Mindful Continuing Education

Drugs, The Brain, and Behavior: 2018 Update

Drug Misuse and Addiction

1. Addiction is defined as a chronic, relapsing disorder characterized by compulsive drug seeking and use despite adverse consequences, and it is considered a brain disorder because it involves functional changes to brain circuits involved in reward, stress, and:

A. Motivation
B. Problem-solving
C. Self-control
D. Pleasure seeking

What Biological Factors Increase the Risk of Addiction?

2. Each of the following is an accurate statement about factors that impact addiction EXCEPT:

A. Biological factors that can affect a person’s risk of addiction include their genes, stage of development, and gender or ethnicity
B. Scientists estimate that genetic factors account for between 25 and 45 percent of a person's vulnerability to addiction
C. Adolescents and people with mental disorders are at greater risk of drug abuse and addiction than the general population
D. Epigentetics, which is the effects environmental factors have on a person’s gene expression, impact addiction risk

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3. Adolescents' brains are a work in progress that puts them at increased risk for making poor decisions, and drug use during this time may cause damage to the part of the brain that enables them to assess situations, make sound decisions, and keep their emotions and desires under control, which is the:

A. Cerebellum
B. Cerebral cortex
C. Hippocampus
D. Prefrontal cortex

How Do Drugs Work in the Brain?

4. Which of the following is NOT an accurate statement about how drug use impacts the brain?

A. Drugs interfere with the way neurons send, receive, and process signals via neurotransmitters
B. Drugs mimic the brain's own chemicals, and they activate neurons in the same way as a natural neurotransmitter, which leads to excessive messages being sent through the network
C. Some drugs, such as marijuana and heroin, can activate neurons because their chemical structure mimics that of a natural neurotransmitter in the body, and this allows the drugs to attach onto and activate the neurons
D. Amphetamine or cocaine can cause neurons to release abnormally large amounts of natural neurotransmitters or prevent the normal recycling of these brain chemicals by interfering with transporters

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How do Drugs Produce Pleasure?

5. Although the pleasure or euphoria received from drug use is still poorly understood, it likely involves surges of chemical signaling compounds including the body's natural opioids and other neurotransmitters in parts of the basal ganglia.

A. True
B. False

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6. Just as drugs produce intense euphoria, they also produce much larger surges of dopamine, powerfully reinforcing the connection between consumption of the drug, the resulting pleasure, and:

A. Compulsivity
B. Overstimulation
C. Desensitization to the substance
D. All the external cues linked to the experience

Treatment and Recovery

7. Although treatment for drug addiction usually isn't a cure, addiction can be managed successfully, and according to the authors, treatment enables people to counteract addiction's disruptive effects on their brain and behavior and:

A. Rebuild damaged relationships
B. Create emotional and physical sobriety
C. Regain control of their lives
D. Enhance healthy personal and social development

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8. Brain images illustrating the density of dopamine transporters in the brain are used to demonstrate the brain’s remarkable ability to recover, at least in part, after a long abstinence from drugs.

A. True
B. False
