

Dissection – Laminectomy and Exposure of the Vertebral Canal

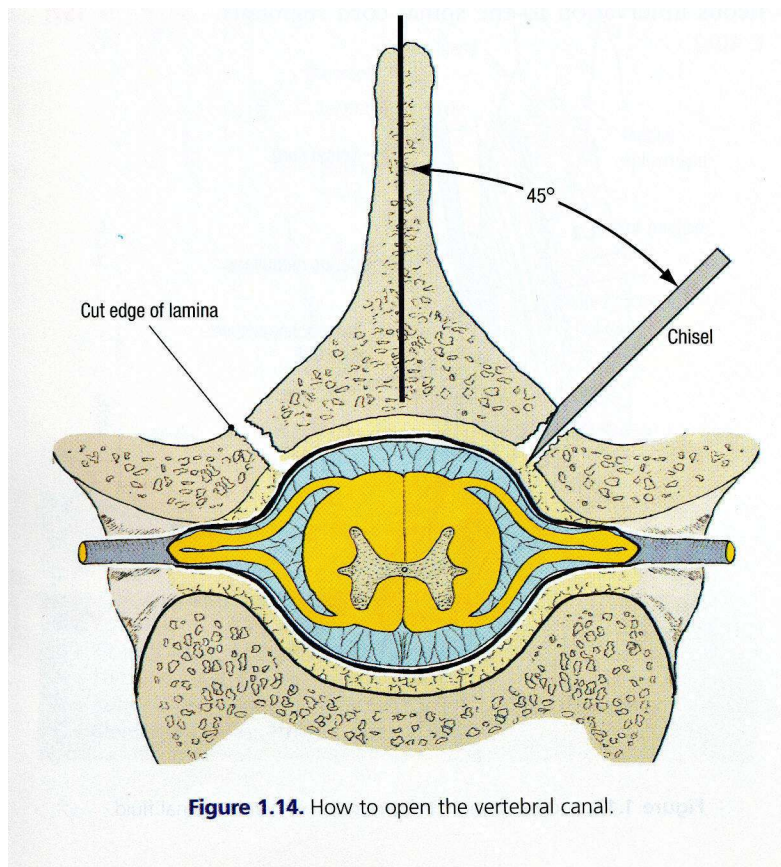
Dissection Instructions

1. *Wear eye protection for all steps that require the use of a chisel, bone saw, or bone forceps.*
2. Use a scalpel to remove the erector spinae muscles bilaterally from vertebral levels C4 to S3. The laminae must be clearly exposed. Use scraping motions with a chisel to clean the laminae after the muscles have been removed.
3. Use a chisel or power saw to cut the **laminae** of vertebrae T6 to T12 on both sides of the spinous processes (**Fig. 1.14**). Make this cut at the lateral end of the laminae to gain wide exposure to the vertebral canal. The cutting instrument should be angled at 45 degrees to the vertical.
4. Use a scalpel to cut the interspinous ligaments between vertebrae T5 and T6 and between vertebrae T12 and L1. Leave the remaining interspinous ligaments undisturbed to maintain the laminectomy specimen intact.
5. Use a chisel to pry the six spinous processes and their laminae out as a unit. The dura mater will be undamaged.
6. Observe the **ligamenta flava** on the deep surface of the laminectomy specimen. The ligamenta flava connect the laminae of adjacent vertebrae.
7. Continue the laminectomy procedure superiorly and inferiorly from the opening in the vertebral canal. Exercise caution in lower lumbar and sacral regions, because the vertebral canal curves sharply posteriorly (**Fig. 1.15A**). Do not drive the chisel or push the saw through the sacrum into the rectum.
8. When finished with the laminectomy, you should see the posterior surface of the dura mater from vertebral levels C4 to S2.

SPINAL MENINGES

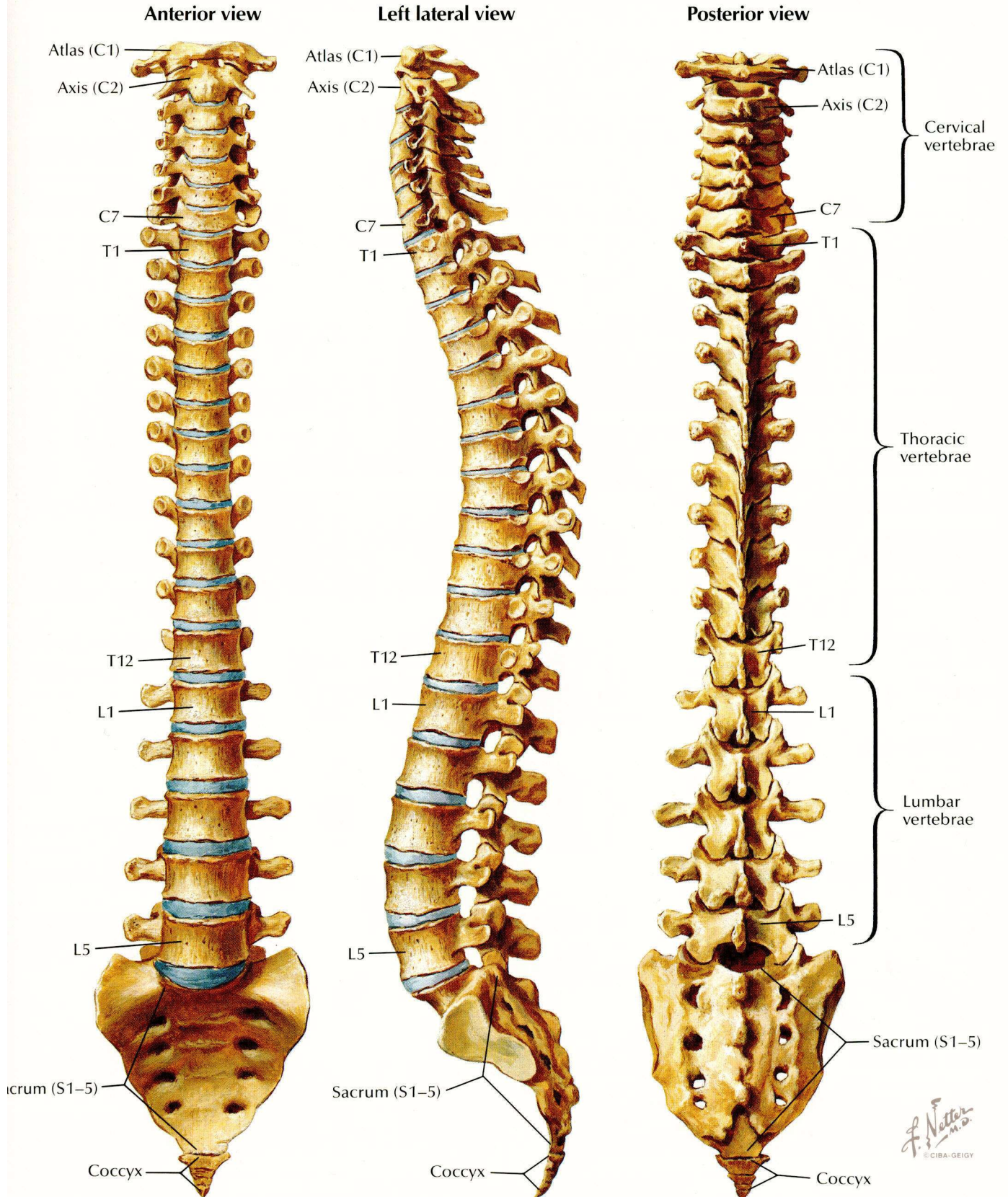
1. Observe the **epidural (extradural) space**. Use blunt dissection to remove the **epidural fat** and the **posterior internal vertebral venous plexus** from the epidural space. **[N 163]**

