

Study Guide Chapter 15 (0723)
Structure and Function for Autonomic Nervous System

- 1 Why is this nervous system call “autonomic”? What is changed by this nervous system? What system “monitors” the internal environment for the ANS? Is it the “boss”?
- 2 Is the ANS voluntary? What structures are controlled by ANS? (Include structures in the cutaneous membrane)
- 3 Is an organ’s function dependent upon the ANS or or is the organ’s function simply modified by the ANS? Explain by using the heart.
- 4 What body structures are described as the “viscera”? What is the pathway for a visceral reflex arc? What is needed to start the reflex? Target tissue? What events occur in response to high blood pressure?
- 5 What are the two divisions of the ANS called? What phrases are used to describe the function of each divisions?
- 6 What is autonomic tone? Explain ANS tone for the parasympathetic division by sing the heart and sympathetic tone by using blood vessels.
- 7 Will an ANS division signal always have a similar effects (excite VS inhibit) on different organs? Explain.
- 8 How many neurons are required to carry an ANS signal from the spinal cord to the target tissue? What phrases are used to describe this pathway? What is unique about these neurons? What is between the neurons? How is this different than the somatic nervous pathway?
- 9 The ANS is an efferent pathway (sending signals to target tissue). Afferent pathways are used to tell inter-neurons the status of body. Where is the location for these inter-neurons? What terms describes the group of neurons making these types of decisions?
- 10 Where along the spinal column is the sympathetic division located? Where in the spinal cord is the soma for the preganglionic fiber located? What is the relative length for the pre and post ganglionic fibers?
- 11 What is the location and structure of the paravertebral ganglia (also known as the sympathetic chain ganglia)?
- 12 The sympathetic post ganglionic fibers may take three distinctive pathways. Explain (see C15_1 slide #18)
- 13 What are the three collateral ganglia listed as lab learning objectives?
- 14 Why is the sympathetic nervous system described as divergent” Explain.

- 15 Where are the adrenal glands located? How is the tissue of the adrenal gland organized? What maybe secreted from each section of the adrenal gland? Why is the inner core called a sympathetic ganglion?
- 16 How is the parasympathetic division of the ANS described based on the location of the preganglionic fibers? How are the pre and post ganglionic fibers of the parasympathetic division different than the fibers of the sympathetic division?
- 17 Why is the parasympathetic division described as having less neuronal divergence? Explain Significance.
- 18 We know at a synapse there are neurotransmitters and receptors. When thinking about the result between these two things, why is the receptor more important? Explain
- 19 In the ANS there are two neurotransmitters (acetylcholine and norepinephrin) and four receptors (nicotinic, muscarinic, adrenergic alpha, adrenergic beta). Study and be able to draw the illustrations on C15_1 slides 45 and 46.
- 20 What is the significance of antagonistic and cooperative effects when you have dual innervation (both division) of viscera? (slide 51)
- 21 What occurs with dual innervation to same organ with antagonistic effects? Explain using both heart and iris? slide 53
- 22 What effectors on have only sympathetic fiber innervation? How does this work?
- 23 Study the Summary of nervous system control of homeostasis (slide 60)