

Chapter Opener

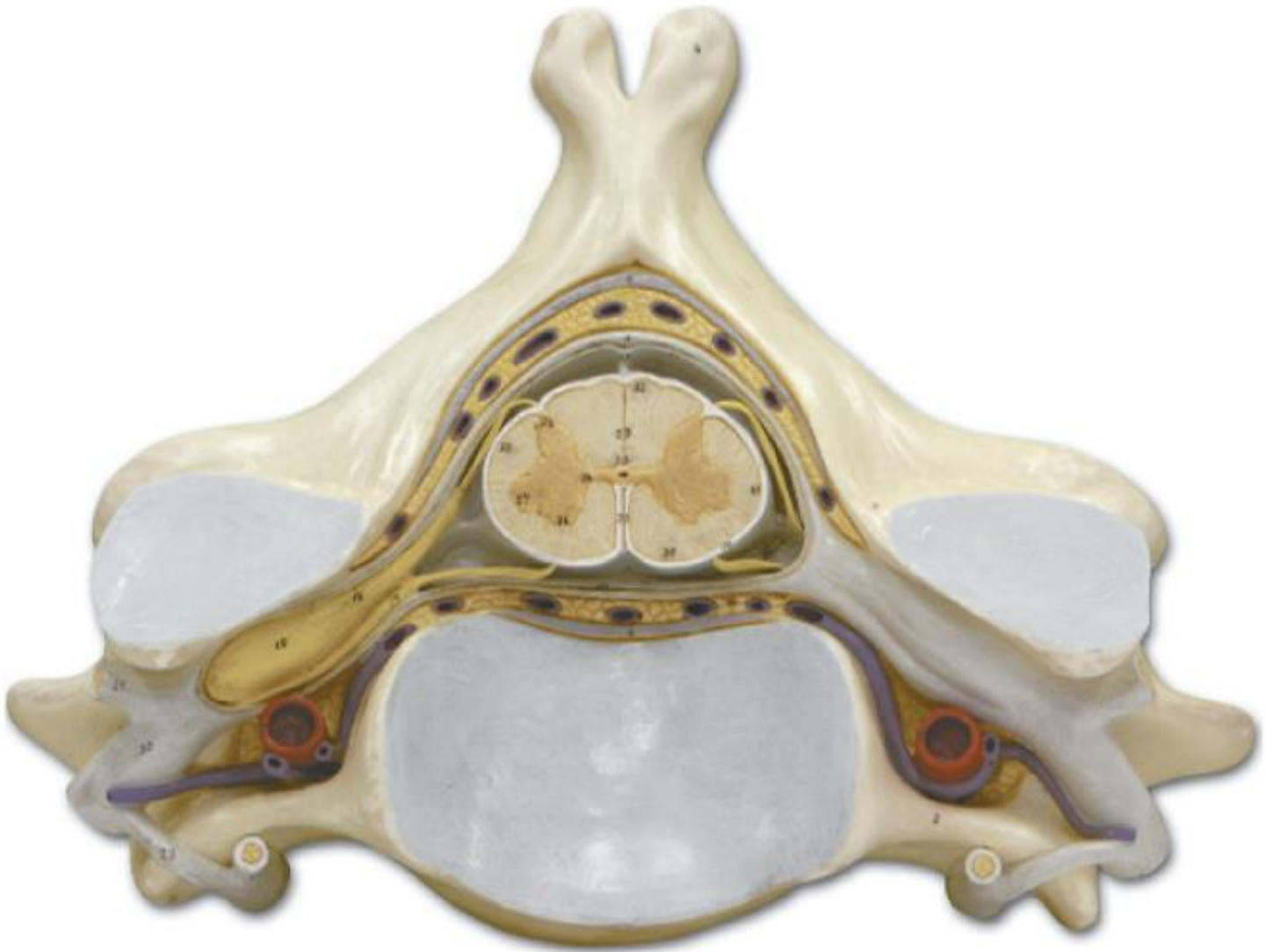


Figure 19.1 Cross Section Through The Spinal Cord Illustrating Its Relationship to The Surrounding Vertebra, Cervical Region

