Neurotransmitters :

Watch : Youtube video

Neurotransmitter Synapse 3D Animation

Substances stored and secreted from vesicles inside axon terminals. They diffuse across the synapse space to attach to receptors on postsynaptic neurons. Once there, they will immediately begin to be broken down by enzymes released from the presynaptic neuron.

In the case of motor neurons, the NT's can excite or inhibit the action of muscles or body organs.

There are two classes of NT's....

Excitory :

When contact is made with a postsynaptic neuron's receptors, sodium gates of that neuron open. (Na floods in and causes depolarization)

Inhibitory :

Makes the postsynaptic neuron more negative on the inside, (opens chloride

channels to let more negative chloride ions in) so the threshold strength level required to set the neuron off is higher. (ie. It takes a greater flood of sodium coming in to trigger depolarization)

Examples.....

Acetylcholine-

the main NT in a human, two roles, exciting skeletal muscle, inhibiting heart muscle. Broken apart by the enzyme acetylcholinesterase.

Noradrenaline -

The main NT of the sympathetic NS.

Glutamate -

Excitory NT in brain tissue.

GABA -

Inhibitory NT in brain tissue. Increases axon permeability to chloride ions, raising threshold strength level.

Dopamine-

Lifts mood, controls skeletal muscles

Seratonin-

Alertness level, sleepiness, mood, temp control. Low levels of serotonin may contribute to depression. Medications that block the re-uptake of serotonin are used to treat cases of depression. (SSRI's). Another class of medications, MAOI's, block the action of MAO's (which break down serotonin) and therefore also boost serotonin levels.