

ADHD and Substance Use: The Importance of Integrated Treatment

by **Adelaide Robb, M.D.**, Associate Professor of Psychiatry and Pediatrics, Children's National Medical Center

Attention Deficit/Hyperactivity Disorder (ADHD) affects 6 to 8% of children and adolescents and 4 to 5% of adults throughout the world.¹⁻

³ Teens with ADHD struggle with paying attention, sitting still, and acting impulsively. Younger children with ADHD often have other difficulties including learning disabilities (15 to 20%), oppositional defiant disorder (40%), or conduct disorder (14 to 20%). These comorbid disorders make treating ADHD more difficult and can make school more challenging for students both academically and socially.

One of the more common co-morbid disorders is substance use disorder (SUD), which occurs in 13 to 21% of teenagers and young adults living with ADHD. This article will discuss the presentation and prevention of SUD, the diversion of ADHD medications, and treatment of ADHD and SUD in teenagers.

Epidemiology and Prevention

SUD and ADHD co-occur frequently. ADHD symptoms often precede the development of SUD.^{4,7} In a series of large studies of boys and girls with ADHD, ADHD specialists at Massachusetts General Hospital found

Rates of Alcohol Use and Substance Abuse

	Rates of Alcohol Use	Rates of Substance Use
Girls with ADHD	4%	13%
Girls without ADHD	0%	3%
Boys with ADHD	26%	21%
Boys Without ADHD	16%	11%

that youth with ADHD had the onset of SUD at younger ages and at higher rates than their same gender peers without ADHD.^{8,9} Above is a table depicting the results of this study.

Many recent studies have examined whether ADHD treatment can change the rate of SUD in adolescents and young adults. Parents have worried that the use of stimulants might lead to increased rates of substance abuse. Multiple recent studies have examined this theory. These studies have shown that teenagers with ADHD plus an externalizing disorder (either conduct disorder or oppositional defiant disorder) are more likely to develop SUD than teens with just ADHD.^{10,11}

Another study by Massachusetts General Hospital compared rates of SUD in young adults without ADHD, young adults with untreated ADHD, and young

adults with ADHD treated with stimulants.¹² In the young adults with untreated ADHD, rates of SUD were 75% while treatment with stimulants reduced the rate of SUD to 25%, close to the 18% seen in their non-ADHD peers in this age group.

Abuse and Diversion of Stimulants

Another area of concern related to ADHD treatment and the use of stimulants exists when teens use their ADHD medication to get high (abuse) and when they divert their medication by selling or trading it with friends and classmates (diversion). Stimulants are Schedule II medications, meaning they have the potential to cause dependence. In a review of twenty-one (21) studies of over 113,000 youth, Dr. Timothy Wilens, Associate Professor of Psychiatry at Harvard Medical School, examined

¹Faraone SV, Sergeant J, Gillberg C, Biederman J. The worldwide prevalence of ADHD: Is it an American condition? *World Psychiatry* 2003 Jun;2(2):104-113.

²Kessler RC, Adler L, Barkley R, et al. The prevalence and correlates of adult ADHD in the United States: Results from the National Comorbidity Survey Replication. *The American Journal of Psychiatry* 2006 Apr;163(4):716-723.

³Polanczyk G, de Lima MS, Horta BL, Biederman J, Rohde LA. The worldwide prevalence of ADHD: A systematic review and metaregression analysis. *The American Journal of Psychiatry* 2007 Jun;164(6):942-948.

⁴Faraone SV, Wilens T. Does stimulant treatment lead to substance use disorders? *The Journal of Clinical Psychiatry* 2003;64 Suppl 11:9-13.

⁵Fischer M, Barkley RA. Childhood stimulant treatment and risk for later substance abuse. *The Journal of Clinical Psychiatry* 2003;64 Suppl 11:19-23.

⁶Barkley RA, Fischer M, Smallish L, Fletcher K. Does the treatment of attention-deficit/hyperactivity disorder with stimulants contribute to drug use/abuse? A 13-year prospective study. *Pediatrics* 2003 Jan;111(1):97-109.

⁷Wilens TE, Faraone SV, Biederman J, Gunawardene S. Does stimulant therapy of atten-

tion-deficit/hyperactivity disorder beget later substance abuse? A meta-analytic review of the literature. *Pediatrics* 2003 Jan;111(1):179-185.

⁸Biederman J, Monuteaux MC, Mick E, et al. Psychopathology in females with attention-deficit/hyperactivity disorder: a controlled, five-year prospective study. *Biological Psychiatry* 2006 Nov 15;60(10):1098-1105.

⁹Biederman J, Monuteaux MC, Mick E, et al. Young adult outcome of attention deficit hyperactivity disorder: a controlled 10-year follow-up study. *Psychological Medicine* 2006 Feb;36(2):167-179.

