

# The Autonomic Nervous System

# Chapter 15

## I. Background

### A. ANS

### B. Comparison - somatic vs autonomic

#### 1. effector organs

#### 2. structure

##### a. SNS

##### b. ANS

#### 1) preganglionic neuron

#### 2) postganglionic neuron

## II. Subdivisions of ANS

### A. Sympathetic

#### 1. Overview

##### a. flight-or-fight

#### 2. Anatomy

##### a. site of origin - thoracolumbar division

##### b. fibers

#### 1) preganglionic neurons

##### a) white ramus

##### b) sympathetic trunk

#### 2) synapse

#### 3) postganglionic neurons

##### a) gray ramus

### B. Parasympathetic

#### 1. Overview

##### a. resting & digesting

#### 2. Anatomy

##### a. site of origin - craniosacral division

#### 1) cranial nerves

#### 2) vagus nerve

#### 3) sacral nerves

##### b. fibers

#### 1) terminal ganglia

## III. Neurotransmitters

### A. Acetylcholine (ACh)

#### 1. cholinergic fibers

#### 2. release

#### 3. receptors

##### a. nicotinic

##### b. muscarinic

### B. Norepinephrine (NE)

#### 1. adrenergic fibers

#### 2. release

#### 3. receptors

##### a. $\beta$ blockers

##### b. phenylephrine

## IV. Communication

## V. Control

### A. Brain stem & spinal cord controls

### B. Hypothalamic control

### C. Cortical control