Laminectomy and Exposure of Spinal Cord

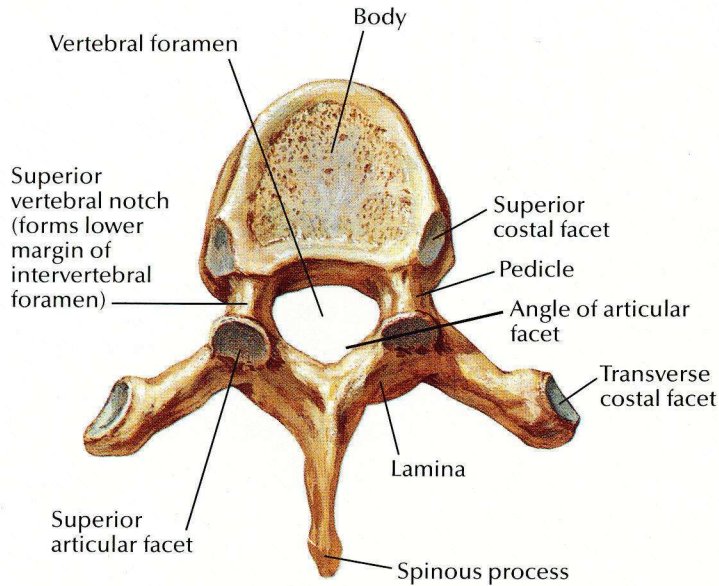


Vertebral Column

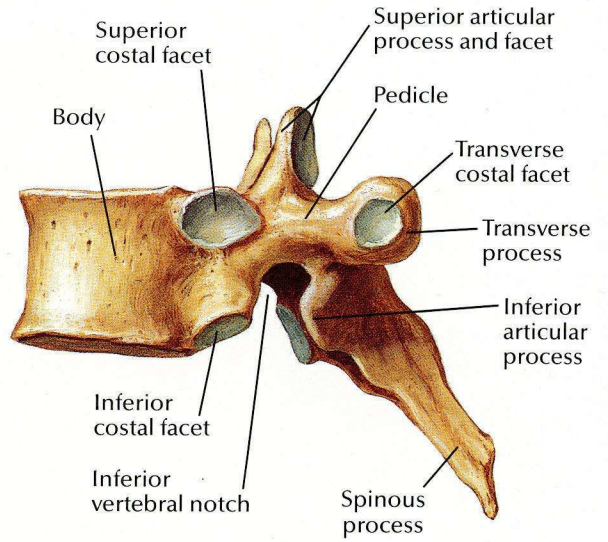
ILLUSTRATIONS 9, 12, 13, 143, 144, 145, 170, 231



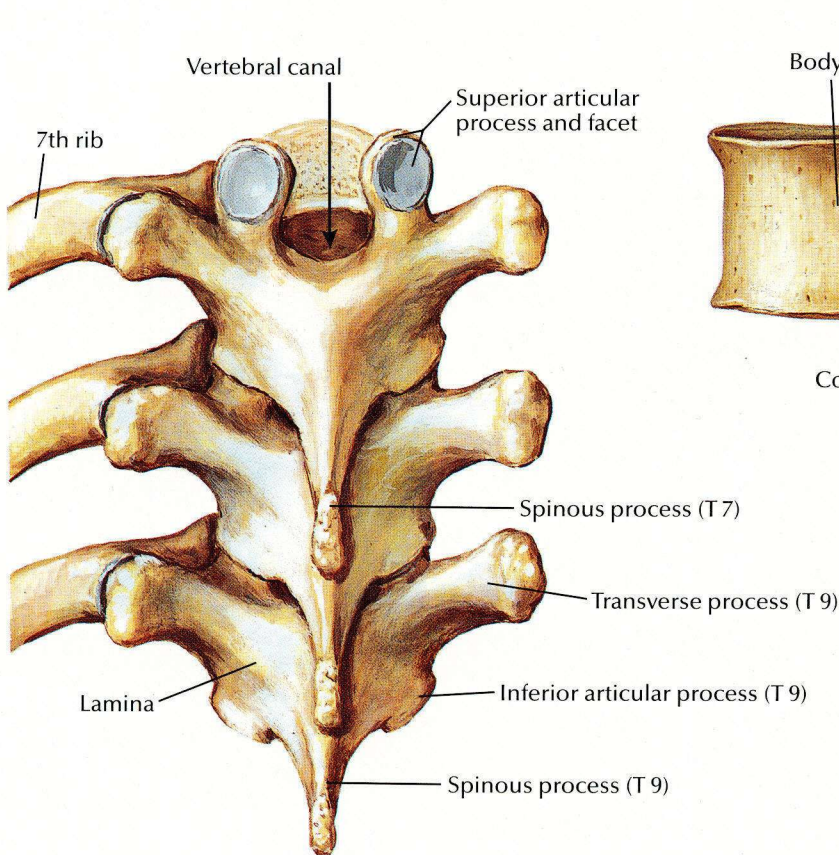
Vertebral Column - Thorax



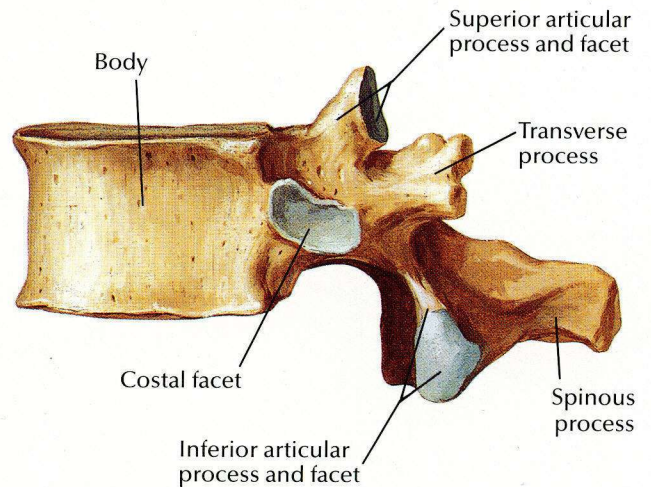
**6th thoracic vertebra:
superior view**



