

C13 Study Guide (0723)

The Spinal Cord

C13-1

- 1 What type of axons are in a spinal nerve? Why are spinal nerves called mixed nerves? What type of structural neurons are in a mixed nerve? What are the afferent and efferent target tissues for a spinal nerve? (See C13_1 slide #16)
- 2 What are the three layers of the meninges of the spinal cord? What type of tissue is between the dura mater and the periosteum on the anterior and posterior side of the spinal cord? What is the clinical significance of this space?
- 3 What three structures are formed by the pia mater? What is the significance of these structures?
- 4 How is connective tissue arranged in a spinal nerve? How is it similar to the connective tissue in a skeletal muscle?
- 5 What are spinal tracts? What type of information is carried by ascending tracts and descending tracts? What terms do we use to explain the path taken by the tracts?
- 6 How many neurons are required to connect the origin of the sensation to the brain in an ascending tract? What are these neurons called? Where in the brain do these tracts project to? Name and location?
- 7 What type of signals are carried by the cuneate fasciculus and the gracile fasciculus?
- 8 What type of sensation is proprioception? Why is it called the forgotten sensation?
- 9 What type of information is carried by the spinothalamic pathway?
- 10 What type of information is carried by the spinoreticular tract?
- 11 What type of information is carried by the spinocerebellar tract?
- 12 What type of information is carried by the descending tracts? How many neurons are between the origin and the destination? What are the names of the two different descending pathways? The origin for each tract? Destination for each? Type of signal type?
- 13 What is the difference between corticospinal and corticobulbar descending tracts? What one term maybe used to describe these two tracts? What second tract type must be used to reach their final destination? What is the common term used to describe this tract? Where is the location for the skeletal muscles innervated by these two pathways?
- 14 The cuneate fasciculus, gracile fasciculus, and the spinalcerebellar tracts all carry proprioception signals? How are these signals different in the fasciculus tracts and the spinal cerebellar tract?

- 15 What is the function of the pyramidal and extrapyramidal tracks? Which track is strictly controls skeletal muscle voluntary contractions? Which track influence both voluntary muscle contractions and reflexes to skeletal muscles?
- 16 What is the basal nuclei structure? Location? Functions?

C13-2
- 17 Why are spinal nerves called mixed nerves? How is connective tissue arranged in the spinal nerve? How is it similar to connective tissue in a muscle fiber?
- 18 What type of signals are conducted through the dorsal and ventral roots? Lateral to the spinal cord, what do these two roots form? What do these roots form below the cauda equina?
- 19 What structural neuron in in the dorsal root ganglion? Significance?

C13-3
- 20 What is a reflex? What initiates a reflex? What three features define a reflex?
- 21 If the reflex is a skeletal muscle reflex, then where would the stimulus originate?
- 22 What is the function of a proprioceptor? What ascending tracts carry these signals? To where? Differences?
- 23 What are the flexors and extensors at the elbow and knee joints?
- 24 Sketch and explain the following reflexes: somatic flexor reflex, tendon reflex, stretch reflex, and golgi tendon organ reflex