

9.14

Class #8: PNS Anatomy

Readings:

Nauta and Feirtag, "Chapter 8", pp. 108-119.

Brodal, Per, "Chapter 17", *Peripheral Autonomic Nervous System*, 1998, pp. 493-529.

Questions:

1. Name each of the 12 cranial nerves, and note the brain subdivision where it arises. (From an earlier assignment; cf. Nauta, pp. 164 and 166).

On Nauta:

2. How is the innervation of the sweat glands atypical? (p. 111)
3. Describe three types of output channels of the hypothalamus.
4. What does Nauta mean by his statement about "growing intimations that the brain is secretly a gland"?
5. What does Nauta suggest about Walter Cannon's term "homeostasis" as the function of the autonomic system? (p. 113)

On Brodal:

6. Contrast the two main divisions of the autonomic nervous system:
 - a) location of the peripheral ganglion
 - b) length of preganglionic axons
 - c) neurotransmitters
 - d) types of functions served (give examples)
 - e) precision or diffuseness of action
 - f) location of preganglionic (CNS) neurons
7. Contrast: autonomic ganglia and autonomic plexuses. Give examples.
8. What is Horner's Syndrome? (p. 504)
9. Define the "enteric nervous system".
10. Explain some of the complications of neurotransmitter functions in the autonomic nervous system: different adrenergic receptors, and non-adrenergic, non-cholinergic transmission.
11. What route do sensory fibers coming from visceral organs take in reaching the CNS? What functional roles do these fibers play?
12. What anatomical features may account for the properties of pain originating in visceral organs?