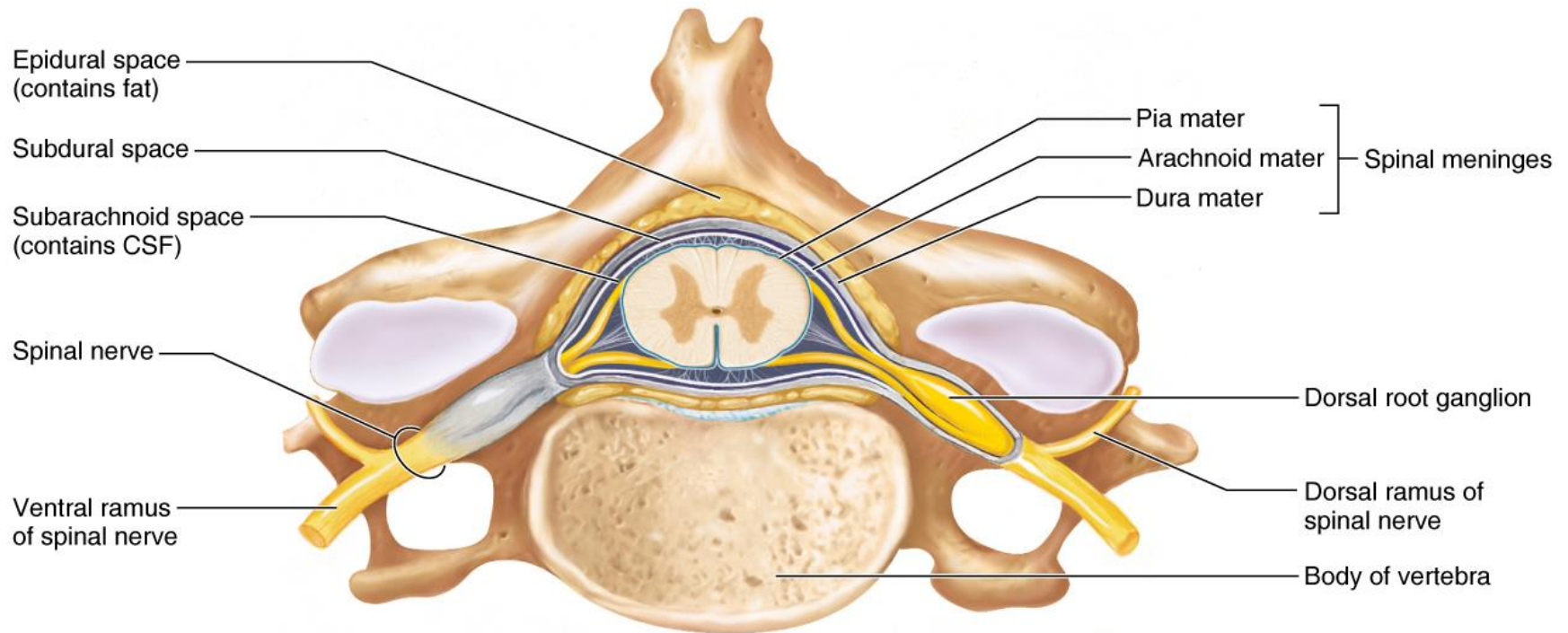
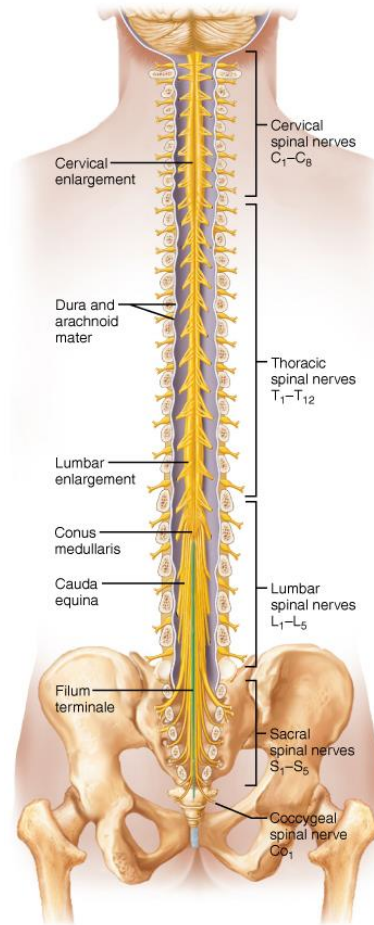


Figure 19.2a Gross Structure of The Spinal Cord, Dorsal View



(a) The spinal cord and its nerve roots, with the bony vertebral arches removed. The dura mater and arachnoid mater are cut open and reflected laterally.