**6th thoracic vertebra:
lateral view**

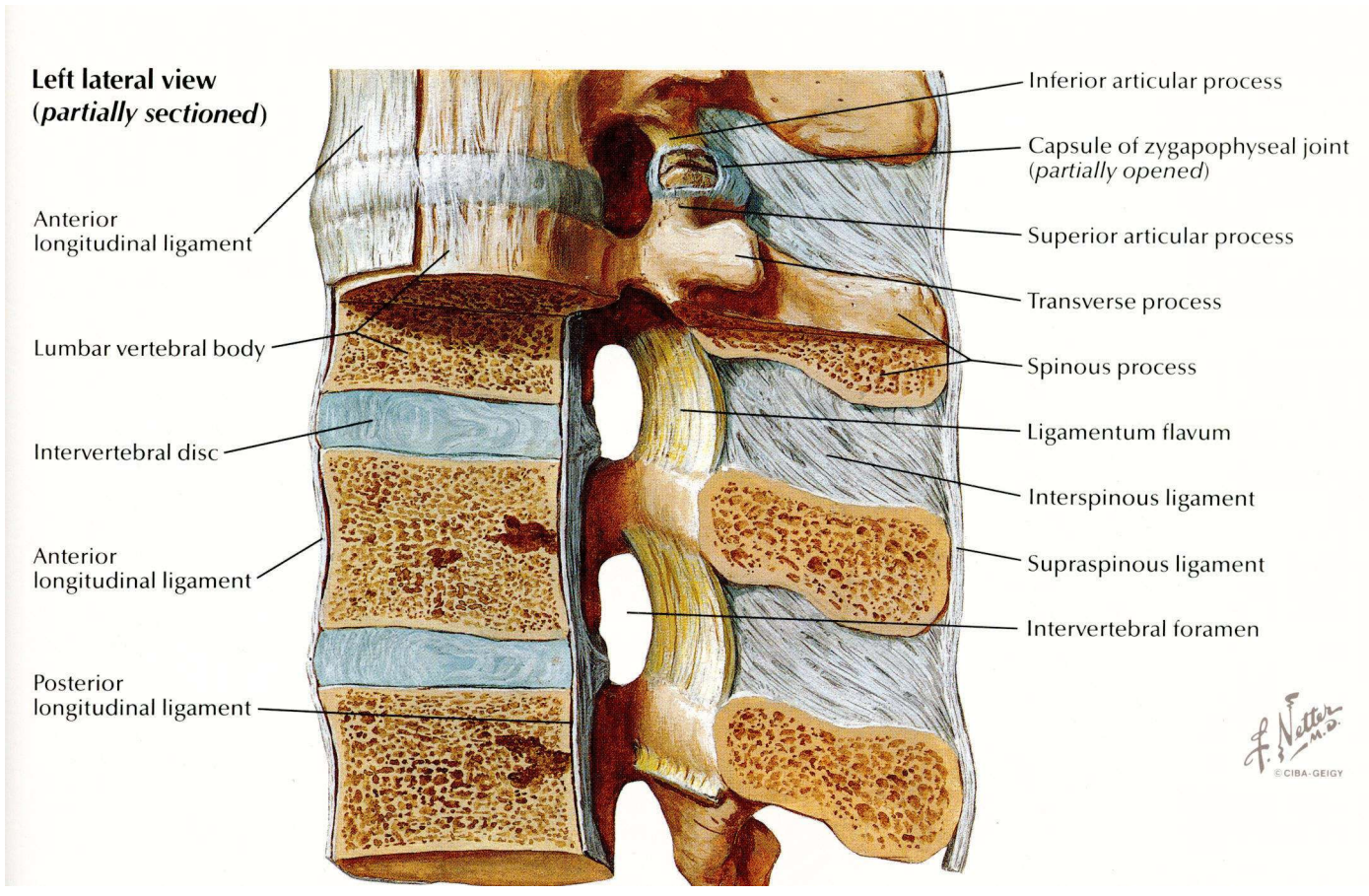


**7th, 8th and 9th thoracic vertebrae:
posterior view**

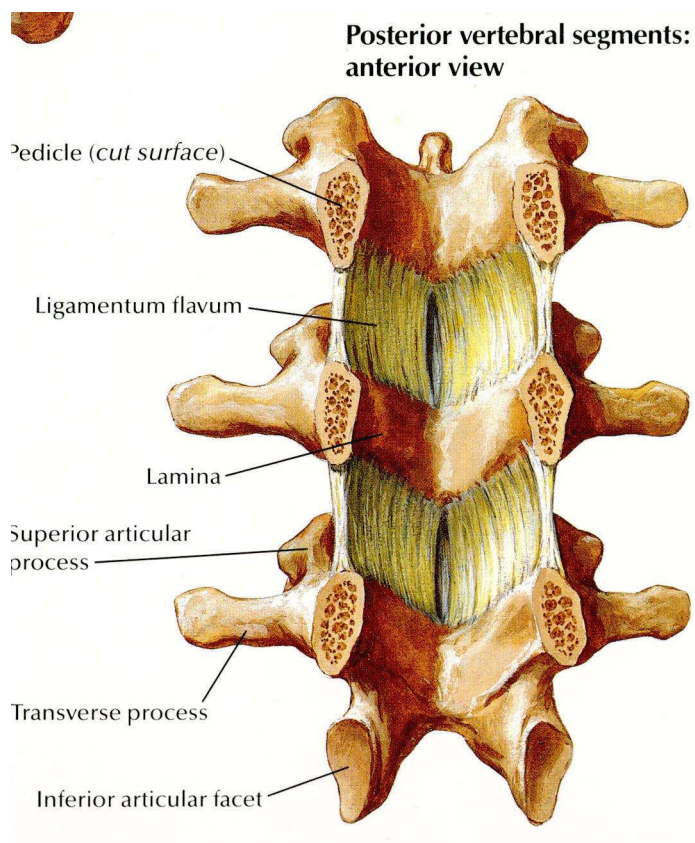


**12th thoracic vertebra:
lateral view**

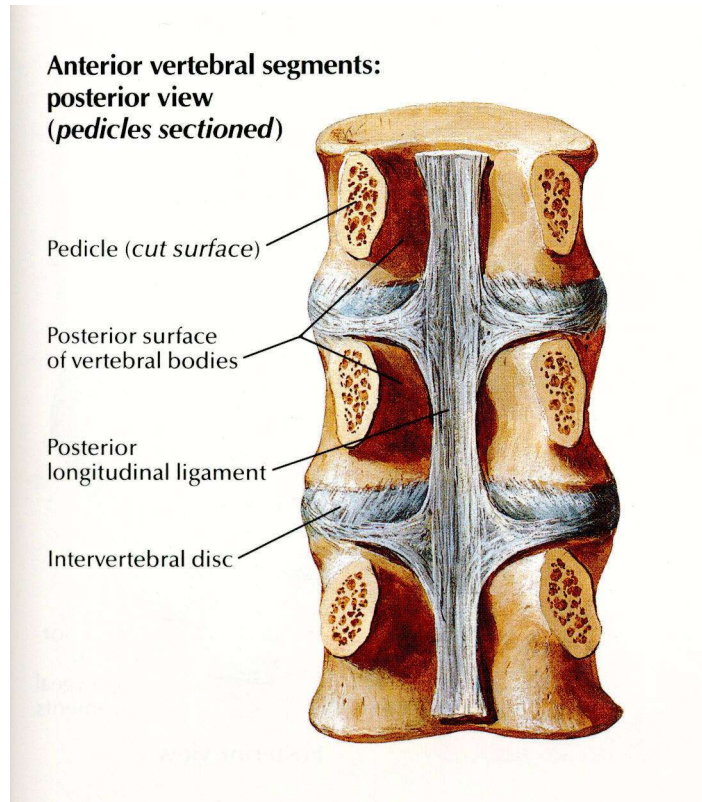
Ligaments of the Vertebral Column – Saggital View



