-cannot go backwards because initial action potential site is depolarized; yielding one-way conduction of impulse

Receptor Molecules in Synapses - ANS-neurotransmitter only "fits" in one receptors

not all cells have receptors

neurotransmitters are excitatory in some cells and inhibitory in others

some neurotransmitters (norepinephrine) attach to the presynaptic terminal as well as postsynaptic and then inhibit the release of more neurotransmitter

Refractory Period - ANS-sensitivity of area to further stimulation decreases for a time;

Parts: absolute and relative

relative refractory period - ANSa stronger-than-threshold stimulus can initiate another potential

Saltatory Conduction - ANS1. An action potential at a node of ranvier generates local currents;
-local currents flow to the next node of ranvier bc the myelin sheath of the schwann cell insulates the axon of the internode;

2. when depolarization caused by local currents reaches threshold at the next node of ranvier; a new action potential is produced;

3. Action potential propagation is rapid in myelinated axons; because the action potentials are produced at successive nodes of Ranvier (1-5); instead of at every part of the membrane along the axon

Satellite Cells - ANSNeuroglia of the PNS;

surround neuron cell bodies in sensory ganglia;

provide support and nutrients;

Schwann Cells - ANSNeurolemmocytes; They are the Neuroglia of the PNS;
wrap around portion of only one axon to form myelin sheath;
it wraps around many times;
during development;
-cells grow around axons;
-cytoplasm is squeezed out;
-multiple layers of cell membrane wrap around myelin sheath

Sensory Receptors - ANS-ending of neurons;

Types of Classifications of Neurons - ANSFunctional Classifications and Structural Classifications

Unipolar Neurons - ANSsingle process that divides into two branches;

part extending towards periphery; has dendrite like sensory receptors;

appears to have an axon; and no dendrites

unmyelinated axons - ANSrest in invaginations of schwann cells; or oligodendrocytes;

not wrapped around the axon;

Is gray matter

Voltage-Gated Ion Channels - ANSopen/close in response to small voltage changes across the cell membrane

at rest membrane is negative on the inside relative to the outside

when the cell is stimulated relative charge changes and voltage-gated ion channels either open or close
-most common are Na+ and K=
in cardiac muscle Ca2+ is important

White Matter - ANSmyelinated axons;
nerve tracts spread action potentials from one area in CNS to the other;
white matter is deeper than gray;
-gray= outer cortex/inner nuclei;
in spinal cord white is the outer layer