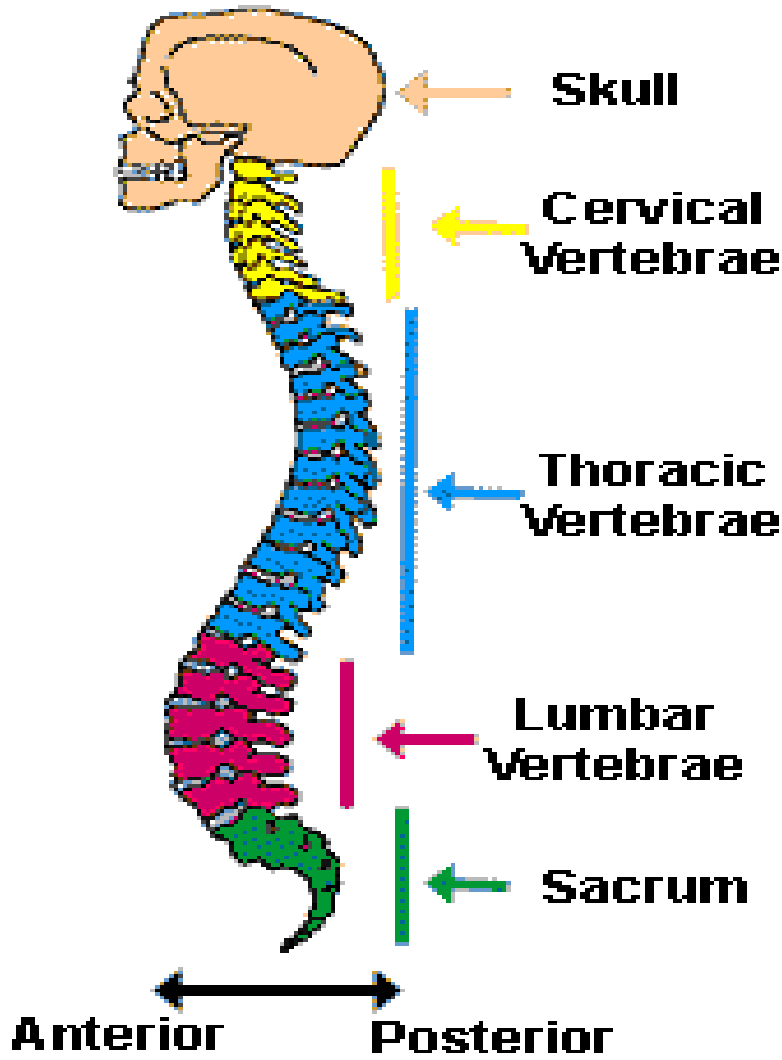




Anatomy of the Spinal Cord

ملاحظة:

هذا الملف للمراجعة وترتيب المعلومات فقط وليس مرجع للمذاكرة لانه ليست كل المعلومات متضمنة.



Done by:

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Spinal cord:

it's found in **vertebral canal** and surrounded by **meninges and CSF**.

Extend from **foramen magnum** and continuous above with medulla oblongata, and reach to 2L vertebra and forms conus medullaris which is connected to coccyx by non-neural cord called filum terminale .

Dura	Arachnoid	Pia
tough outer layer , continuous with epineurium of spinal nerve ..	thin membrane deeper to dura	bound tightly to brain and spinal cord and carry B.V form the filum terminale and it has denticulate ligament that connect spinal cord to dura matter

Spaces:

Epidural	B.V , areolar C.T and fat
subdural	potential cavity contain serous fluid
subarachnoid	CSF , B.V

Nerve cell groups in dorsal horn:

cell	substantia gelatinosa	nucleus proprius	nucleus dorsalis	visceral afferent nucleus
rexed laminae	2	4	7	7
location	apex of the horn	ventral to substantia gelatinosa	base of dorsal horn	lateral to nucleus dorsalis
type of neuron	large	large	large mostly	medium
site in the spinal cord	throughout the spinal cord	throughout the spinal cord	C8 to L 3-4	T1 to L3
afferent concerned with	Pain, temp, touch.	Sense of movement and position and two point discrimination and vibration.	information from muscle spindles and tendon organ	visceral afferent

Nerve cell group in ventral horn:

Ventral horn contains:

Motor neurons	interneurons
large multipolar cells axons pass out in the ventral roots of spinal nerves as alpha efferents which innervate extrafusal muscle fibers	contain Renshaw cell whose branched axons form inhibitory synaptic junction on motor neurons
smaller multipolar cells less numerous axons in ventral root pass as gamma innervate intrafusal fibers	

Note:

Both alpha and gamma motor neurons are under the influence of descending pathways from brain

Motor neurons are organized in 3 groups:

group	location	innervation
Medial	most segments	muscles of neck and trunk (including intercostal and abdominal muscles)
Central	in some cervical (phrenic C3-5, spinal accessory C1-6) and lumbosacral (L2-S1) segments	
Lateral	cervical and lumbosacral segments	muscles of the limbs

Questions:

1/ the spinal cord passes through _____ :

- a/ foramen ovale .
- b/ foramen magnum .
- c/ foramen rotundum .

2/ The conus medullaris is the tapering point at the end of the spinal cord. It is located at approximately _____.

- a/ L1 - L2
- b/ L3 - L4
- C/ L5 - L6

3/ The tail end of the spinal cord is not “hanging loose.” It is actually anchored via the _____, which connects to the coccyx bone.

- a/ cauda equina
- b/ conus medullaris
- c/ filum terminale

4/ How many plexus groups branch off the spinal cord?

- a/ 3
- b/ 4
- c/ 5

5/Which of the following spinal cord regions are NOT involved with a plexus formation?

- a/ lumbar
- b/ thoracic
- c/ cervical

6/The cauda equina are nerves that branch off the spinal cord in which of the following areas?

- a/ inferior end
- b/ lateral edges
- c/ superior end

7/What is the name of the structures that hold the spinal cord in position within the vertebral foramen?

- a/ filum terminale
- b/ dorsal root ganglia
- c/ denticulate ligaments

8/Which of the following transmits information from the spinal cord to the extremities of the body?

- a/ ventral root
- b/ dorsal root
- c/ dorsal root ganglia

9/Fasciculi are bundles of nerve tracts associated with _____.

- a/ the gray matter of the spinal cord
- b/ the white matter of the spinal cord
- c/ the gray commissure of the spinal cord

10/The spinal cord consists of ascending tracts of axons and descending tracts of axons. Which of the following are correct in reference to those tracts?

- a/ The ascending tracts are found in the white matter and transmit sensory information. The descending tracts are found in the gray matter and transmit motor information.
- b/ Both tracts are found in the white matter. The ascending tract transmits sensory information while the descending tracts transmit motor information.

1-B
2-A
3-C
4-C
5-B
6-A
7-C
8-A
9-B
10-C