CHAPTER 12, CENTRAL NERVOUS SYSTEM – SPINAL CORD – STUDY GUIDE

Read: Pages 466-476 and review, Check Your Understanding, at the end of each section you’ve read.

The student should be able to:

1. Identify the structure the spinal cord is enclosed in.
2. Describe the two main functions of the spinal cord.
3. Describe the approximate length and thickness of the spinal cord.
4. Identify at what place in the skeleton the spinal cord starts and at what point does it end.
5. Provide the name of the terminal end of the spinal cord.
6. Identify the collective name for the spinal nerves that continue inferiorly beyond the spinal cord and explain the translation from Latin.
7. Identify the tissue that holds the Cauda Equina in a loose sac and provide the name for the sac.
8. Provide the name of the spinal cord meninges.
9. Describe a difference between the dura matter of the spinal cord and the brain.
10. Explain what is found between the arachnoid and pia matter and explain how far inferiorly they extended.
11. Describe what is found between the bony neural canal and the dura matter and give the possible significance of this area to a pregnant women.
12. Describe a spinal tap and give the general location of where it is performed.
13. Describe the basic shape of the spinal cord in a transverse view and identify the anterior and posterior grooves.
14. Identify the two types of tissues that make up the spinal cord.
15. Describe the shape or form the gray matter takes in a transverse view.
16. Identify the thin, central connection between the left and right halves of the gray matter.
17. Explain what is found running longitudinally in the center of the gray commissure.
18. Explain what is meant by the dorsal horns and ventral horns and in what section of the spinal cord are they found.
19. Explain what is meant by the lateral horns of the spinal cord and in what section of the spinal cord are they found.

20. Explain what factor determines the thickness of the spinal cord gray matter.

21. Explain why the spinal cord is thicker in the cervical and lumbar sections and identify the names of these two regions.

22. Explain which layer, the gray matter or the white matter has nerve fibers with a myelin sheath and identify the cells that make up this myelin sheath.

23. Describe the functions of the white matter.

24. Give the names of the three columns (funicules/funiculi).

25. The three columns of white matter are bundles of axons. Since they are in the CNS identify such a bundle.

26. Identify the two types of tracts found in the spinal cord.

27. Explain why the ascending tracts are sensory and why the descending tracts are motor.

28. Explain the function of the dorsal horn.

29. Explain the function of the ventral horn.

30. Describe how, dorsal horn, ventral horn, motor, sensory, ascending, descending, effectors, receptors, afferent and efferent all fit together in the spinal cord “big picture”

31. Explain where the afferent sensory peripheral nerves enter the spinal cord and provide the names of these final, terminal peripheral nerves.

32. Explain where the efferent motor peripheral nerves leave the spinal cord and provide the names of these initial proximal peripheral nerves.

33. Identify the structures formed when the motor and sensory rootlets merge outside the spinal cord.

34. Most nerves carry sensory and motor fibers. Identify the name of this type of nerve.