

UNDERSTAND THE RISKS OF STIMULANT MISUSE FOR YOUR PATIENTS, YOUR PEERS, AND YOURSELF

Beware of Stimulant Misuse for Clinical Reasons

In the last 20 years, an increasing number of children, adolescents, and adults have been diagnosed with Attention Deficit Hyperactivity Disorder (ADHD). Multiple studies have shown prescription stimulants (both short- and longer-acting amphetamines and methylphenidate) to be the most efficacious treatment of ADHD.

A parallel rise in illicit use of these medications in all age groups has become a major public health concern. A recent systematic review of the literature from 1995 to 2006 found that the rates of non-prescribed stimulant use ranged from 5 to 9 percent in grade school and high school-age children and from 5 to 35 percent in college-age individuals. In addition, students with stimulant prescriptions who are asked/pressured to give, sell, or trade their medications have lifetime rates of diversion ranging from 16 to 29 percent. (1)

Most recently, the Centers for Disease Control and Prevention's 2009 National Youth Risk Behavior Survey revealed that 20.2 percent of high school students had taken prescription drugs (including Oxycontin, Percocet, Vicodin, Adderall, Ritalin, or Xanax) without a doctor's prescription one or more times in their life. (2)

Studies have shown that adults with ADHD who are prescribed stimulants as children have no increase in substance use or abuse patterns. (3, 4) However, adolescents and adults who start stimulant treatment for ADHD are found to engage in more polydrug abuse and nonmedical use of stimulants than those without ADHD. (5, 6) Furthermore, adolescents with undiagnosed ADHD have a rate of substance abuse patterns that is three to four times greater than those

treated with stimulants, suggesting the possibility that they are self-medicating their ADHD symptoms. (7)

In the face of these trends, clinicians are increasingly being asked to strike a balance between accurately diagnosing ADHD and monitoring their patients' potential misuse of prescribed stimulants, particularly if the patient started on stimulants as an adolescent or adult. Standardized assessment screening tools as well as thorough neuropsychiatric evaluation of patients are recommended for accurate diagnosis of ADHD at all ages. Another recommended practice is to educate patients who are prescribed stimulants for ADHD about the risks of abuse and dependence.

Clinicians should carefully monitor patient response to prescribed stimulants with rating scales. They should also assess any requests for increased dosages or prescriptions to rule out personal misuse or diversion to others.

For patients at risk of substance abuse and dependence, other ADHD-treatment strategies are recommended, such as nonstimulant medications (e.g., bupropion or atomoxetine) or non-medication strategies, such as cognitive-behavioral therapy, coaching in organization and time management, , biofeedback, relaxation techniques, and psychotherapy

In Massachusetts, the Department of Public Health Bureau of Substance Abuse Services published a "Clinician Guide to Prevent Misuse of Opioid Analgesics and Stimulant Medications." This guide was adopted by the Massachusetts Board of Registration in Medicine in 2004(8) and is a useful resource for assessment tools, rating scales, and other web-based sources of information .

Due to the considerable risk for abuse and dependence associated with the short-term euphoric effects of stimulants (usually experienced when taken at higher-than-therapeutic doses, particularly in the immediate- rather than

extended-release form), stimulants have been classified by the Drug Enforcement Administration as Class II controlled substances. As such, prescriptions are limited to a 30-day supply, and clinicians are required to continuously assess any patient with a stimulant prescription.

Serious legal penalties can result when patients divert their prescribed medication to others or non-patients use others' prescription stimulants. Stimulants carry a black box warning regarding their potential for abuse and dependence as well as for the risk of sudden death and adverse cardiovascular events associated with their misuse.

Multiple papers recommend that college-based health services educate their students with ADHD about the risks of personal misuse and/or diversion of prescribed stimulants. Particularly at exam times, health services clinicians should be "on the alert" for stimulant misuse in students who present with unexplained anxiety, irritability, excitability, confusion, depression, violence, as well as physical signs of tachycardia and/or increased blood pressure. (9)

A recent study explored the difference in attitudes/beliefs between college-age illicit users of stimulants (both ADHD prescription holders and non-prescription holders) and non-illicit users. (10) Illicit users had less concern with the ethics of misuse, greater perception of misuse as socially acceptable, and less perceived control over their behavior without the stimulant aid than non-illicit users. In addition, non-prescription holders among the illicit users had less concern about the health risks of illicit use, felt more dependent on stimulant medications, and were more likely to diagnose themselves as having ADHD.

