**Key Neurotransmitters in the Brain**

**and Chemical Synapses**

Neurotransmitters, and primary functions in the brain:

1. **Acetycholine**

Controls movement, posture, and modulates mood.

2. **Gamma-Amino Butyric Acid**

Inhibitory. Contributes to motor control, vision, and regulates anxiety.

3. **Glutamate**

Excitatory. Associated with learning and memory.

4. **Norepinephrine**

Emotions, sleeping, dreaming, and learning.

5. **Serotonin**

Sleep, mood, anxiety, pain, and body temperature.

6. **Dopamine**

Triggers muscle contraction and is involved in such things as attentiveness, anger, aggression, and sexuality.

A synapse is a miniscule gap, 20 nanometers (nm) in size (one nm is a billionth of a meter), which allows neurotransmission, that is, communication between neurons by movement of chemicals or electrical signals across the synapse. There is one axon for each neuron, and multiple dendrites. When certain electrical activity takes place in the brain (action potentials), the signal is passed along the axon, to what is called the axon terminal. Neurotransmission is the communication between neurons at the synaptic connection.

As neurons fire together, they wire together. The resulting sequence of electro-chemical patterns is virtually all the brain knows.