

LECTURES 21, 22: PERIPHERAL NERVOUS SYSTEM AND AUTONOMIC NERVOUS SYSTEM

- 1) Define *peripheral nervous system*. Contrast components of the PNS and CNS; identify the basic divisions and subdivisions. (identify/organize the basic divisions and subdivisions (autonomic and somatic, visceral (sensory and motor))
- 2) Define *autonomic nervous system*; identify its effectors, describe its basic functions, and explain the relationship of the ANS to the PNS as a whole; stress that ANS is not a part of the CNS
- 3) Compare locations of cranial nerves and spinal nerves
- 4) Classify sensory receptors based on stimulus detected (mechanoreceptors, thermoreceptors, chemoreceptors, nociceptors, photoreceptors)
- 5) Differentiate between *root* and *ramus*
- 6) Define *nerve plexus*; name the four major nerve plexuses (cervical, brachial, sacral, and lumbar) and identify body regions served by major nerves from each plexus
- 7) Describe the autonomic nervous system in terms of types of effectors, number of neurons forming the pathway, speed of conduction along fibers, types of ganglia associated with each system, and neurotransmitters released
- 9) Identify the basic divisions of the ANS. Describe the functional differences between the sympathetic and parasympathetic divisions; explain “fight, flight, or fright” and “rest and digest.”
- 10) Describe the basic anatomical features of the parasympathetic division of the ANS; explain how the parasympathetic system relates to the brain, cranial nerves, and sacral spinal cord.
- 11) Describe the basic anatomical features of the sympathetic division of the ANS; explain how the sympathetic division relates to the spinal cord and spinal nerves.
- 12) Compare and contrast the effects of parasympathetic and sympathetic effects on the following organs: heart, blood vessels, gastrointestinal tract, and (optional) lungs.
- 13) Explain the role of the adrenal medulla as a major organ in the sympathetic division of the ANS.

Optional:

- 14) Describe the causes and symptoms of paraplegia, quadriplegia, shingles, migraine headaches, myasthenia gravis, polio, and postpolio syndrome.
- 15) Explain how dermatomes are related to the sensory innervation regions of the spinal nerves.
- 16) Discuss ANS disorders such as Raynaud's.