

## CHAPTER TWO: Neurobiology

### NEUROTRANSMISSION: ("All-on-None Response.")

Sodium and Potassium Ions

Polarization (Resting Potential vs. Depolarization (Action Potential))

Important parts of the process:

Axons, Dendrites, Synapse, Myelin Sheath

Specific Neurotransmitters: Endorphins, Dopamine, Serotonin.

Agonists (mimic chemicals in the brain) vs. Antagonists. (blocks chemicals)

### The Nervous Systems:

Just know the Autonomic System: (our self-regulatory system.)

Two parts of this: Sympathetic ("fight-or-flight") and the  
Parasympathetic (calming system.)

### THE BRAIN:

Evolutionary Areas:

Brainstem: Includes the thalamus ("switchboard,") the reticular  
Formation (arousal center) and medulla (life support.)

Limbic System: Includes the hippocampus (memory), amygdala  
(rage and aggression) and hypothalamus (basic drives)

Cerebral Cortex: Covering and info processing center.

Also: The Hemispheres: Right Brain (special and creative)  
Left Brain (logic and language)

The Lobes: Frontal (judgment and personality)

Occipital (sight)

Parietal (touch)

Temporal (hearing.)

Brain Imaging Techniques:

CT Scans, PET scans, MRIs, and EEGs.

### THE ENDOCRINE SYSTEM:

Controlled by the Hypothalamus (Brain area called the "pleasure center.")

This system includes our glands (adrenal and pituitary) and hormones  
(testosterone and androgen – males and estrogen – females.)

Our hormones travel through the bloodstream.