

# Heavy Prenatal Alcohol Linked to Behavioral Ills

*In adolescents, skills for academic achievement and social interaction were found to be greatly impaired.*

BY BETSY BATES  
Los Angeles Bureau

SANTA BARBARA, CALIF. — The psychiatric and behavioral consequences of heavy prenatal alcohol exposure on children are abundantly clear by mid-childhood and adolescence, based on studies presented at the annual meeting of the Research Society on Alcoholism.

One study found that children exposed prenatally to alcohol were far more likely than their peers to meet the diagnostic criteria for attention-deficit hyperactivity disorder (ADHD), oppositional defiant disorder, conduct disorder, tic disorders, and mood disorders by the time they were 8-14 years old.

Another study assessed social problem-solving skills and executive functioning in adolescents who were heavily exposed to alcohol in utero. Profound impairments were found in both types of skills, which are integral to academic achievement and social interaction.

The studies were conducted by researchers from the Center for Behavioral

Teratology at San Diego State University and were presented in poster form.

Sarah N. Mattson, Ph.D., a senior author on the studies, said in an interview that "heavy alcohol exposure" was equivalent to about a case of beer or a fifth of hard liquor a day.

Susanna L. Fryer, a doctoral student at the center, explored childhood psychopathologies in 43 alcohol-exposed and 22 nonexposed children using structured interviews with primary caregivers.

"The difference within the ADHD category was, by far, the largest [group] effect observed," she concluded. By the numbers, 42 of 43 alcohol-exposed children met diagnostic criteria for ADHD, compared with 1 of 22 nonexposed children matched by age and socioeconomic status.

Nearly a third (13 of 43) of the alcohol-exposed children had oppositional defiant disorder, but just one nonexposed child

met the criteria for that diagnosis. Mood disorders were found in eight alcohol-exposed children, tic disorders in four, and conduct disorder in five. No child in the control group met the diagnostic criteria for any of those illnesses.

"Certain psychiatric disorders may be more prevalent than others in fetal alcohol spectrum disorders; disruptive psychopathologies were particularly com-

mon in our sample, while anxiety disorders were not," wrote Ms. Fryer.

Similarly, children exposed to alcohol prenatally were no more likely than controls to have simple phobias.

Christie L. McGee, who is also a doctoral student at the center, reported on social problem-solving deficits in 43 adolescents aged 13-18 years, 24 of whom were prenatally exposed to heavy alcohol use.

The adolescents completed the Revised Social Problem-Solving Inventory (SPSIR), which measures an individual's ability to resolve the problems of everyday living. Their parents or caregivers completed the

Behavior Rating Inventory of Executive Function (BRIEF), which includes subscales on such characteristics as a child's emotional control, working memory, and ability to plan and organize. Responses were anonymous.

Very large differences were found between the alcohol-exposed and nonexposed adolescents, with effect sizes ranging from 1.32 to 1.41 for problem solving skills and 1.96 to 4.61 for executive functioning. Those exposed to alcohol in utero "approached problems with a pessimistic orientation and indicated a low frustration tolerance," said Ms. McGee.

"[They] rated themselves as less effective at identifying problems, generating solutions, making decisions, and implementing and verifying the chosen solution ... [and were] more likely to endorse an avoidant, careless, or impulsive approach to solving their everyday problems," she continued.

Their most pronounced deficits in executive function were in the subscales of planning and organizing, monitoring, initiation, and working memory.

"Such difficulties may result in increased disruptive behaviors, poor self-esteem, reduced seeking of meaningful relationships, and isolation," Ms. McGee noted. ■

## Sleep-Disordered Breathing, ADHD Are Linked in Teens

BY BRUCE JANCIN  
Denver Bureau

DENVER — Adolescents with symptoms of sleep-disordered breathing had a 2.5-fold increased prevalence of inattention-type attention-deficit hyperactivity disorder in the first large, population-based study to examine this relationship, Eric O. Johnson, Ph.D., reported at the annual meeting of the Associated Professional Sleep Societies.

In contrast, sleep-disordered breathing (SDB) was not linked to hyperactivity-type ADHD in the survey of 1,014 Detroit-area youths aged 13-16 years and their parents, according to Dr. Johnson of the Henry Ford Health System, Detroit.