Table 19.1 Anatomy of The Spinal Cord in Cross Section (Figure 19.3)

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Structure	Description
Gray matter	Located in the center of the spinal cord and shaped like a butterfly or the letter H. Areas of the gray matter are individually named and described below.
Dorsal (posterior) horns	Posterior projections of the gray matter that contain primarily interneurons and the axons of sensory neurons.
Ventral (anterior) horns	Anterior projections of the gray matter that contain the cell bodies of somatic motor neurons and some interneurons.
Lateral horns	Small lateral projections that are present only in the thoracic and lumbar regions of the gray matter. When present, they contain the cell bodies of motor neurons of the autonomic nervous system.
Gray commissure	The cross bar of the H that surrounds the central canal.
Central canal	A narrow central cavity that is continuous with the ventricles of the brain.
Dorsal root	A nerve root that fans out into dorsal rootlets to connect to the posterior spinal cord. It contains the axons of sensory neurons.
Dorsal root ganglion	A bulge on the dorsal root that contains the cell bodies of sensory neurons.
Ventral root	A nerve root that is formed by the ventral rootlets connected to the anterior spinal cord. It contains the axons of motor neurons.
Spinal nerve	Formed by the fusion of dorsal and ventral roots. They are mixed nerves because they contain both sensory and motor fibers.
White matter	Forms the outer region of the spinal cord and is composed of myelinated and nonmyelinated axons organized into tracts.
Ventral median fissure	The anterior, more open of the two grooves that partially divide the spinal cord into left and right halves.
Dorsal median sulcus	The posterior, shallower of the two grooves that partially divide the spinal cord into left and right halves.
White columns	Each side of the spinal cord has three funiculi (columns): dorsal (posterior) funiculus, lateral funiculus, and ventral (anterior) funiculus, which are further divided into tracts.
Ascending (sensory) tracts	Carry sensory information from the sensory neurons to the brain.
Descending (motor) tracts	Carry motor instructions from the brain to the body's muscles and glands.

Figure 19.3 Anterior View of The Spinal Cord in Cross Section and Its Meninges, Thoracic Region