Ligaments of the Vertebral Column – Posterior Vertebral Canal



Ligaments of the Vertebral Column – Anterior Vertebral Canal



Spinal Cord within the Vertebral Canal

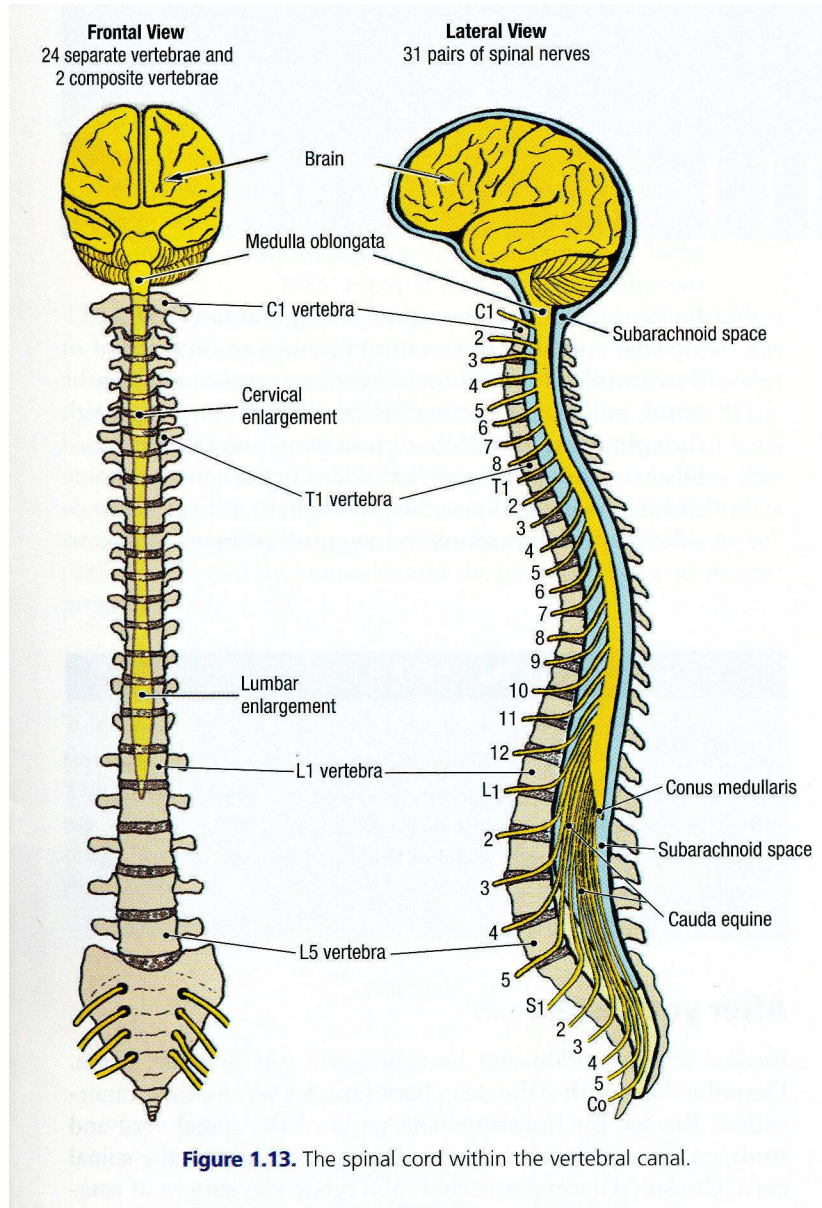


Figure 1.13. The spinal cord within the vertebral canal.

Inferior Spinal Cord, Dural Sac, and Filum Terminale

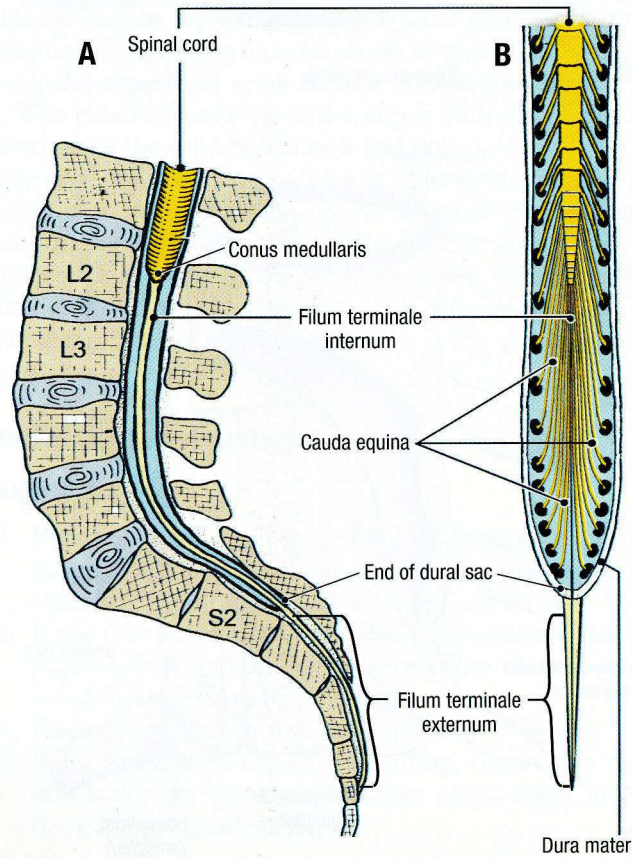
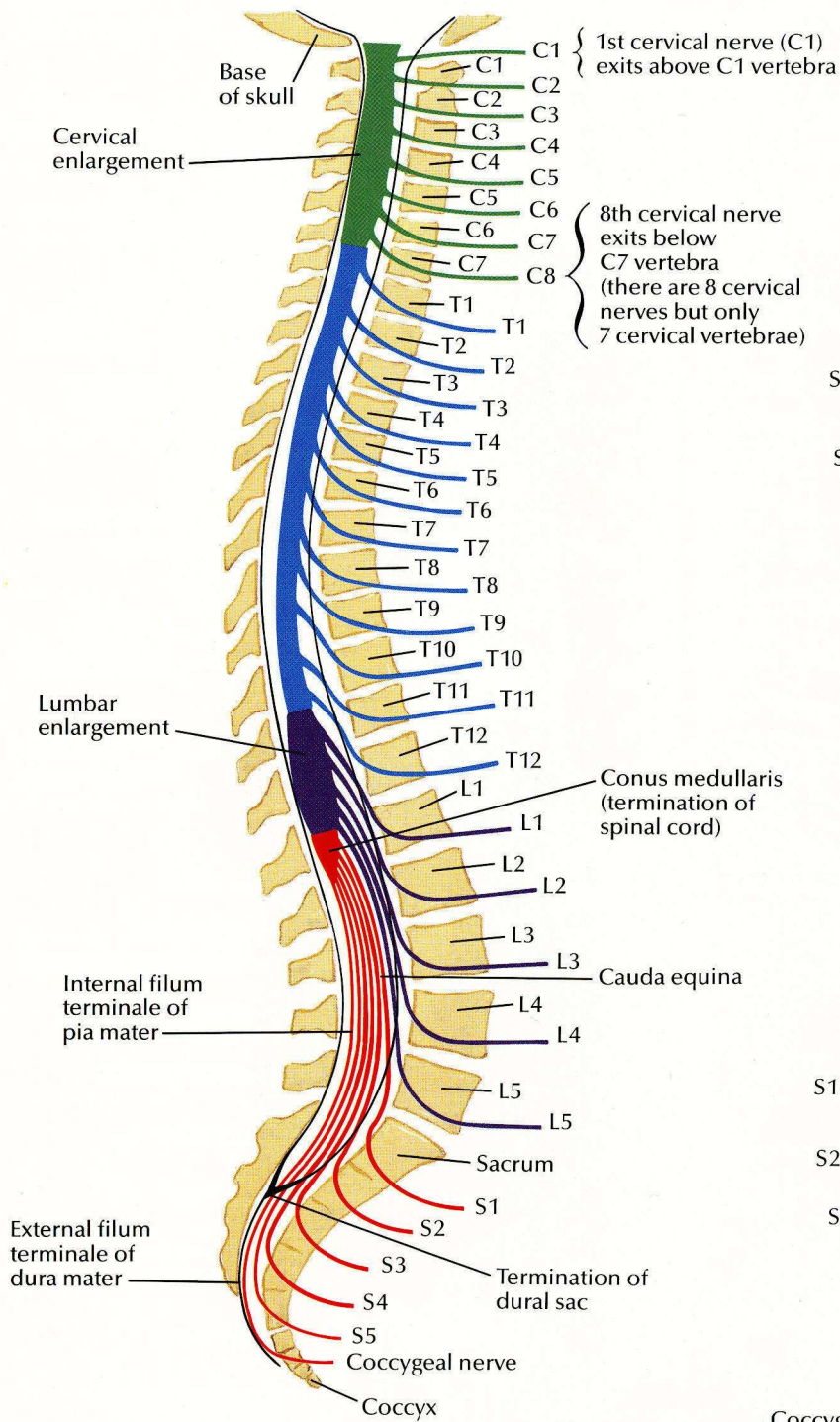
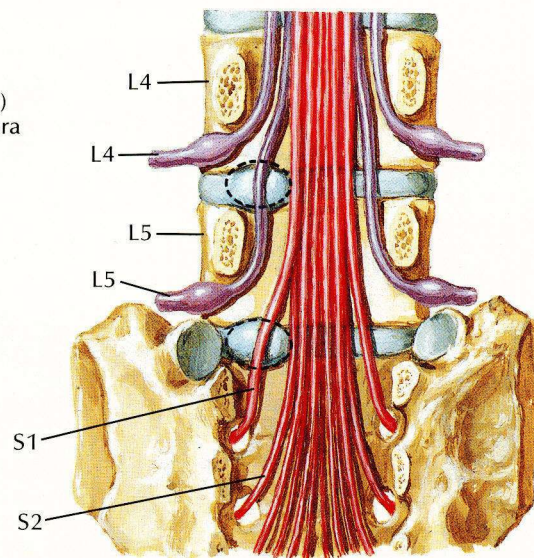


