ADDICTION ON THE BRAIN

THE ADDICTION PROCESS

DRUGS

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Binge/Intoxication
(Basal Ganglia)

Preoccupation/Anticipation
(Prefrontal Cortex)

REPEAT

Withdrawal/Bad Mood
(Extended Amygdala)

All substances impact the brain in the same locations:

- Basal ganglia
- Extended amygdala
- Prefrontal cortex

It does not matter the drug - alcohol, cocaine, commercial tobacco, marijuana, methamphetamines, or prescription opioids.

Basal Ganglia

- Responsible for learning routine behaviors, forming habits, and the section where rewarding experiences are stored.
- Pleasure or relief is felt here.
- The brain takes note of your surroundings to normalize and train the brain to do this again and again.

Extended Amygdala

- Regulates reactions to stress occurs here.
- The connection between natural chemicals involved in rewards and decision making are disrupted.
- The reward system works less and less--leading to addiction.

Prefrontal Cortex

- Emotions and impulses are regulated here, Setting priorities and task organization occur here.
- Sensitive to signals from amygdala.
- The ability to stop and think is decreased and impulses are acted on.

These structures work together to help coordinate our experiences by providing meaning, what is pleasurable, and decision making.

TRAUMA also impacts the same parts of the brain.

Disturbing the normal chemistry and structure leads to changes in brain functions. Altering the normal functions produces behaviors we see in individuals with substance misuse addiction behaviors. Earlier substance misuse exposure, alters the brain structure.

For More Information:
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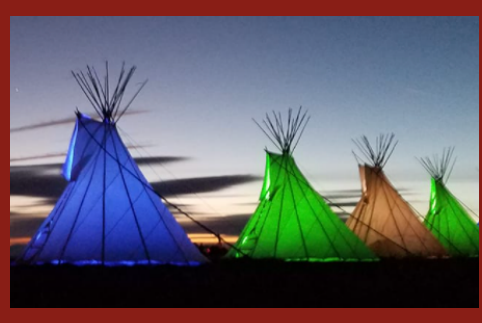

References: Adapted from TOR: Stimulants on the Brain webinar from speaker Dr. Melinda Campopiano, ATTC Network, date: May 26, 2021 and U.S. Department of Health and Human Services (HHS), Office of the Surgeon General, Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and and Health. Washington, DC: HHS, November 2016.