



# OJJDP FACT SHEET

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## A Treatment Study of Children With Attention Deficit Hyperactivity Disorder

by Karen R. Stern

The National Institute of Mental Health (NIMH) is sponsoring the Multimodal Treatment Study of Children With Attention Deficit Hyperactivity Disorder (ADHD) to assess the effectiveness of different treatment protocols for children with ADHD. The U.S. Department of Education (ED) and the Office of Juvenile Justice and Delinquency Prevention (OJJDP) are also supporting this research because the results will have important implications for improving educational outcomes and reducing delinquent behavior in children who have this disorder.

This is the first major NIMH collaborative clinical trial to focus on a childhood mental disorder and the largest clinical trial ever conducted by NIMH. Nearly 600 children ages 7–9 years have been randomly assigned to 1 of 4 treatment groups: (1) medication management only, (2) behavioral treatment only, (3) a combination of medication and behavioral treatment, and (4) routine community care (the control group). The primary study sites include Columbia University in New York City; Duke University Medical Center in Durham, NC; Western Psychiatric Institute in Pittsburgh, PA; Long Island Jewish Medical Center in New Hyde Park, NY; the University of California at Berkeley; and the University of California at Irvine. Additional subcontractor sites include Montreal Children's Hospital in Quebec, Canada; Mount Sinai School of Medicine in New York City; and the University of California at San Francisco.

### Diagnosing ADHD

ADHD is the most commonly diagnosed childhood disorder, affecting an estimated 3 to 5 percent of school-age children. It occurs more often in boys than girls, in some studies by a 5:1 ratio. Research suggests that the condition may have a genetic component because ADHD is diagnosed more frequently in children who have close biological relatives with ADHD than in the general population.

The core symptoms of ADHD include inattention, hyperactivity, and impulsivity. Children who are inattentive and easily distracted have difficulty focusing on a task and may become bored after

only a few minutes. They often initiate a number of tasks but fail to complete them. Hyperactive children seem to be constantly in motion. They have difficulty sitting still, may wander around the room, squirm in their seats, or repeatedly tap a pencil. Impulsive children tend to act without thinking and often seem unable to control their immediate reactions to people, events, or even their own thoughts and feelings. As a result, they may speak without thinking or dash into the street without looking for traffic.

Most children (and adults) experience transient episodes of these symptoms, perhaps due to stress or in response to certain medications. Younger children tend to be more active and have shorter attention spans than older ones. These symptoms indicate ADHD only if they occur over an extended period of time, typically for at least 6 months; begin before age 7; appear in different settings; and occur at a level that is both performance impairing and developmentally inappropriate. A thorough and comprehensive evaluation for ADHD should include input from both parents and teachers.

### ADHD and Juvenile Delinquency

Children with ADHD may appear functionally impaired in many areas and may engage in a broad array of problem behaviors that frustrate and disrupt family, school, and peer relationships. Their inability to sit still and pay attention in class may lead to school failure, truancy, and dropping out. For many individuals, the effects of untreated ADHD continue into adolescence and adulthood. As they grow older, children with untreated ADHD—often in combination with oppositional-defiant and conduct disorders—may abuse drugs or alcohol, engage in antisocial behavior, and suffer physical injury at higher rates than the general population. Later impairment can include vocational and social problems, low self-esteem, and a higher incidence of automobile accidents. Boys with ADHD are at increased risk for engaging in delinquent and antisocial behavior. Researchers know less about the long-term consequences of ADHD in girls because of a lack of relevant longitudinal research; however, current studies suggest that ADHD can also have long-term negative effects on girls.

## Current Study Findings

Study results indicate that two forms of treatment—carefully administered medication alone or in conjunction with an intensive behavioral treatment program, including a therapeutic summer camp, parent training, and teacher consultation/classroom management—were significantly more effective in reducing the symptoms of ADHD than either behavioral treatment alone or routine community care. In addition, children in the combined treatment group (medication plus behavioral treatment) received, on average, significantly lower doses of medication than those receiving medication only—yet children in both these groups showed similar reductions in ADHD symptoms. To date, these differential effects have extended for at least 14 months.

In general, in other areas of functioning (oppositional/aggressive behaviors, internalizing symptoms, social skills, parent-child relations, and academic achievement), few differences among the three study treatments were found with three exceptions: combined treatment was superior to behavioral treatment for parents' reports of their children's anxiety symptoms, oppositional/aggressive symptoms, and reading achievement. Only the combined treatment fared significantly better than community care for all five areas of functioning and a composite measure of overall functioning. In contrast, medication and the behavioral program alone were each superior to community care in one functioning area (social skills and parent-child relations, respectively). However, parents expressed greater satisfaction with treatment quality and children's progress and children were less likely to drop out of the program when they received the combination and behavioral treatments than when they received medication only.

Significantly, all of these findings were replicated across all six study sites. Because the sites served populations with widely varying sociodemographic characteristics, the study's results appear to apply to a broad range of children and families affected by ADHD.

## Future Directions

With continued funding from NIMH, ED, and OJJDP, researchers plan to follow study subjects into adolescence, conducting repeated assessments that explore multiple variables for variations in outcomes associated with the four treatment strategies. Researchers will also provide information to ED and OJJDP on the subjects' rates of aggressive and violent behavior, school problems, substance abuse, delinquent and criminal activity, and contact with the juvenile justice system.

## For Further Information

For more information on the Multimodal Treatment Study of Children With Attention Deficit Hyperactivity Disorder, contact:

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*The Office of Juvenile Justice and Delinquency Prevention is a component of the Office of Justice Programs, which also includes the Bureau of Justice Assistance, the Bureau of Justice Statistics, the National Institute of Justice, and the Office for Victims of Crime.*

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