Figure 1.15. Lower portion of the vertebral canal and spinal cord. **A.** Lateral view. **B.** Posterior view.

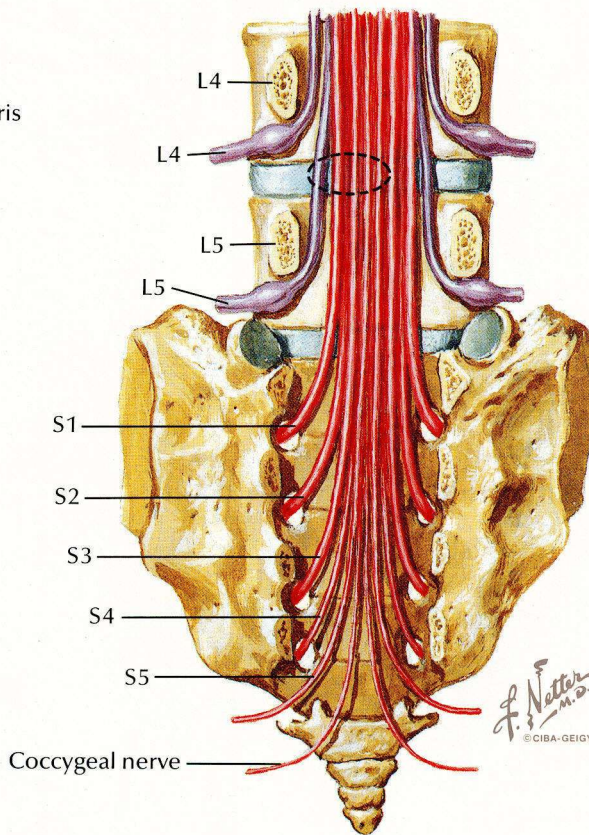
Spinal Cord Enlargements, Disc Herniation, and Nerve Compression



- Cervical nerves
- Thoracic nerves
- Lumbar nerves
- Sacral and coccygeal nerves



Lumbar disc protrusion does not usually affect nerve exiting above disc. Lateral protrusion at disc level L4-5 affects 5th lumbar nerve, not 4th lumbar nerve. Protrusion at disc level L5-S1 affects 1st sacral nerve, not 5th lumbar nerve

