Biology 48 - Human Physiology
Lecture Summary Sheet - Norris

Nervous System: Organization / Autonomic NS

I. Definitions
  A. Afferent (sensory)
  B. Efferent (motor)
    1. Somatic
    2. Autonomic
  C. Integration

II. Functional Neuronal Circuitry (neuronal pools)
  A. Linear
  B. Convergent / Divergent
  C. Inhibitory
  D. Parallel (lateral inhibition / facilitation)
  E. Reverberating

  F. Reflex Circuits
    - monosynaptic reflex (i.e. patellar tendon reflex)
    - polysynaptic reflex (i.e. crossed extensor reflex)

III. Central Nervous System (CNS) **-** The Central Nervous System, composed of the brain and spinal cord, is the integration center of the nervous system

IV. Peripheral Nervous System (PNS) - The Peripheral Nervous System is the communication network of the nervous system

V. Divisions of the Peripheral Nervous System (PNS)
  A. Afferent (Sensory)
  B. Efferent (Motor)
    1. Somatic
    2. Autonomic (ANS)
      a. Sympathetic (SNS)
      b. Parasympathetic (PNS)

VI. Autonomic Nervous System (ANS)
  A. Characteristics

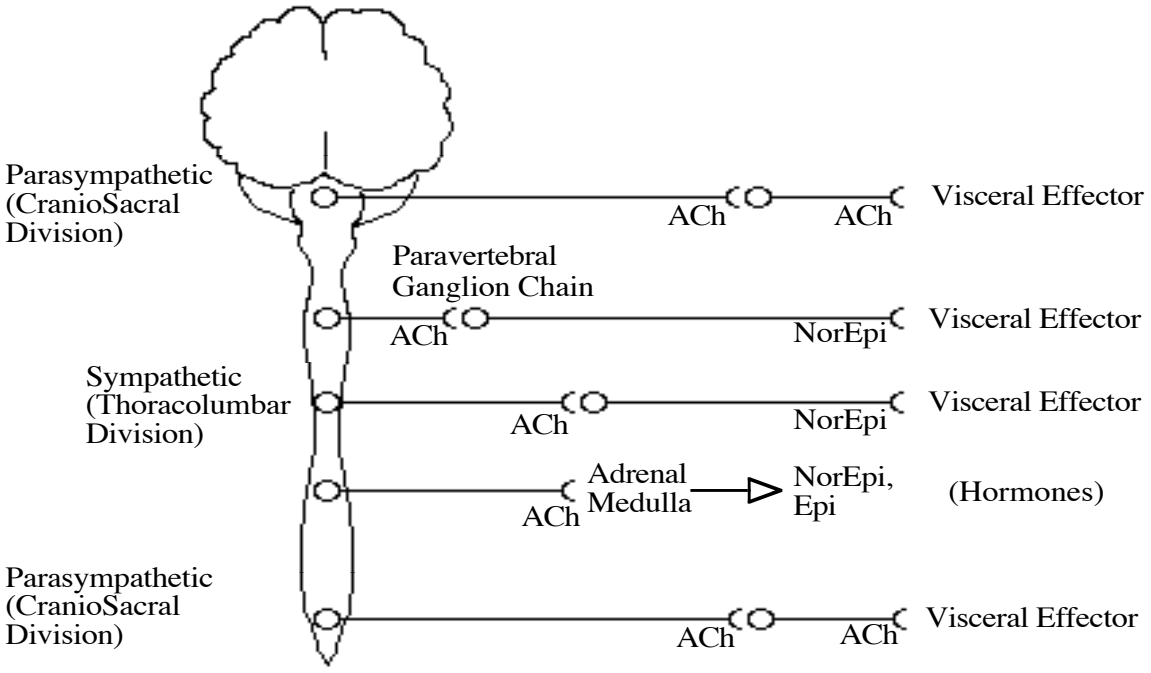
  B. Structure

  C. Divisions
    1. Sympathetic (SNS)
      a. Structure (thoracolumbar division)

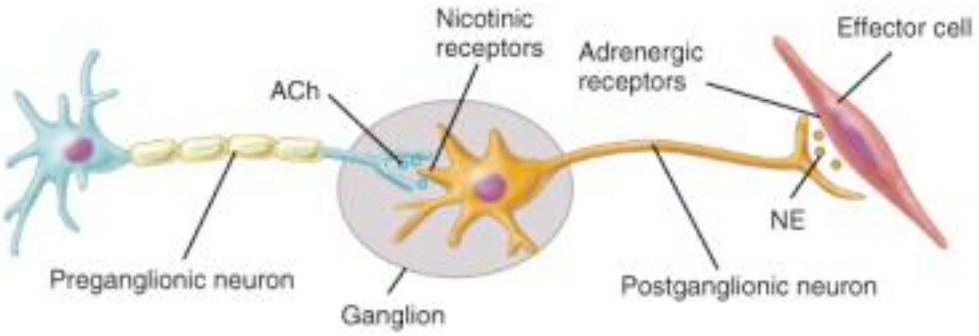
      b. Actions - "Fight-or-Flight" response

    2. Parasympathetic (PNS)
      a. Structure (craniosacral division)

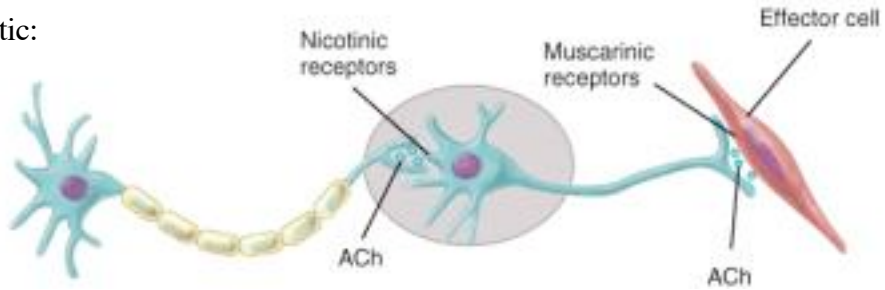
      b. Actions - energy conservation



Sympathetic:



Parasympathetic:



VII. Additional Key Terms

Adrenergic	agonist	antagonist	catacholamine	cholinergic	ganglia
lytic	mimetic	muscarinic	nicotinic	nucleus	postsynaptic
presynaptic	tone	tract			

Study Questions – Nervous System: Organisation/ANS:

1. Describe the different divisions of the peripheral nervous system (aka afferent & efferent).
2. Define "integration".
3. Where does integration occur (in terms of gross anatomy and in terms of cellular neuroanatomy)?
4. Describe the different ways neurons can be interconnected to produce simple neural circuits.
5. Draw and label an illustration of a simple monosynaptic reflex arc identifying all of the neuron types.
6. Draw and label an illustration of a polysynaptic reflex arc identifying all of the neuron types.
7. Draw and label a schematic illustration representing the divisions of the peripheral nervous system identifying the CNS origins/termination, number of neurons, types of neurons and presence of myelination.
8. Describe the structural and functional characteristics of the somatic division of the nervous system.
9. Describe the structural and functional characteristics of the autonomic division of the nervous system.
10. Compare and contrast the somatic and autonomic divisions of the nervous system.
11. Compare and contrast the sympathetic and parasympathetic divisions of the autonomic nervous system.
12. Draw and label a schematic illustration representing the divisions of the autonomic nervous system identifying the CNS origins, number and type of neurons, presence of myelination, peripheral ganglia, and neurotransmitter and receptor types associated with each synapse.
13. Define the following terms: adrenergic, catecholamine, catacholaminergic, cholinergic, lytic, mimetic, muscarinic, nicotinic