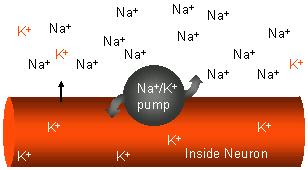
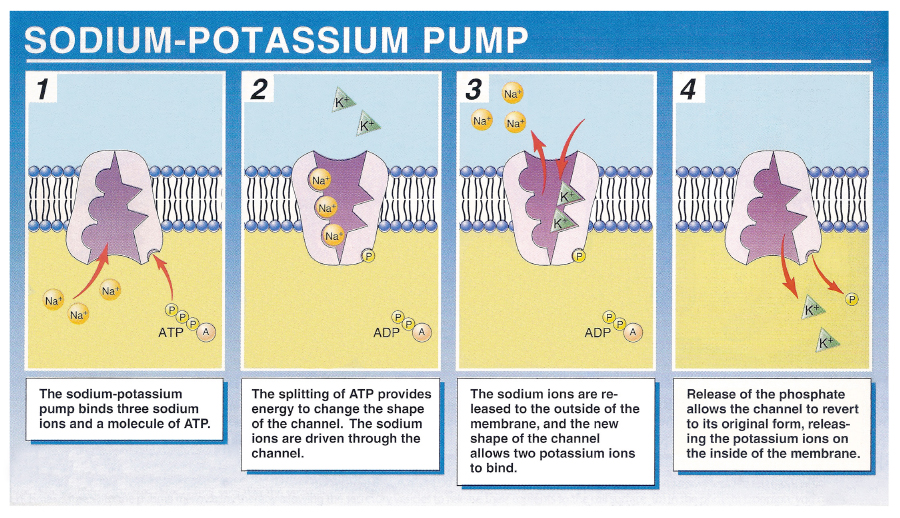
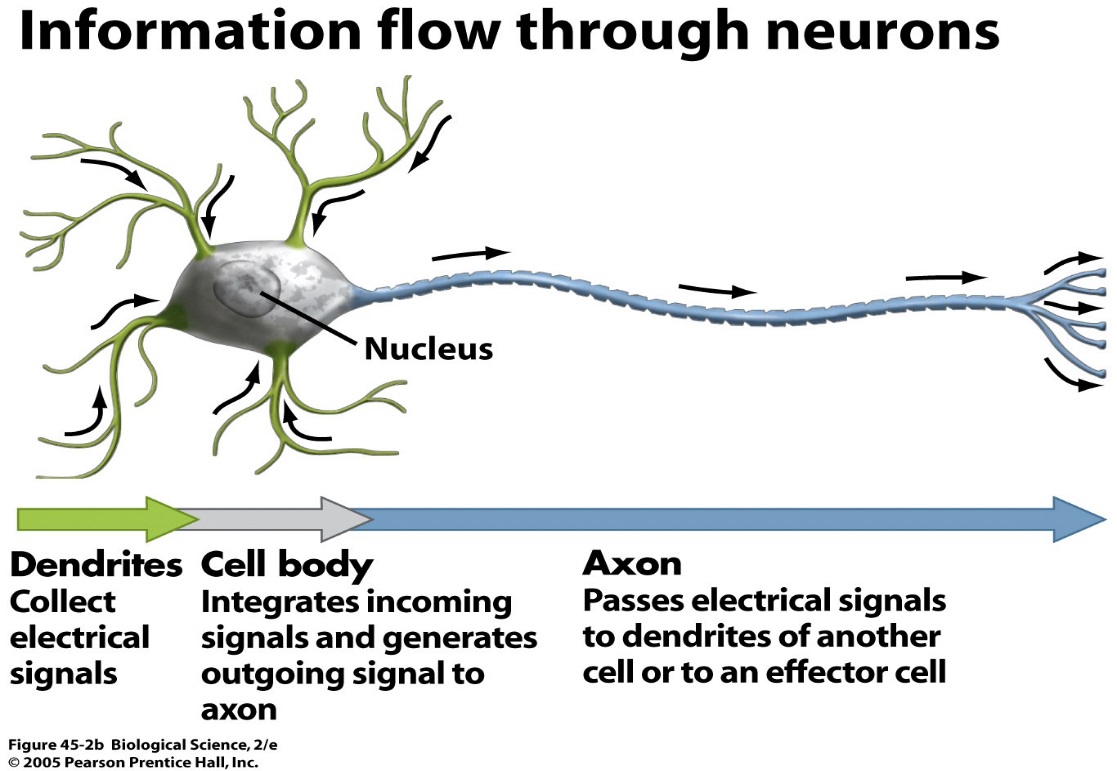
**Neural Communication**

**Resting potential**: no electrical impulse (communication) being conducted. Cell maintains a more negative charge inside the cell than outside. The cell membrane is selectively permeable; it will not allow sodium or potassium ions to pass through passively. An active transport mechanism is required..

**Sodium/Potassium pump** (NA+/K+) **pump**-Active transport mechanism that maintains resting potential in neurons; it moves 3 positively charged sodium ions OUT of the cell, and 2 positively charged potassium ions INTO the cell.



**Dendrites**-bushy cellular extensions that receive messages/signals from other neurons, sensory receptors, etc. These messages can be either excitation signals that try to get the neuron to fire off an action potential, or inhibition signals that try to keep the neuron in a resting potential.



**Signals are either excitatory or inhibitory**

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**Threshold**-When the number of incoming excitation signals exceed the number of incoming inhibitory signals by a minimum amount, the THRESHOLD has been met. This causes a brief change in the electrical charge of the cell, and an action potential is fired. The action potential is always the same; if the threshold is met, it fires, regardless of whether the threshold is barely met, or greatly exceeded. This is known as the “ALL OR NONE” principle

**Action potential**-When the threshold is met, the cell membrane’s permeability changes, allowing positive ions to flow into the cell. This causes an electrical impulse to travel down the axon sections to the axon terminals.

**Synapse/Neurotransmitters**-When the action potential reaches the axon terminals, they cannot travel across the synaptic gap. Instead, the release of Neurotransmitters (NTs) is triggered. These NTs cross the synaptic gap, bonding to receptor sites on the receiving dendrites, opening them up, and allowing the ions (and the excitation/inhibition signals associated with each) to flow into the receiving dendrites.