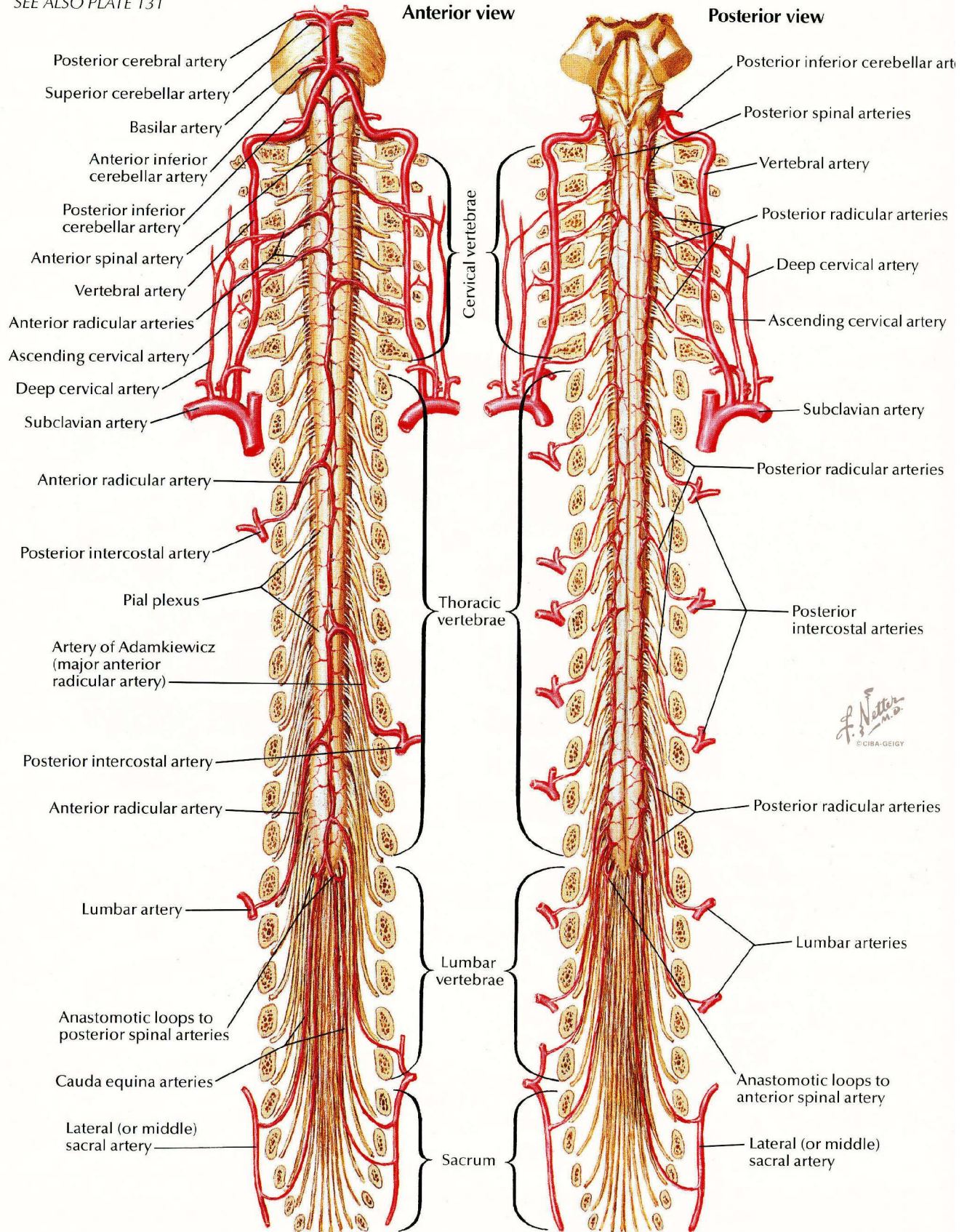


Medial protrusion at disc level L4-5 rarely affects 4th lumbar nerve but may affect 5th lumbar nerve and sometimes 1st-4th sacral nerves

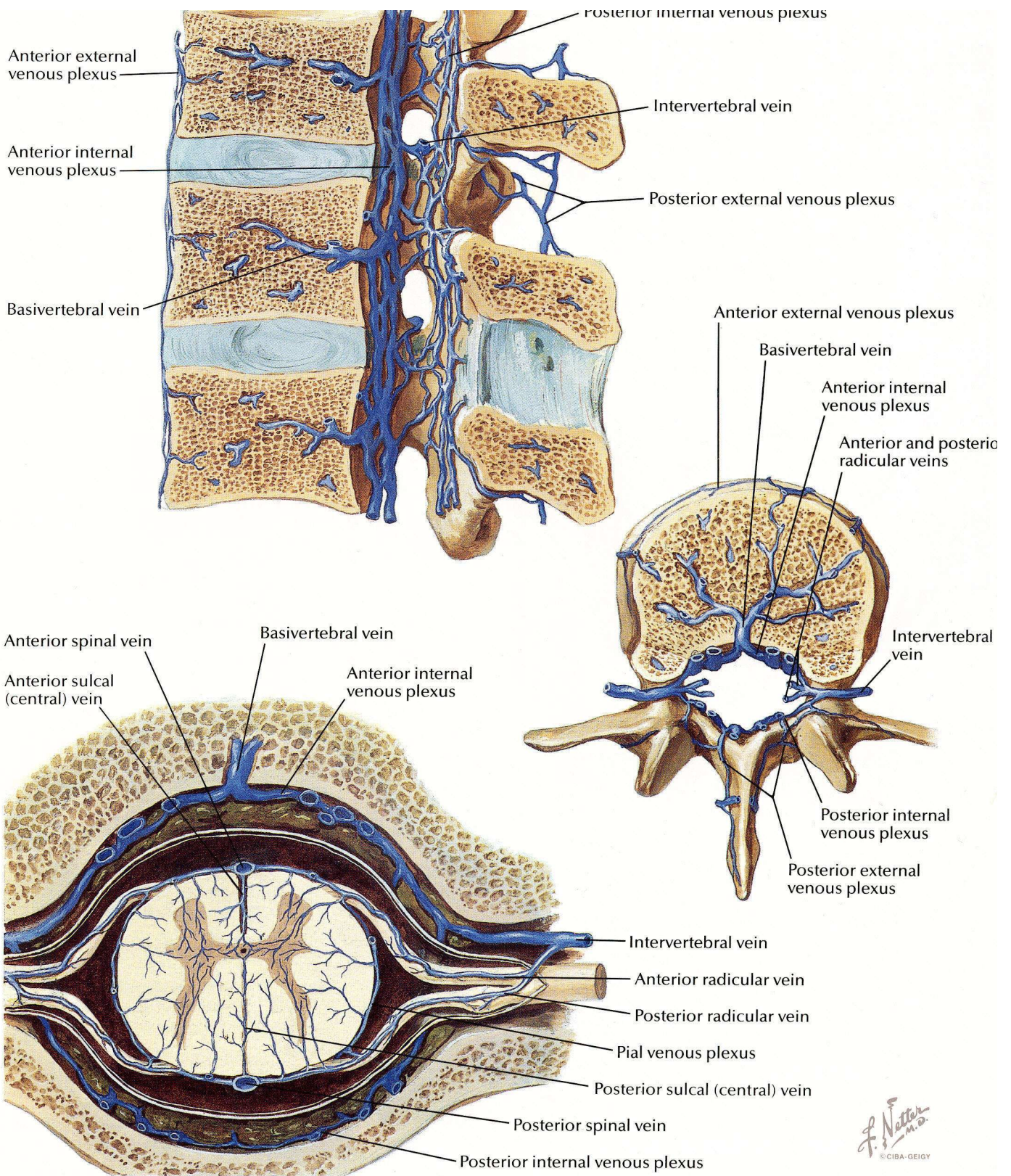
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Arteries of the Spinal Cord

