

Autonomic Nervous System and Visceral Reflexes
Chapter Study Guide (C15)
Tortora & Derrickson

1. >What are the target tissues of the autonomic nervous system? (There are three!)
2. >What are the two divisions of the ANS? General description of each division?
3. >How is the “pathway” for an ANS pathway different than the somatic nerve pathway? (think number of nerves to complete pathway)
4. >Where is the origin of the preganglionic neuron's soma for each division of the ANS? (Phase used to describe each division?)
5. >What is the ANS visceral reflex arc pathway? Figure 15.1
6. >What is autonomic tone?
7. SNS pathways / Study Figure 15.2 / Identify the different ganglion and note the relative lengths of the pre and post ganglionic nerves. Is the post ganglionic fibers divergent?
8. PNS Neural Pathways / Study Figure 15.3 / Follow the preganglionic and post ganglionic pathways. Is the post ganglionic fibers divergent? Explain.
9. What are the three major collateral ganglia of the SNS? (You need to know these for lab)
10. >What organ secretes molecules into the blood when you are scared (e.g. Boo)?
11. >Why is the adrenal gland described as a sympathetic ganglion?
12. >What are the neurotransmitters of the ANS? Fig 15.7
13. >What neurotransmitter is used at the ANS ganglia? Receptor type?
14. >What neurotransmitter is used by the post ganglionic fibers?
15. What is the meaning of adrenergic and cholinergic related to nerve fibers and receptors?
16. What is the function and structure of acetylcholine receptors?
17. What is the function and structure of norepinephrine receptors?

18. What is the difference between ionotropic and metabotropic receptors? Which one is always stimulatory? Which one may have a variety of different outcomes?
19. What is the enteric nervous system? How is it different than the PNS and SNS? How is it similar? Regulation?
20. What is meaning of ANS dual innervation? Example
21. The ANS is not completely autonomic. It is influenced by the cerebral cortex, hypothalamus, and limbic system Explain:
22. Why is the ANS considered part of the “reptilian brain”?
23. What is the difference between cholinergic and adrenergic fibers?
24. What neurotransmitter uses muscarinic and nicotinic receptors? Which receptor is ionotropic and metabotropic?