¹⁰August GJ, Winters KC, Realmuto GM, Fahnhorst T, Botzet A, Lee S. Prospective study of adolescent drug use among community samples of ADHD and non-ADHD participants. *Journal of the American Academy of Child and Adolescent Psychiatry* 2006 Jul;45(7):824-832.

¹¹Wilens TE, Gignac M, Swezey A, Monuteaux MC, Biederman J. Characteristics of adolescents and young adults with ADHD who divert or misuse their prescribed medications. *Journal of the American Academy of Child and Adolescent Psychiatry* 2006 Apr;45(4):408-414.

ADHD Facts & Stats

Children with ADHD

- 3 to 5% of children have ADHD — approximately 2 million children in the United States. This means that in a classroom of 25 to 30 children, it is likely that at least one will have ADHD.
- About 20 to 30% of children with ADHD also have a specific learning disability.
- Effective treatments for ADHD are available and include behavioral therapy, social skills training, parent skills training, and medications.
- Research shows that long-term combination treatments (medication management and behavioral treatment) and medication management alone were superior to intensive behavioral treatment and routine community treatment for treating children living with ADHD.
- 1/3 to 1/2 of all children with ADHD, mostly boys, develop oppositional defiant disorder (ODD). About 20 to 40% of children with ADHD may eventually develop conduct disorder (CD).
- Children with ADHD are at higher risk for behavioral problems, including delinquent behaviors and substance abuse.

Transition-Age Youth with ADHD

- ADHD is not just a childhood

disorder, it can continue through the teen years and into adulthood.

- Left untreated, ADHD can have long-term adverse effects into adolescence and adulthood.
- 13 to 21% of teenagers and young adults living with ADHD also have a substance use disorder.
- Youth with ADHD, in their first two to five years of driving, have nearly four times as many automobile accidents, are more likely to cause bodily injury in accidents, and have three times as many citations for speeding as young drivers without ADHD.

Adults with ADHD

- 30 to 70% of children with ADHD continue to exhibit symptoms in their adult years.
- 80% of children who require medication for ADHD still require medication treatment as teenagers. Over 50% require medication treatment as adults.
- Adults with untreated ADHD may repeatedly lose jobs because of their untreated illness. They may have a history of school failure and problems at work. Often they have been involved in frequent automobile accidents.
- At any age, treatment can help!

ADHD Facts & Stats gathered from the National Institute of Mental Health's website at www.nimh.nih.gov.

rates of abuse, misuse, and diversion of stimulant medications and the risk factors that predisposed youth with ADHD to these acts.¹³

Rates of nonprescribed stimulant use in grade school and high school students are 5 to 9%. Studies show that 16 to 29% of teenagers and young adults with ADHD are approached to give, sell, or trade their ADHD medications. Youth with conduct disorder, or SUD in com-

bination with ADHD, are the most likely to divert or misuse their stimulant medications. Hispanic and Caucasian youth have rates of stimulant misuse three times the rate seen in African American youth and two times the rate seen in Asian American youth.

Medications that are rapidly delivered to the body and last several hours (immediate release) were more likely to be misused and diverted than medica-

tions that are delivered to the body over a longer time period (extended release) or non-stimulant treatments.

Treating Teens with ADHD and Substance Use Disorder

In treating teens with co-occurring ADHD and SUD, the treatment of one disorder cannot take precedence over the other. Doctors treating teens with ADHD need to inquire about substance use and provide treatment for both disorders whenever they co-exist. Several studies have examined the importance of treating teens and young adults who have both ADHD and SUD. These studies recognize the importance of identifying the presence of both disorders. It is also important when treating teens with ADHD and SUD to choose medications to treat the ADHD that are less easy to be abused such as non-stimulants (atomoxetine, bupropion, or modafinil), pro-drugs — which are administered in an inactive or less active form (lisdexamfetamine), or long acting and transdermal forms of medication — which are delivered by an adhesive patch in specific doses through the skin (methylphenidate or amphetamine).

Most clinicians who specialize in SUD treatment recommend stabilizing the SUD first and then slowly adding in a non-stimulant medication treatment for ADHD.¹⁴ ADHD specialists tend to recommend treating both disorders simultaneously with behavioral treatment for the substance use and medication for the ADHD. The simultaneous treatment for both disorders is sometimes called dual diagnosis treatment.

Recently, the National Institute of Mental Health (NIMH), the National Institute of Drug Abuse (NIDA), and the pharmaceutical industry have recognized the importance of treating these frequently comorbid disorders. All three groups have increased the number of studies on treating teenagers and young adults with dual diagnoses. Several research trials for teens and young adults with ADHD and SUD

¹²Biederman J, Wilens T, Mick E, Spencer T, Faraone SV. Pharmacotherapy of attention-deficit/hyperactivity disorder reduces risk for substance use disorder. *Pediatrics* 1999 Aug;104(2):e20.