SEE ALSO PLATE 131



Anterior and Posterior Internal Vertebral Plexus



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Meninges of the Spinal Cord

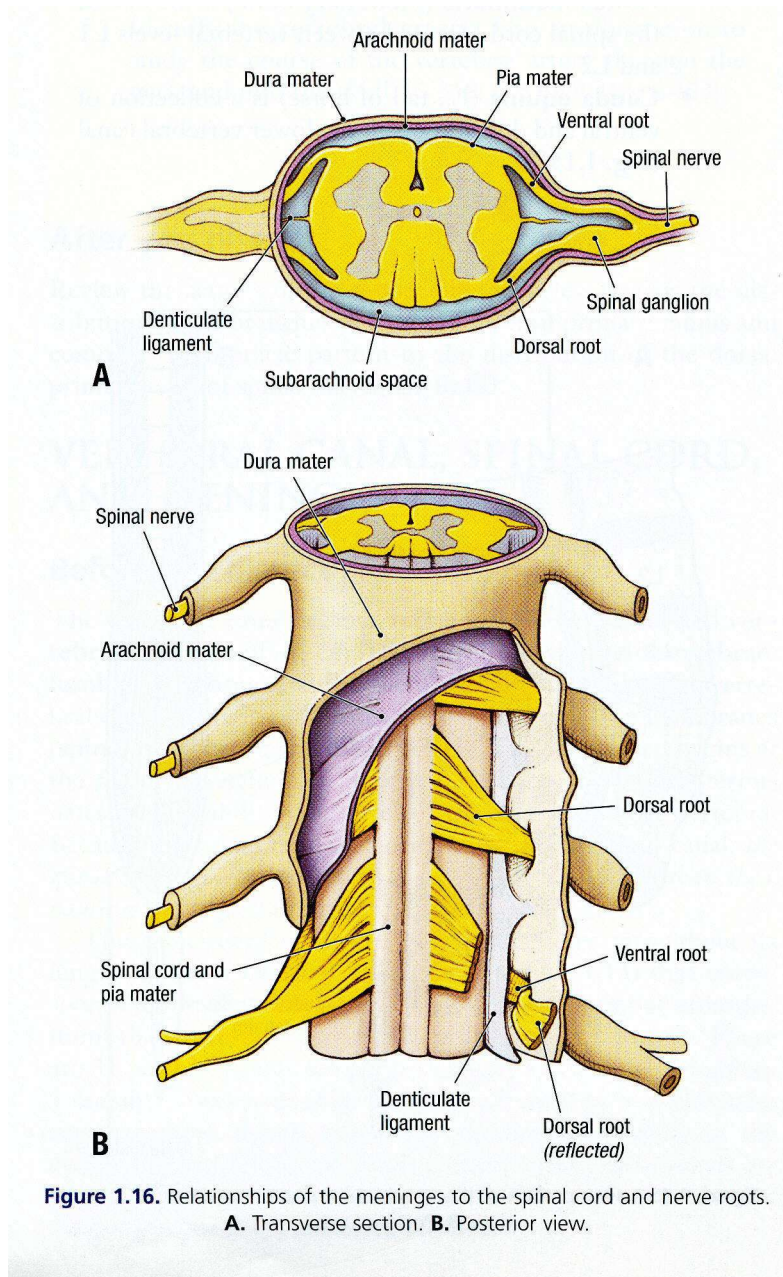
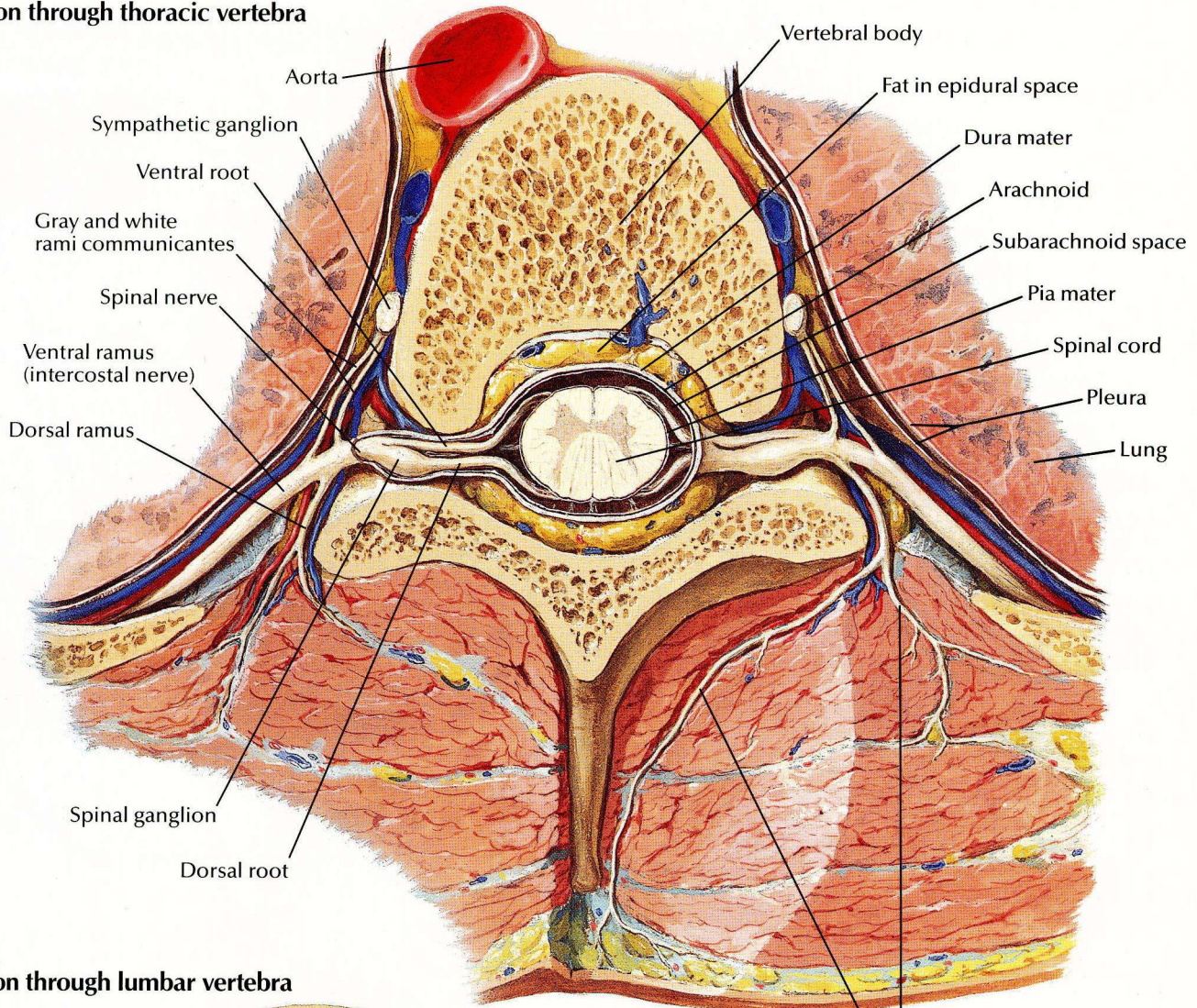


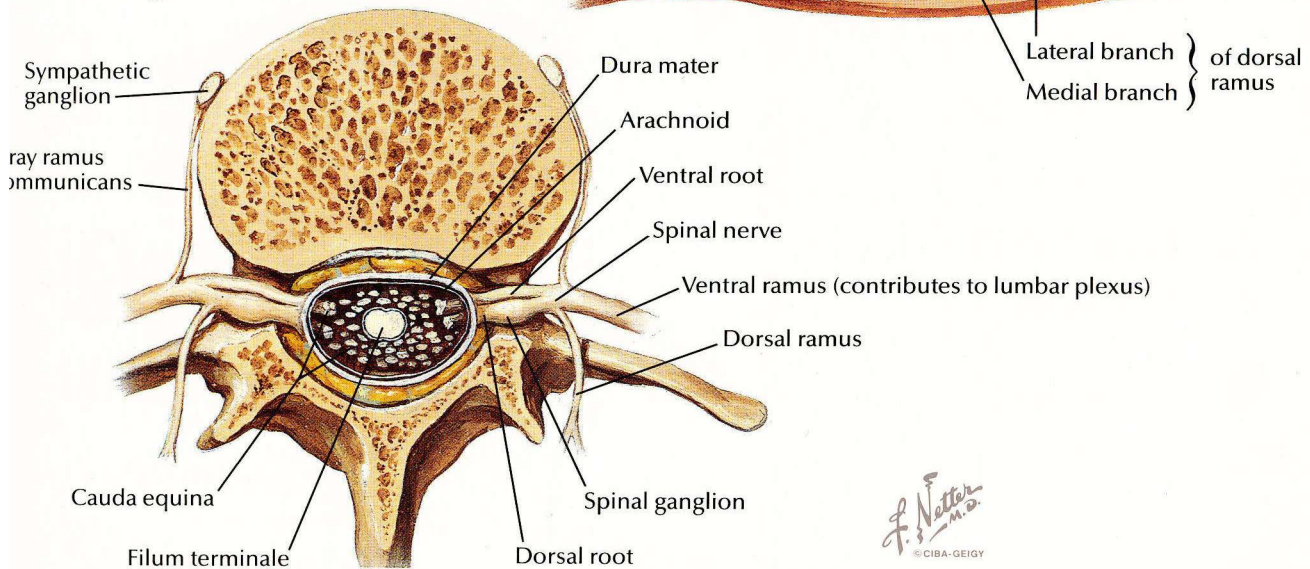
Figure 1.16. Relationships of the meninges to the spinal cord and nerve roots. **A.** Transverse section. **B.** Posterior view.

