When AD/HD and Substance Abuse Collide

by Timothy E. Wilens, M.D.

WITHIN THE PAST FEW YEARS, there has been increasing interest in the overlap of attention-deficit/hyperactivity disorder (AD/HD) and addictive disorders. The combination of AD/HD and substance abuse (including drug and alcohol abuse and dependence) has been frequently reported and is known to be associated with substantial impairment. While AD/HD emerges in early childhood and affects 3–5 percent of school-aged children and approximately 2–4 percent of adults, the substance use disorders tend to begin in adolescence or early adulthood and affect 25 percent of adults. Both substance abuse and AD/HD are related by their relationship to the neurotransmitter dopamine.

Editor's Note:
The Spanish translation of this article begins on page 32.

Both substance abuse and AD/HD are related by their relationship to the neurotransmitter dopamine. Not surprisingly, studies in adolescents and adults with an addiction indicate an over-representation of AD/HD.

Cigarette smoking rates are almost double in adolescents with AD/HD. Studies have shown that approximately one-third of the children growing up with AD/HD will have a problem with substance abuse. Children with AD/HD who have ongoing problems with their AD/HD (including prominent attention problems) as well as demoralization were shown in these studies to be at higher risk for substance abuse. The co-occurrence of conduct disorder (delinquency) and bipolar disorder greatly increase the chance that a child with AD/HD will have problems with teenage-onset substance use problems.

A number of accumulating studies have shown elevated rates of substance abuse in adults with AD/HD as compared to the general population. More specifically, in a group of adults with AD/HD approximately one-third have had alcohol abuse or dependence histories, while approximately one-fifth have had drug abuse or dependence histories. In addition, a recent study at Massachusetts General Hospital indicates that most of the adults with AD/HD and substance abuse issues (generally alcohol or marijuana) also had problems with mood, anxiety or an antisocial condition.

Not surprisingly, studies in adolescents and adults with an addiction indicate an over-representation of AD/HD. Including both alcohol and drug addiction, approximately 40 percent of adolescents and 20 percent of adults with substance abuse have AD/HD. For example, Howard Schubiner, M.D., and colleagues found that 24 percent of 201 inpatients in a substance abuse treatment facility had AD/HD. The importance of careful diagnosis, however, has been demonstrated by Frances Rudnick Levin, M.D., and colleagues who found that while 10 percent of adults who were cocaine dependent met strict criteria for AD/HD (clear childhood and adult AD/HD), another 11 percent were found to have AD/HD symptoms only as adults that may have represented cocaine-induced brain dysfunction. Adults with addictions who have AD/HD typically have a more severe course of the addiction and difficulties in recovery.

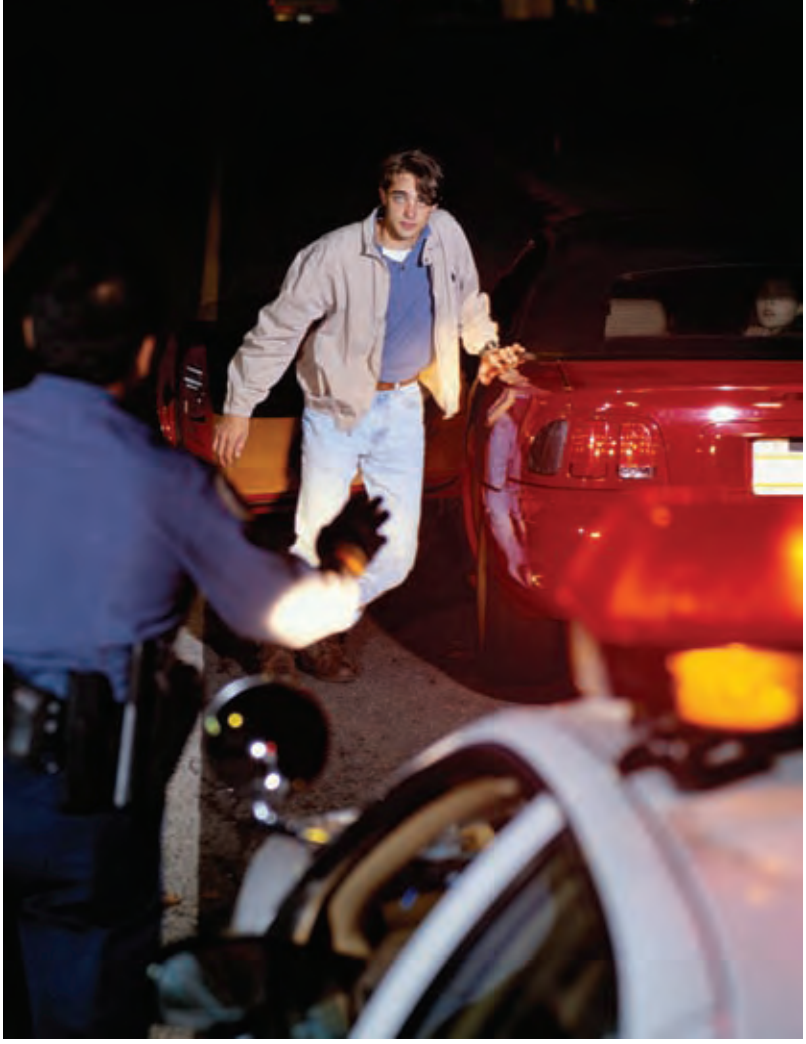
It appears that children with AD/HD, coupled with other conditions such as conduct disorder, are at risk for very early cigarette smoking and substance use disorder as adolescents, whereas individuals with AD/HD alone are at risk as young adults—age 18–21. Of interest, girls with AD/HD may start using and misusing substances at an earlier age than boys.