The observed association between SDB and inattention-type ADHD was independent of potential confounders including race, body mass index, the presence of conduct or oppositional defiant disorder, and asthma.

Participants were randomly selected from a large Detroit-area HMO. Computer-assisted structured interviews conducted separately with the teenager and one parent showed good concordance with regard to the presence of SDB.

Roughly 6% of the adolescents experienced the classic symptoms of loud snoring, periods of stopped breathing, and/or choking or gasping sounds during sleep at least once a week. The prevalence of SDB symptoms was

twice as high among African American teenagers as among whites.

By the adolescents' own reports, 4.5% met DSM-IV criteria for lifetime diagnosis of ADHD. By their parents' accounts, the rate was 7.8%. Most cases were of the inattention type. Through use of the statistical tool known as generalized estimating equations, it was possible to account for the differing parental and adolescent estimates and essentially split the difference.

Although this was the first large, population-based study to examine SDB and ADHD in a teenage population, several small, clinic-based studies have suggested that SDB in young children is associated with both hyperactive- and inattention-type ADHD. Obstructive sleep apnea in adults is typically associated with inattentive types of behavior rather than hyperactivity.

The new Detroit survey suggests that by the time children with SDB reach the age of 13-16, the dominant manifestation has shifted from hyperactive-to inattentive-type behaviors for many individuals.

But it must be emphasized that in a cross-sectional study it's impossible to assign causality; that is, it's unclear from these data whether SDB causes inattention or whether inattentive-type ADHD somehow predisposes individuals to SDB, Dr. Johnson noted.

The study was funded by the National Institutes of Health. ■

## Taking Heart History Is Good Idea When Prescribing Stimulants

BY HEIDI SPLETE  
Senior Writer

ORLANDO — When prescribing stimulants for children, play it safe and screen for heart conditions, said Howard Schubiner, M.D., at a meeting sponsored by the American Academy of Pediatrics.

Although population-based studies fail to show a significant increased risk for sudden cardiac death associated with stimulant use, concerns remain, and physicians should quickly evaluate any cardiac symptoms that arise while children are taking stimulant medications, said Dr. Schubiner of Providence Hospital in Southfield, Mich.

The controlled-release amphetamine Adderall XR was removed from Canadian markets earlier this year because of concerns raised by sudden cardiac death in 12 children and 8 adults in the United States who were taking the medication. As of press time, the U.S. Food and Drug Administration had not taken any action to remove the product from U.S. markets, although the product now carries a black box warning about the increased risk for cardiac events. The FDA's decision stems from an analysis of data suggesting that the risk of sudden death does not differ significantly between children treated with stimulants and untreated children.

The 12 cases of death linked to Adderall occurred between 1999 and 2003, and the children (all males, mean age 12 years) had been taking daily doses of 10 mg-50 mg for durations of 1 day to 8 years.

Overall, the rate of sudden cardiac death in children in the United States is approxi-

mately 600 per year, excluding sudden infant death syndrome, Dr. Schubiner noted. Sudden, nontraumatic death accounts for 2%-20% of all deaths among children aged 1-20 years. Boys are three times more likely to die than girls. He cited a 1996 study in which 40 of 50 (80%) sudden deaths in children were due to underlying cardiac abnormalities (Am. J. Cardiol. 1996;77:992-5).

The most common cause of sudden cardiac death in children is hypertrophic cardiomyopathy, an autosomal dominant disorder seen in approximately 1 of every 500 people. Left ventricular hypertrophy occurs in approximately 75%-95% of these patients, but most do not have a discernible heart murmur.

Other cardiac problems that could increase the risk for sudden death in the presence of a stimulant include coronary artery syndrome, arrhythmogenic right ventricle dysplasia, long QT syndrome, and Brugada syndrome, the odds of which are several thousand to one, Dr. Schubiner said.

Adderall is most often used to treat attention-deficit hyperactivity disorder (ADHD), and is still warranted for use in children and adolescents with ADHD, as are other stimulants, Dr. Schubiner noted.

However, it is important and prudent to inquire into a personal history of any chest discomfort, shortness of breath (particularly with exercise), syncopal episodes, palpitations, dizziness, or fatigue.

It is also critical to ask about any family history of sudden cardiac deaths, myocardial infarctions prior to the age of 50 in men and 60 in women, cardiomyopathy, or congenital heart disorders. ■