

PRESCRIPTION STIMULANTS

WHEN USED AS PRESCRIBED, PRESCRIPTION STIMULANTS ARE SAFE DRUGS THAT HELP MILLIONS OF TEENS. BUT ABUSING THEM IS DANGEROUS AND CAN BE ADDICTIVE.

The most recent *Monitoring the Future* survey shows a disturbing fact: Prescription stimulants such as Adderall® and Ritalin® are two of the drugs most frequently abused by high school seniors, with 6.5 percent reporting nonmedical use of Adderall® in the past year.¹ Doctors prescribe stimulants to treat attention deficit hyperactivity disorder (ADHD), narcolepsy (a sleep disorder), and, occasionally, depression.

When taken as prescribed, these medications help a lot of people.

Unfortunately, they are too often abused by being taken in doses and/or in ways other than intended, or by being used by someone for whom they were not prescribed. Prescription stimulants are powerful drugs, and when they are abused there can be serious health consequences, including addiction. Read on to get the facts about prescription stimulants and why abusing them is dangerous.

¹ "Monitoring the Future survey, Overview of Findings 2010," National Institute on Drug Abuse, <http://drugabuse.gov/newsroom/10/mtf10overview.html>.

What Are Prescription Stimulants?

Prescription stimulants include medications such as methylphenidate (Ritalin® and Concerta®) and amphetamines (Dexedrine® and Adderall®). These medications, which are in the same class of drugs as cocaine and methamphetamine ("meth"), increase alertness, energy, and attention. Like all stimulant drugs, prescription stimulants increase levels of dopamine in the brain. Dopamine is a neurotransmitter associated with pleasure, movement, and attention.

How Do Prescription Stimulants Treat ADHD?

People with ADHD have problems maintaining attention (e.g., fidgeting or trouble concentrating), and may be more hyperactive and impulsive than others of the same age. For teens, this can result in difficulty with completing schoolwork or other tasks. Doctors prescribe stimulants such as Concerta® and Adderall®, sometimes in combination with counseling, to treat these symptoms. These stimulants can have a calming effect on people with ADHD that helps them focus, dramatically



improving their ability to stay organized and complete tasks.

When prescribed, stimulant medications are usually started at a low dose and gradually increased until symptoms subside, or until side effects become problematic. When taken as directed, prescription stimulants produce slow, steady increases of dopamine in the brain. Scientists think that these gradual increases may help to correct abnormal dopamine signaling that may occur in the brains of people with ADHD.

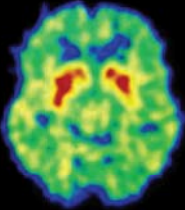
Why Do They Require a Prescription?

Prescription stimulants are strong medications, and their proper use needs a doctor's supervision. The first step is an accurate diagnosis of a physical or mental disorder, such as ADHD, by a qualified doctor. Then, if appropriate, stimulants may be prescribed. A doctor should monitor both the positive and possibly negative effects of the medication to make sure it's treating symptoms as intended.

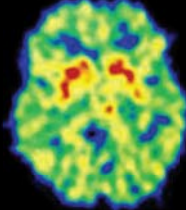


Prescription Stimulants and Cocaine Act on the Same Parts of the Brain

The two brain scans below show how cocaine and methylphenidate (Ritalin®) both act on the same dopamine sites in the brain. Dopamine is a brain chemical associated with attention and pleasure.



Cocaine



Methylphenidate

Note: In this study, both drugs were given intravenously to demonstrate that they affect similar mechanisms in the brain. However, when taken orally, methylphenidate causes a much slower increase in dopamine levels, and does not create the same euphoria experienced with cocaine.

Brain scan images from: Arch Gen Psychiatry 1995;52(6):456-463. Copyright © 2011 American Medical Association. All rights reserved.

Why Are Prescription Stimulants Abused?

Many teens report abusing prescription stimulants to get high because they mistakenly believe that prescription drugs are a “safer” alternative to illicit drugs. Teens also report abusing prescription stimulants to try to lose weight or increase wakefulness and attention. Some even abuse them to get better grades. Research, however, shows that stimulant abuse is actually linked to poorer academic performance. Why? Because people who abuse stimulants often take other drugs and engage in behavior that puts their academic performance at risk (e.g., skipping classes).

Is Abusing Prescription Stimulants Dangerous?

Yes. In fact, taking prescription stimulants in high doses, or by injection, smoking, or snorting, can affect the brain in ways similar to cocaine or other drugs of abuse (see above right). Prescription stimulant abuse can result in abnormally

You are abusing prescription stimulants if . . .	Risks
. . . you take them to cram for a test.	Stimulants can help you stay awake, but they can also make you feel jittery, anxious, irritable, and even paranoid. Stimulants may improve certain skills (e.g., focused attention) at the expense of others (e.g., creative thinking). There is no evidence that stimulants improve academic performance in someone who does not have ADHD.
. . . you take them to try to lose weight.	Abusing stimulants can decrease appetite, which can lead to weight loss and malnutrition. Plus, when a person stops taking the stimulants, he or she usually gains the weight back, and sometimes puts on a few more pounds. Thus, stimulants do not provide a long-term weight-loss solution, and chronic use increases the risk of addiction and other health consequences.
. . . you take them to get high.	To get high on stimulants, people may take them in higher doses than prescribed or by routes other than oral (e.g., snorted, smoked, or injected). This practice increases the risk of serious health consequences. High doses can cause blood vessels to narrow, forcing the heart to work harder, and possibly lose its normal rhythm. This could lead to a heart attack or a stroke.

high levels of dopamine, producing euphoria, an intense feeling of happiness. This increases the risk for abusing again, and ultimately for becoming addicted.

Abusing prescription stimulants can also result in increased blood pressure, heart rate, and body temperature, as well as nausea, headaches, anxiety, psychosis, seizures, stroke, and heart failure. Individuals who chronically abuse prescription stimulants may experience withdrawal symptoms when they stop using them. These

symptoms can include fatigue, depression, and disturbed sleep patterns. Although not life threatening, these symptoms often prompt a return to drug use.

Important Resources

- For more information on drugs, go to <http://teens.drugabuse.gov> or www.scholastic.com/headsup.
- For immediate help with a crisis, call 1-800-273-TALK.
- To locate a treatment center, call 1-800-662-HELP or visit <http://findtreatment.samhsa.gov>.