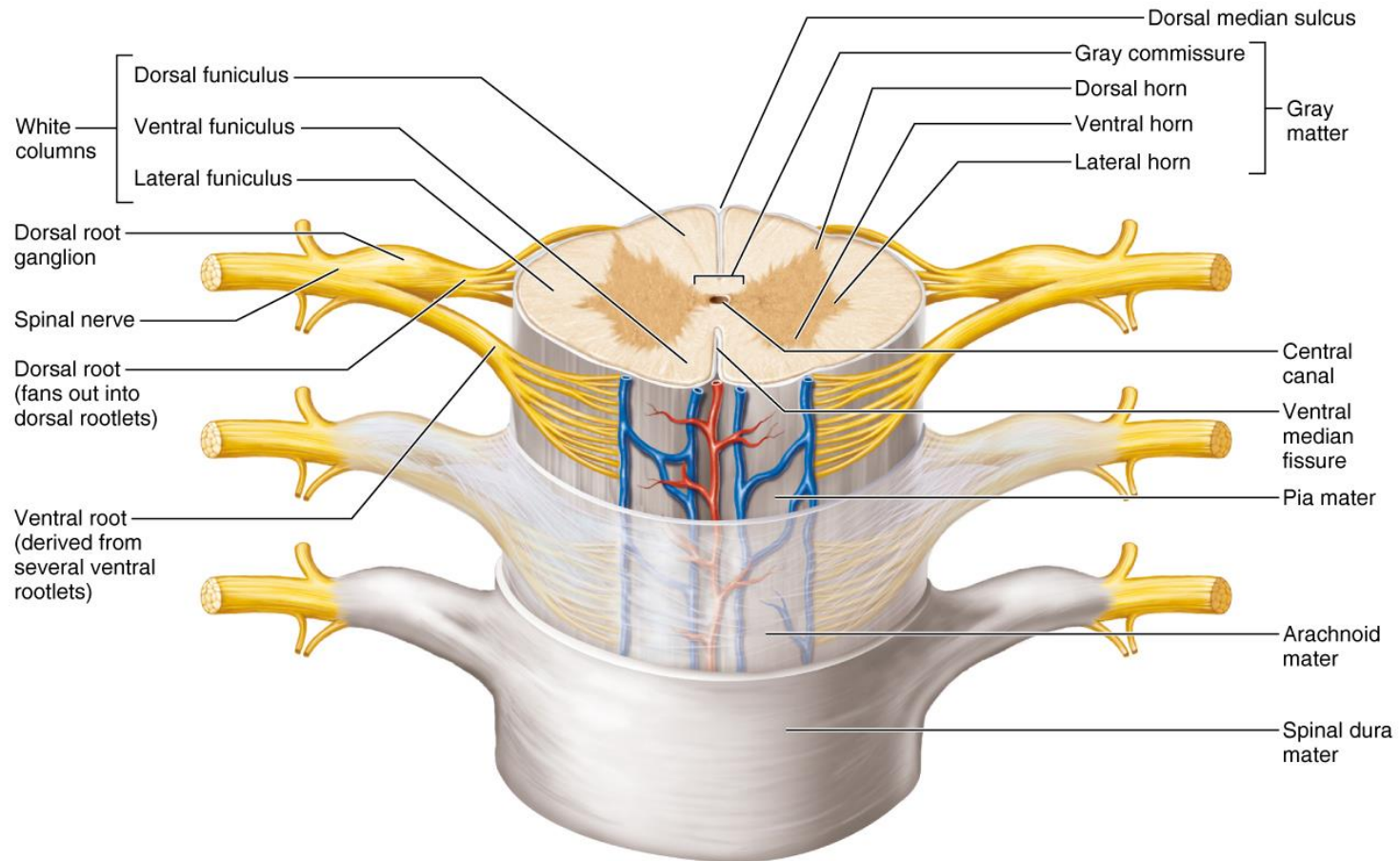
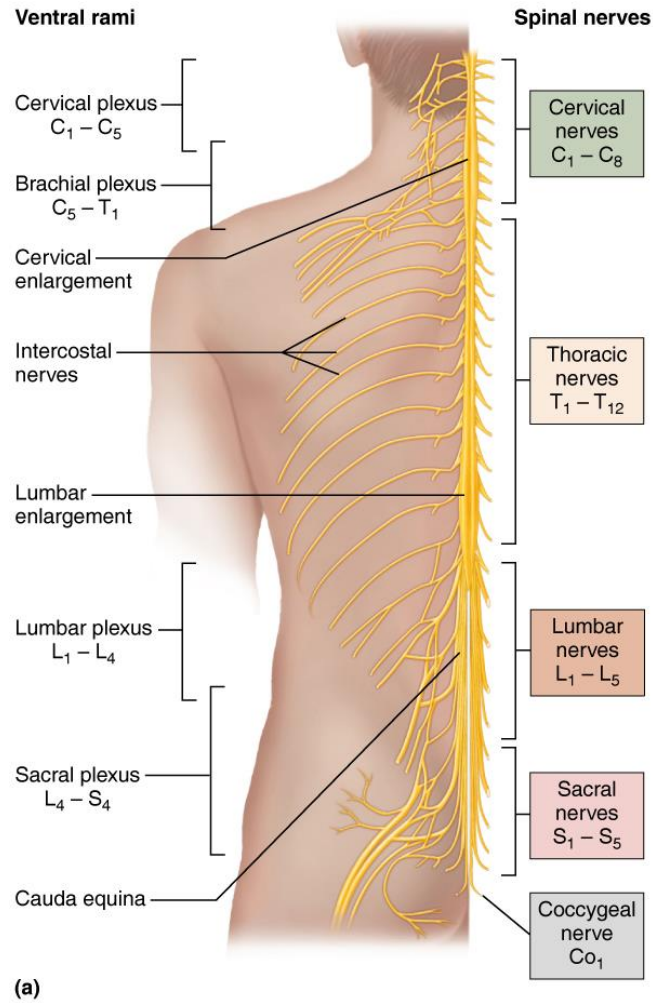


Figure 19.6a Human Spinal Nerves



Review Figure 19.01

