More than 4 million people in the United States are currently taking prescription stimulants.\(^1\) Stimulant medications (amphetamines and methylphenidate products) are often prescribed for individuals diagnosed with attention-deficit/hyperactivity disorder (ADHD)—a developmental disorder that originates in the nervous system and can cause difficulty with self-control, behavior, mental processes, and learning. Stimulant medications are also commonly prescribed for narcolepsy, a sleep disorder that triggers sudden, uncontrollable urges to sleep, often causing an individual to fall asleep at inappropriate times. When used in appropriately diagnosed patients and according to a physician’s direction, stimulant medications are safe and effective treatments for these conditions; however, if misused or abused, these medications can be addictive and even result in death.

What Are Stimulant Medications?
Stimulants are substances that act on the central nervous system to produce alertness and wakefulness. It is thought that by stimulating nerve cells in the brain, these drugs produce better communication with other parts of the brain, decreasing symptoms of ADHD and narcolepsy. In controlled doses, stimulants increase the production of a neurotransmitter—a chemical that transmits nerve impulses—called dopamine, which assists the part of the brain that allows people to focus, be more attentive, and control their impulses. When used properly, stimulants are very effective in improving a person’s mental processes and helping them to better manage their own behavior.

Stimulants come in many varieties and strengths, and may affect people in different ways. In addition to amphetamines and methylphenidate, other well-known stimulants include caffeine and nicotine.

What Are the Risks Associated with Misusing Stimulants?
Unlike caffeine, which is not a controlled substance, prescription stimulants such as amphetamines and methylphenidate are legally classified as controlled substances with a potential for misuse, abuse, and addiction. Stimulants are regulated by the US Drug Enforcement Administration and should be used only under the care of a physician following careful evaluation and diagnosis of an underlying condition appropriate for stimulant therapy.

Individuals sometimes misuse stimulants—which means using the medication without proper diagnosis, dosing instructions, or physician guidance—in order to boost endurance and productivity or to suppress appetite. This type of misuse creates the potential for many health risks (Table).
Stimulants can also be abused, which means using stimulants to get “high,” which is associated with very serious medical risks. Crushing stimulant medication and snorting the powder contained inside can cause nasal damage and nosebleeds. Dissolving a stimulant in water and injecting the resulting solution can cause pulmonary embolism—a blockage of an artery carrying blood to the lungs, which can be fatal—as well as retinal damage, which causes blurred vision or vision loss. Overdosing on stimulant medication—whether in pill, powder, or liquid form—can result in serious physical damage, and could potentially be fatal. The risk of overdosing is increased if stimulants are abused with other drugs, including alcohol.

What Are the Signs of Stimulant Abuse/Addiction?
Stimulant abuse may lead to increased tolerance to the medication, which means it will take increasingly larger doses to have the same effect previously achieved with smaller doses. Use of higher doses can lead to physical and psychological addiction, as well as physical effects such as liver damage and brain damage. In some cases, a person who has been abusing stimulants may develop a type of psychosis that causes them to feel aggressive, paranoid, or to experience hallucinations. If psychosis occurs, it can take months or even years for the brain to return to normal functioning after use of the drug has stopped. Although rare, stimulant abuse may also result in physical collapse and even sudden death.

A variety of signs and symptoms are common to individuals who are abusing stimulants, including anxiety; excited speech, which may even resemble a panic attack; worsening academic performance; severe anorexia; infections from intravenous drug use (such as hepatitis or HIV); memory loss; paranoia; violent behavior; confusion; extreme insensitivity for a prescription refill; tremors; and convulsions.

How Do You Know If Someone Is Substance Dependent?
When individuals experience 3 of the following circumstances, they are classified as being substance dependent, meaning that they have a drug addiction.

- They develop tolerance to drug dosages
- Withdrawal occurs when the drug is not used
- They may consume more of the drug than they intended
- They experience a consistent longing to control the abuse, or they have failed at attempts to control their abuse
- They persistently abuse a drug despite knowledge of its negative consequences
- They spend excessive time finding the drug or recovering from its use
- They experience a reduction in positive living (eg, less time in class or working)

What Should You Do If You Suspect Someone Is Misusing Stimulants?
Remember that prescription medications should only be used with the advice and direction of a clinician—any other use is considered misuse. If you suspect that someone you know is misusing stimulants, contact a healthcare professional to review the situation. If you feel that you are misusing stimulant medication, contact a healthcare professional immediately to discuss appropriate options to discontinue the misuse, or to resume responsible use of stimulants under your clinician’s care.

What Can You Do If You Suspect You Have ADHD?
Visit a medical professional to be properly evaluated and assessed for ADHD. Most schools, colleges, and universities have clinic facilities. Otherwise, a campus health administrator can refer you to an appropriate clinician. Do not self-medicate.

3 Steps to Successful, Responsible Use of Stimulant Medications
1. Get a careful evaluation from a trusted clinician before trying stimulants or other medications.
2. If you are prescribed a stimulant, you should use only the dose that is prescribed.
3. Seek the help of a healthcare practitioner if you are misusing/abusing stimulants.

References