In this same study, the two most predominant motives for illicit use (defined as excessive use as a prescription holder or any use without a prescription) were to improve concentration (28.8 percent) and to increase alertness or stay awake (23.4 percent). Frequency of other motives was much lower: to become high (6.3

percent); to control appetite (4.2 percent); to lose weight (3.6 percent); to enhance exercise (2.6 percent); to counteract effects of other drugs (2.1percent), and to experiment or enhance short-term memory (1.2 percent. (10)

While college students who misuse stimulants may believe that the drugs increase their academic performance, at least one study has shown that methylphenidate, in particular, has its greatest benefit at lowest doses and that increased doses actually decrease academic performance. (11) A separate study showed a negative relationship between illicit stimulant use and academic performance (12).

Beware of Stimulant Misuse for Personal Reasons

Rates of drug and alcohol abuse and dependence for health care professionals (10 to 15 percent during a career) are similar to those of the general population, however rates of use (excluding abuse and dependence) of drugs, in particular of opiates and benzodiazepines, are five times higher than the general public (13). For many physicians, they began using alcohol and drugs before attending medical school (14). Although physicians who get appropriate treatment for substance misuse disorders often have a higher rate of recovery (in the range of 70-90%) than the general population, those physicians who used drugs or alcohol before or during medical school may have higher rates of relapse due to early and longstanding underlying disorders (15).

In addition to long, stressful work hours and easy access to medications among physicians and medical students, the following individual factors may contribute to drug and alcohol abuse and dependence:

- Family history of substance abuse
- Emotional problems
- Sensation-seeking behavior
- Idealistic beliefs

--Perfectionist behavior and high academic rank (16)

Misuse of prescription stimulants by medical students, residents, and physicians has not been studied specifically, but given increasing trends of stimulant misuse in high school and college and the documented risks of misuse, abuse, and dependence during medical training, doctors and trainees should consider the following points:

While you may have participated yourself in sharing non-prescribed stimulants to “enhance performance” or combat fatigue as an undergraduate, you may underestimate the vulnerability for abuse and dependence that comes with repeated misuse of stimulants for the more frequent and intense stress of medical school and residency.

Physicians and medical trainees have a professional and ethical responsibility to develop their own healthy patterns of self-care. If you are medicating yourself to stay awake or enhance performance, you may no longer notice or attend to your actual fatigue. This might lead to harmful inattention and errors in judgment not only during clinical hours, but also in your personal life -- while driving or taking care of children. Those who no longer rely on their own body cues for signs of fatigue and have not developed effective strategies for replenishing and re-energizing themselves are at increased risk of excessive use, abuse, and dependence.

For obvious patient-centered reasons, medical trainees are held to a higher professional standard of behavior and self-care than college students. What may have been normative in college may no longer be normative in medical school or residency. Misuse of stimulants may be reported by a peer and/or lead to behavioral or psychiatric problems. School administrators or residency directors could then become involved, with potentially serious consequences, such as failure to graduate, losing the right to licensure, and/or legal action.

Discard the notion that stimulants will actually enhance your performance. Misuse of stimulants can result in behavioral and/or psychiatric difficulties including irritability, depression, mania, and paranoid thinking/psychosis.

Medical trainees caught in such a downward spiral may hesitate to approach their own medical school or residency program for help due to fear of disciplinary action or expulsion. In Massachusetts, Physicians Health Service (PHS) is a productive place to start addressing such problems. PHS helps physicians, medical students, and residents confidentially address substance abuse and dependence, as well as behavioral and performance difficulties, by arranging for further evaluation and treatment. PHS can help facilitate continued participation in medical school or residency through treatment and monitoring contracts between the client, PHS, the client's treatment team, and his or her school/training program. PHS has assisted many medical students and residents in achieving successful rehabilitation.

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