3 posterior divisions.
- 3 Cords.
  - Lateral cord gives **3** branches.
  - Medial cord gives **5** branches.
  - Posterior cord gives **5** branches.

Brachial Plexus

Divisions:

- Since the trunks are intended to supply FLEXOR and EXTENSOR muscles, each trunk divides into anterior division for Flexor and posterior division for Extensor muscles.
- This occurs before they pass below the clavicle.

3 Anterior divisions →for Flexor muscles.

3 Posterior divisions → for Extensor muscles.

3 Cords:

- Cords are named according to their relation to **2nd** part of the axillary artery.
  - Posterior divisions of the 3 trunks unite to give→ **Posterior cord.**
  - Anterior divisions of Upper trunk and Middle trunks unite→ **Lateral cord.**
  - Anterior division of the lower trunk continue as →**Medial cord.**