Vertebral Canal and Spinal Cord - Spaces

Section through thoracic vertebra

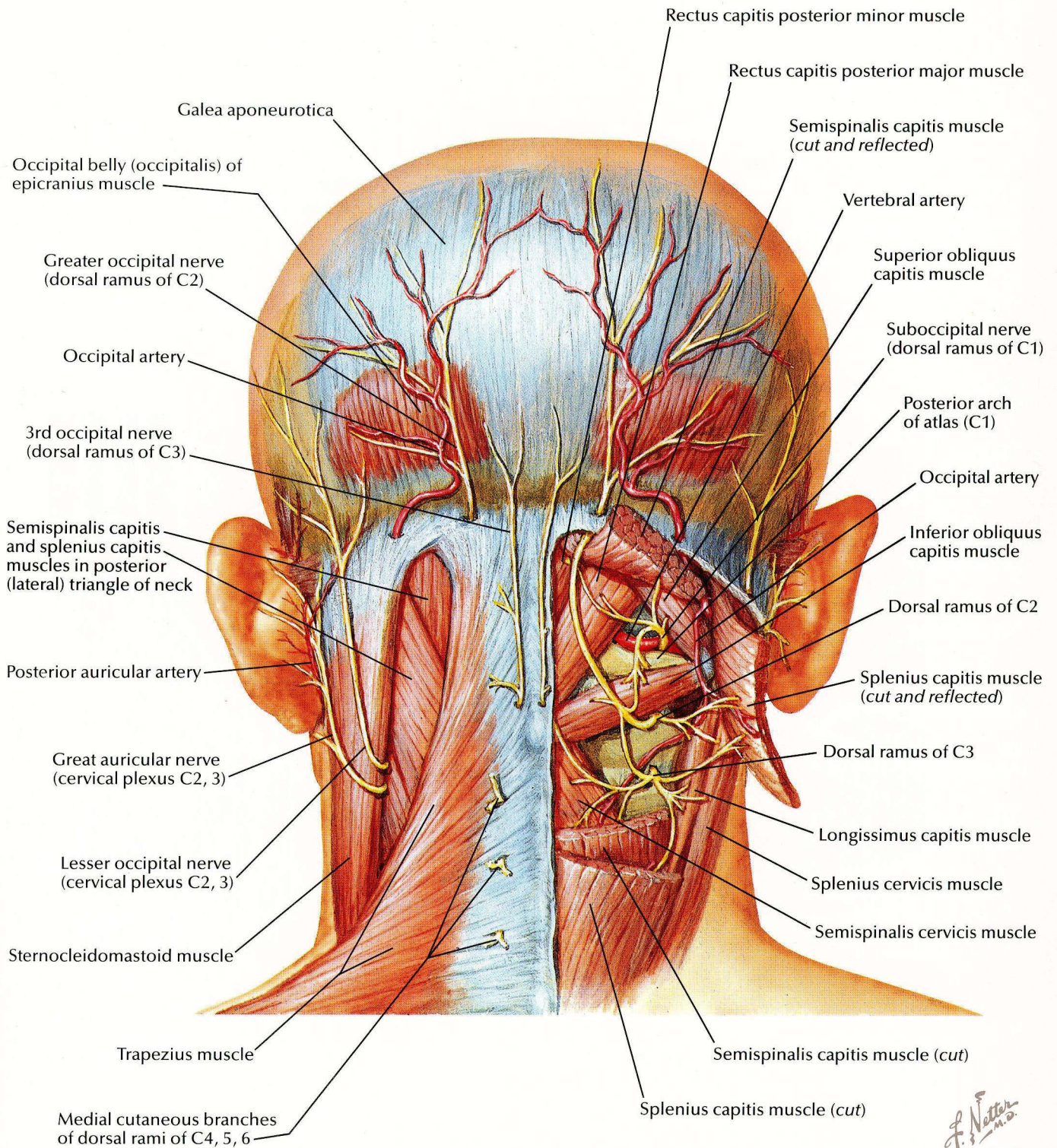


Section through lumbar vertebra

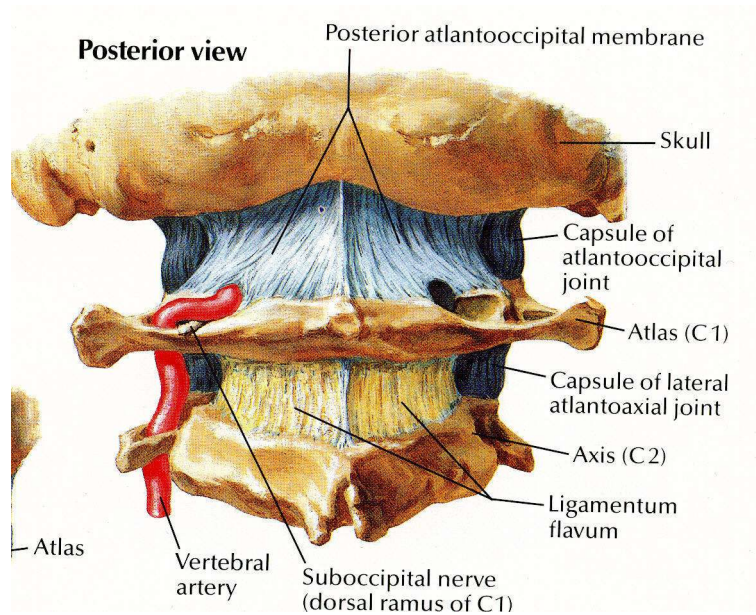


Suboccipital Triangle

Suboccipital Triangle



Drawing - Suboccipital Triangle



Drawing - Lumbar Puncture

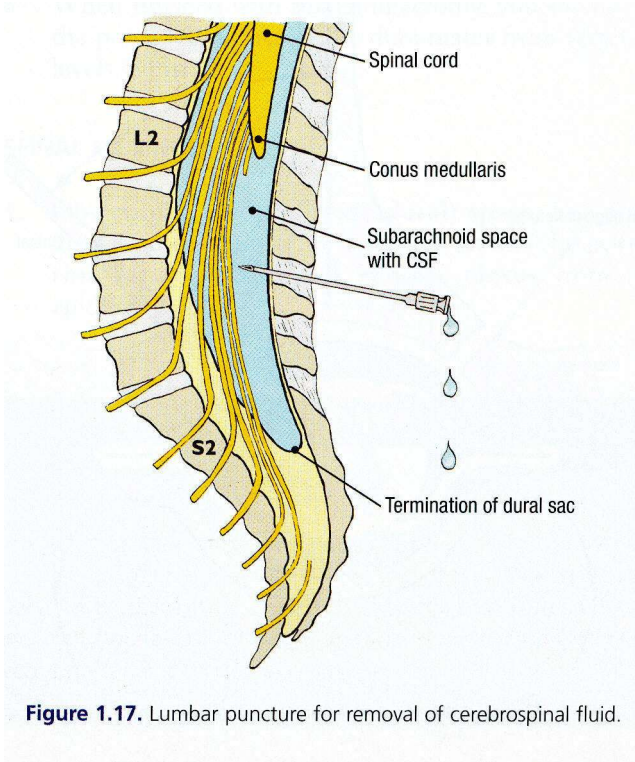


Figure 1.17. Lumbar puncture for removal of cerebrospinal fluid.