Stimulants

Patient Education Module

Cocaine

Cocaine is a powerful stimulant that is used legally as a local anesthetic for some eye, ear, and throat surgeries. It may contain other substances, such as cornstarch, talcum powder, or sugar. It may also contain other drugs, such as another local anesthetic called procaine or a stimulant such as amphetamine. Small amounts of cocaine make a person feel euphoric, energetic, talkative, and mentally alert. It also decreases appetite and the need for sleep. When large amounts of cocaine are taken, the high is more intense. But large doses can cause strange or violent behavior in which the person may have tremors or muscle twitches or become paranoid. After using cocaine, the person feels irritable, tired, and depressed. This is called a coke crash. When a person takes the drug at higher and higher doses (a binge), it can cause increasing irritability, restlessness, and paranoia that can result in a serious loss of touch with reality (paranoid psychosis). Cocaine is a very addictive drug, and some people easily lose control over its use.

Methamphetamine

Methamphetamine is a stimulant commonly abused in many parts of the United States. Methamphetamine use produces a rapid, pleasurable rush followed by euphoria, heightened attention, and increased energy. Chronic methamphetamine use is associated with neurologic and psychiatric symptoms and changes in physical appearance. High-risk sexual activity and transmission of human immunodeficiency virus are also associated with methamphetamine use. Treatment of methamphetamine intoxication is primarily supportive.

Prescription Stimulants:

Prescription stimulants are often used to treat attention deficit hyperactivity disorder (ADHD). Drugs like methylphenidate (Ritalin, Concerta), dextroamphetamine (Dexedrine), and dextroamphetamine-amphetamine (Adderall) help people with ADHD feel more focused. However, misuse of stimulants by ADHD and non-affected individuals has dramatically increased over recent years based on misconceptions or lack of knowledge of associated risks. Given the widespread belief that stimulants enhance performance, there are in fact only a few, weak studies reporting the cognitive enhancing effects of stimulants in ADHD and non-affected individuals. Individuals should be apprised of the very serious consequences that can emerge when stimulants are used to try and improve cognitive and sports performance.

Consequences of Stimulant Abuse

The use of stimulants is associated with many dangers and can lead to serious health problems, including:

1. *Sudden death.* Sometimes sudden death can occur, *even with the first use of stimulants*. Sudden death from stimulants use may occur because of a heart attack or seizure, in which breathing stops. Sudden death is more likely to occur when stimulants are used along with alcohol.
2. *Changes in heart rhythm.*
3. *Heart attack*
4. *Headache*
5. *Seizure*
6. *Stroke*

7. When the drug is snorted: a. *loss of smell, b. persistent runny nose, c. nosebleeds, d. hoarseness, and e. destruction of the nasal septum.*
8. *Bowel tissue death.*
9. *Aortic dissection*
10. When injected into a vein, serious infections such as: *a. HIV, or b. Hepatitis C.*
11. *Allergic reactions*
12. *Weight loss and poor nutrition from loss of appetite.*
13. *Rhabdomyolysis*
14. *Cardiomyopathy*
15. *Psychosis*
16. During pregnancy: *a. placental abruption, b. intrauterine growth retardation, and c. preterm birth*

Treatment of Stimulant Abuse

The treatment of stimulant abuse is mainly behavioral; cognitive behavior therapy, contingency management, and the Matrix Model have been shown to be effective. Medications that have shown some promise in the treatment of stimulant abuse are as follows:

Paxil: An antidepressant, Paxil was found to decrease methamphetamine craving and ease the effects of methamphetamine withdrawal.

Bupropion: An Antidepressant, Bupropion was found to be effective in reducing methamphetamine abuse in low to moderate users and to reduce cue-induced cravings. During withdrawal, the brain of a methamphetamine addict resembles the brain of a depressed patient. Antidepressants may help during these beginning stages of treatment. Bupropion offers promise as an anti-addiction medication reducing symptoms of depression and cue-induced cravings.

Mirtazapine: An antidepressant that was found to decrease methamphetamine use. Mirtazapine helps release several brain chemicals including norepinephrine, serotonin and dopamine that are involved in mood.

Gabapentin: An anticonvulsant which reduces cocaine use, makes cocaine cravings easier to overcome and relapses less severe. Gabapentin increases brain GABA, a neurotransmitter in the brain that has a calming effect, increasing relaxation and reducing stress and anxiety

Vigabatrin: An anti epileptic drug which reduces cocaine cravings. Vigabatrin increases the amount of the neurotransmitter GABA in the brain.

Baclofen: A muscle relaxant found to curb cocaine cravings and reduce use of cocaine especially in chronic, heavy users. Baclofen increases the amount of GABA in the brain, a neurotransmitter that has a calming and relaxing effect.