

Neurotransmitters are chemicals essay

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Neurotransmitters are chemicals that relay, amplify, and modulate electrical signals between neurons and other cells. These substances that act like neurotransmitters are categorized into three major groups, including amino acids, peptides, and monoamines (Best, 2006). For instance, acetylcholine is a neurotransmitter that is involved with voluntary movement of the muscles; and dopamine is released for voluntary movement and emotional arousal (Neurotransmitter, 2006).

An individual's wakefulness is dependent on norepinephrine and serotonin. Serotonin is also responsible for an individual's memory, emotional response, sleep patterns, and temperature regulation (Neurotransmitter, 2006). Neurotransmitters, generally, have specific actions that are targeted by drugs.

Cocaine blocks the re-uptake of dopamine, which leaves the neurotransmitters in the synaptic gap longer (Neurotransmitter, 2006). Furthermore, diseases affect specific neurotransmitter pathways. Parkinson's disease is in part related to the failure of dopaminergic cells deep within the brain's nuclei – substantia nigra. Treatment for this disease potentially affects the dopamine precursors, which show moderate success (Best, 2006).

The importance of knowledge when dealing with the biology of neurotransmitters is substantial. With understanding, medical research can help promote medical treatment for individuals who suffer from neurotransmitter disease and impairments.

References Best, B. (2006).

Brain Neurotransmitters . Neurotransmitter.

(2006). *Endogenous Neuroactive Extracellular Signal Transducers* .