Both family/genetic and psychological issues are probably operational in causing substance abuse in individuals with AD/HD. Elevated rates of substance abuse have been found in the relatives of children and adults with AD/HD, and elevated rates of AD/HD have been reported in the relatives of individuals with substance abuse.

Adults or adolescents with AD/HD do not abuse a specific type of drug, for example cocaine. Instead, availability of drugs and alcohol appears to be the most important determining factor. Like adolescents and adults who do not have AD/HD and who abuse substances, individuals with AD/HD most frequently abuse marijuana. Marijuana is probably the most misused substance, in part because of its easy availability in the community. Yet, *why* individuals use substances may shed light on some self-medication behaviors. For example, my colleagues and I recently found that adolescents and young adults with AD/HD were more likely to initiate and continue substances to alter their mood and to help them get to sleep than did kids without AD/HD.

Treatment considerations

Evaluation and treatment of co-occurring AD/HD and substance abuse should be part of a plan in which consideration is given to all aspects of the individual's life (see sidebar, page 19). Any intervention in this group should follow a careful evaluation of the individual and his or her family including addiction, psychiatric, social, cognitive and, if applicable, educational evaluations. A thorough history of substance use



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should be obtained in all individuals with AD/HD including past and current usage. Careful attention should be paid to the other problems that may exist, including medical or neurological conditions whose symptoms may be similar to those of AD/HD. Although no specific guidelines exist for evaluating the individual who is an active substance abuser, in our experience, at least one month of abstinence is helpful in assessing current AD/HD symptoms. Careful psychiatric assessments by a professional knowledgeable in both addiction and AD/HD is suggested.

When treating individuals with AD/HD and active substance abuse, special attention should be given to other potential psychological and cognitive disorders. The presence of depression or anxiety that is not directly a result of the substance abuse needs to be further assessed. The overall evaluation should assist in the designing of a multimodal treatment plan tailored to the needs of the individual. Multimodal treatment includes parent and child education about diagnosis and treatment, behavior management techniques, medication and school programming and supports.

The treatment of individuals with active substance abuse and AD/HD needs to be addressed simultaneously with an initial emphasis on the substance abuse. It is noteworthy that AD/HD treatments should not be relied upon to correct the behavioral patterns of substance abuse. In fact, the bulk of research data indicates that AD/HD treatment does *not* treat substance use issues adequately in adolescents or adults with AD/HD who abuse substances. Additionally, these individuals often suffer from poor self-esteem, high risk-taking behaviors and difficulty sitting through 12-step programs and individual or group psychotherapy. Effective psychotherapy for individuals with AD/HD and substance abuse generally combines structured and goal-directed sessions, active therapist involvement and frequent reassessments. Substance abuse and AD/HD psychotherapies can be completed successfully in parallel with other addiction therapeutic methods (i.e., Narcotics Anonymous) and pharmacotherapy.

