**Addiction, Adderall , and the Brain**

# Adderall Background Information

* Therapeutic use is to treat ADHD and narcolepsy (autoimmune destruction of hypocretin-secreting neurons resulting in a loss of function in sleep/wake cycle)
* One of the most abused drugs on college campuses
* Increase in probability of Adderall use occurs with other drugs of abuse use
* Similar structure to MDMA and methamphetamine

# Side Effects

* Disrupted heart rhythm and increased blood pressure
* Loss of appetite
* Headaches
* Dryness of mouth
* Issues sleeping
* Increase chances of alcohol poisoning

# Long Term Abuse Effects

* Cardiovascular problems
* Depression
* Hostility/Stress
* Paranoia/Delusions
* Inhibits growth in children

# Why is it abused

* Causes a sense of euphoria
* Releases 5-HT, DA, & Adrenaline
* Psychologically & Physical addiction

# Adderall Effects on the Brain

* Amphetamines in Adderall can bing to receptors activated by catecholamine produced by the hypothalamus and adrenal medulla
* Causes an increased release of neurotransmitters that activate sensory regions in nervous system
* Inhibits function of monoamine transporters
* Boosts neurotransmitters in the brain (DA and norepinephrine)
* Monoamines function to re-uptake and recycle catecholamine neurotransmitters which stops neural signal
* Amphetamines are transported from the synapse through transporters into the presynaptic transmitters as catecholamine are returned to presynaptic neurons
* Increased level on neurotransmitters in presynaptic neuron causes the cell to depolarize
* Amphetamines act as monoamine oxidase enzyme inhibitor

# Issues with *ALL* Adderall Use

* Causes hallucinations
* Long term use permanently alters brain (synaptic plasticity)
* Continued loss of DA
* Adderall tricks brain to stop DA synthesis
* Loss of catecholamine

# Why do students continue to abuse Adderall?

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