¹³Wilens TE, Adler LA, Adams J, et al. Misuse and Diversion of Stimulants Prescribed for ADHD: A Systematic Review of the Literature. *Journal of the American Academy of Child*

and Adolescent Psychiatry 2008 Jan;47(1):21-31.

¹⁴Riggs PD. Clinical approach to treatment of ADHD in adolescents with substance use disorders and conduct disorder. *Journal of the American Academy of Child and Adolescent Psychiatry* 1998 Mar;37(3):331-332.

are listed on the National Institutes of Health's clinical trials website at www.clinicaltrials.gov. These trials provide another resource to help parents and teenagers struggling with the dual diagnosis of ADHD and SUD better understand effective treatments.

Conclusion

Teens with ADHD are at higher risk of developing SUD than teens without the disorder. They may consider misusing their medications or be approached by classmates to sell or trade their prescriptions. Parents and physicians should be aware of risk factors, such as conduct disorder, that put teenagers with ADHD at higher risk for the development of SUD. While teens with ADHD and conduct disorder are at the highest risk of developing SUD, effective treatment of ADHD can greatly reduce that risk. Treatment for dual diagnoses is available and can make a major difference in the lives of teens with both disorders. 

ADHD Medication Guide for Parents



The American Academy of Child and Adolescent Psychiatry (AACAP) and the American Psychiatric Association (APA) released a new parent's guide to Attention Deficit/Hyperactivity Disorder (ADHD) medications.

The guide, *ADHD Parents Medication Guide*, is designed to help families and physicians make informed decisions about obtaining and administering the most appropriate care for a child with ADHD. The guide provides information to families on ADHD symptoms, the side effects of medication, and co-occurring disorders.

The guide can be downloaded at www.parentsmedguide.org.

Chaos and the True Value of Family

by Evelyn Polk Green, President-Elect, Attention Deficit Disorder Association

Like most women in 2008, every day I wear many hats. These include early childhood educator and administrator, child and family advocate, president-elect of the Attention Deficit Disorder Association (ADDA), active member of several mental health advocacy groups, and more. But, everything I have done during the past 22 years has been deeply influenced by the fact that I am a mother, and more importantly the mother of two wonderful sons, both diagnosed with Attention Deficit/ Hyperactivity Disorder (ADHD).

The Road to a Diagnosis

My oldest son was diagnosed with ADHD at age seven. But before the official diagnosis, life with Perry was...well...let us just say — different. Like all new parents, from the moment we brought him home we knew he was special...but we had no idea just how special he really was!

Unlike many babies with ADHD, he slept through the night early in his life. He was alert, happy, and seemed to be aware of everything going on around him. He rarely cried. But as he grew older, things began to change.

Because of my background in early childhood education, I quickly realized that something was not quite right. My son did not interact with others like other children his age. We were politely told that our two year old just did not “fit in” with the other kids at the day care center, so perhaps we should look for a “more suitable” placement. He was unbelievably stubborn, his temper tantrums were long and uncontrollable, and yet at times, he could be the sweetest, most loving child in the world. We struggled daily with the notion that we were bad parents, especially when well-meaning friends and family, not to mention total strangers, accused us of being bad par-

ents.

Eventually we decided that we needed help. We sought advice from everyone imaginable including family, our pediatrician, social workers, educators, and psychologists. During our long search for help, we heard everything from “he is just stubborn,” to “perhaps you need to change your parenting style.” Along the way, we heard a variety of diagnoses including hyperlexia and pervasive developmental delay. Although he exhibited some of the characteristics of these diagnoses, nothing we heard seemed quite right. Finally, one of his teachers suggested that we have him evaluated for ADHD. It took more than five years of struggle, doubt, and worry before our oldest son was diagnosed with ADHD at the age of seven.

There are no words to describe the relief that we felt to have a name for our son's behavior, to finally have a plan to help him and, most of all, to know that it was not our fault.

But the diagnosis was only the start of our journey — the real fun began once we were truly living with ADHD and making the necessary adjustments to manage it within our family. Perry is 22 years old now and I am incredibly proud of him, as I am of his brother. He has turned into a caring, compassionate, and thoughtful young man with strong convictions, especially on social justice issues. That is not to say that I did not experience frustration as he grew up nor that I still do not occasionally experience frustration or continue to worry about him. Yet, I can now look back with pride and know that we made it through some pretty trying times together.

Certainly we would not have made it to this point without some key factors. We learned the importance of acceptance, finding support, the ability to forgive and to accept forgiveness, and perhaps most importantly — the value of