Pharmacotherapy serves an important role in reducing the core symptoms of AD/HD and other concurrent psychiatric disorders and, therefore, may indirectly assist in substance abuse treatment. The pharmacological treatments for AD/HD, such as stimulants and nonstimulants do *not* make substance use worse; yet, immediate-release stimulants may be misused or sold by substance abusers. Favorable reports of medication treatment for adolescents and adults with AD/HD and substance abuse disorder (SUD) have included the use of stimulants and bupropion. Atomoxetine, an agent without abuse potential, is very intriguing but remains untested in this group.

When using drug therapy, frequent monitoring should include careful evaluation of treatment compliance, substance use status (random toxicology screens) and coordination of care with caregivers. In adolescents and adults with AD/HD who have histories of substance abuse but are now clean or sober, there is no data indicating that nonstimulants or stimulants will put them at risk for relapse. In contrast, AD/HD treatment may assist in preventing relapses while improving the adolescent's or adult's likelihood for general life success.

Addressing the Myths and Concerns

Over the last decade, reports of illicit use of stimulant medications have emerged. A survey study completed in Wisconsin indicated that 16 percent of children had been approached to sell or give away their medication. Along the same lines, a more recent survey study completed in Nova Scotia in junior and senior high school

students indicated that 15 percent had given their medications to others while 7 percent had sold their medication to other students. Similarly, reports of diversion in college-aged youth are emerging. For example, we recently found that 11 percent of a sample of 21-year-olds with AD/HD were selling their medication. Those selling their medication also had substance abuse problems. Moreover, despite the availability of extended-release stimulants (e.g., Concerta, Adderall XR, Ritalin LA, Metadate CD), only immediate-release medications were diverted. The lessons to be learned: parents must supervise the storage of adolescents' medications, and college students should be advised to safely store their medications (not in medicine cabinets), and physicians should utilize extended-release stimulants in this age group.

Do the stimulant medications used to treat AD/HD actually lead to substance abuse? Although, concerns have been raised that early stimulant exposure may lead individuals to substance abuse in general and to specific substances, such as cocaine, clinical studies do not appear to support this belief. The results of a recent study indicate that the use of stimulant medication reduces the risk to start smoking cigarettes. Likewise, results from an analysis of seven worldwide studies found that stimulant pharmacotherapy did not increase the risk for later substance abuse. In fact, individuals with AD/HD being treated with stimulants had lower rates of SUD. It may be that the ultimate risk of substance abuse in treated individuals with AD/HD may approximate the risk in individuals without AD/HD (the general population).

Girls with AD/HD may start using and misusing substances at an earlier age than boys.

A thorough history of substance use should be obtained in all individuals with AD/HD including past and current usage.

In summary, there is a large body of literature supporting a relationship between AD/HD and substance abuse. Complex genetic, behavioral and self-medication influences contribute to the development and persistence of substance abuse in those with AD/HD. Treating AD/HD reduces the risk for cigarette smoking and substance abuse. Individuals with AD/HD and current substance abuse require comprehensive multimodal intervention incorporating parallel addiction and mental health treatment. ■

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ASSESSMENT PROTOCOL AD/HD and Psychoactive Substance Use Disorders

Psychiatric Evaluation	Clinical interview; Structured psychiatric interview; Educational/Cognitive screen
Addiction History	Interview; Questionnaires; Urine toxicology screen
Sources of Information	Individual, mate, parents and other caregivers
Psychosocial	Ask about current stressors and available supports
Family Concerns	Family history of emotional and behavioral problems, substance abuse or underachievement
Differential Diagnosis	Substance abuse symptoms (for example intoxication, withdrawal, sequela); Medical and Neurological concerns; Psychiatric problems (for example depression, anxiety)
Treatment Strategies	Review treatment expectations; Develop multimodal treatment plan
Specific Therapeutics	Psychotherapies (individual and group) helpful for addictions, problematic behavioral patterns, intrapsychic and interpersonal distress; Pharmacotherapy helpful for AD/HD and comorbid psychiatric disorders (for example depression)

Complex genetic, behavioral and self-medication influences contribute to the development and persistence of substance abuse in individuals with AD/HD.

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