ENHANCED
Learning

# ATTENTION-DEFICIT/HYPERACTIVITY DISORDER

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*Questions Answered*

What is Attention-Deficit/Hyperactive Disorder (AD/HD)?
What is the incidence of AD/HD?
What are the types of AD/HD?
How often do co-existing disorders occur with AD/HD?
What are the suspected causes of AD/HD?
How can a diagnosis of AD/HD be made and who does the diagnosis?
What are the treatment options for AD/HD?
How can your school help in the treatment of AD/HD?

Some children can't sit still. Others are highly distractible, forgetful, or inattentive. Some appear distracted by every little thing and don't seem to learn from their mistakes. Many of these children disregard rules, even when they are punished repeatedly. There are also those who tend to act without thinking, resulting in many accidents and reprimands. This collection of problematic features is called *Attention-Deficit/Hyperactivity Disorder (AD/HD).*

AD/HD is one of the most common reasons children are referred to mental health professionals. It may be one of the most prevalent problems of childhood. The consensus of professional opinion is that approximately three to eight percent of children have AD/HD. This translates to as many as two million school age children. Every classroom in the country averages one AD/HD child. About sixty percent of these cases persist into adulthood. Approximately four percent of adults have AD/HD.

AD/HD also has a heavy economic toll in the United States. Overall national annual incremental costs of AD/HD range from $143 to $266 billion. Most of these costs are incurred by adults ($105 billion–$194 billion) as compared with children/adolescents ($38 billion–$72 billion).

For adults, the largest cost category is productivity and income losses ($87 billion–$138 billion). For children, the largest cost categories are health care ($21 billion–$44 billion) and education ($15 billion–$25 billion). Spillover costs borne by the family members of individuals with ADHD, are also substantial ($33 billion–$43 billion). (Doshi, 2012)

## TYPES OF AD/HD

Medical science first documented children with AD/HD symptoms in 1902. Since that time, it has been given various names: minimal brain dysfunction, hyperkinetic reaction of childhood and attention-deficit disorder with or without hyperactivity. The Diagnostic and Statistical Manual, fourth edition (DSM-IV), uses the term Attention-Deficit/ Hyperactivity Disorder. DSM-V will be out in 2013, but most likely the term will not be changed in the new addition.

There appears to be several types of AD/HD.

Some children are primarily impulsive and hyperactive, while others are primarily inattentive and distractible. There is a third group which seems to have both impulsive and inattentive characteristics. A fourth group in DSM-V is the inattentive presentation - Restrictive: whenthe features of inattention are met, but no more than two symptoms from the hyperactivity-impulsivity category are present in the past 6 months.

Children with hyperactivity exhibit aggressive conduct problems and bizarre behavior, and appear impulsive. The hyperactive child is more noisy, disruptive, messy, irresponsible and immature. The "whirling dervish" or "Dennis the Menace" labels will apply. These children have a higher risk for serious aggressive or oppositional behavior and antisocial or acting out behavior.

In contrast, those attention-deficit children who are predominantly inattentive tend to be anxious, shy, socially withdrawn, moderately unpopular, poor in sports and low in school performance. The primarily inattentive student often stares into space and daydreams, is forgetful in daily activities, appears to be low in energy, and is sluggish and drowsy. This child seems to have difficulty becoming sufficiently aroused and vigilant at a level that fosters adequate attention to academic tasks. Th is student may be described as a "space cadet" or "couch potato" and often seems lost in thought, apathetic and lethargic. (S)he is less aggressive, impulsive and overactive, both at home and school, and has fewer problems in peer relationships. This category probably makes up the largest number of AD/HD children, yet may be the most under- diagnosed.

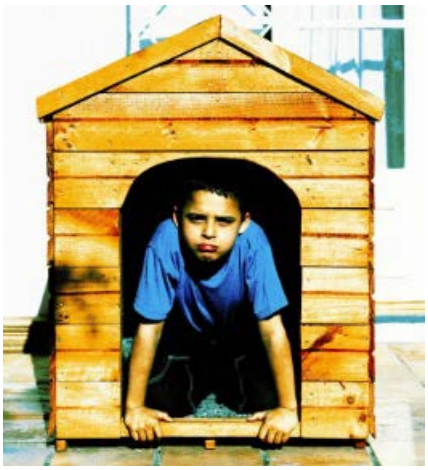
Some children can have a combination of both inattention and hyperactive impulsive features. This child will have most of the behavioral manifestations of inattention, such as failing to give close attention to details, making careless mistakes, and being easily distracted by extraneous stimuli. In addition, this child will be troubled with hyperactive impulsive features, such as fidgeting with hands or feet, being unable to remain seated, being often on the go, interrupting others, and having difficulty awaiting his turn.

All children will sometimes be inattentive, impulsive or high energy. However, with attention-deficit children these symptoms are a regular part of the daily routine, rather than

the exception. Also, these behaviors tend to occur at school, church, grandma's house and the grocery store, as well as at home. The general rule is that these children are consistently inconsistent.

Some studies suggest the prevalence of AD/HD is greater in boys than girls. However, because many girls have the inattentive form of AD/HD, they have gone undiagnosed and may be under-represented in the incidence figures. When all forms of AD/HD are included, the occurrence may be quite even between genders.

Additional requirements for a diagnosis of AD/HD, are that the symptoms last more than six months; occur in more than one setting; regularly disrupt school, play and other activities; and cause problems in relationships with adults and other children. Students with AD/HD often appear immature and behave in ways more like younger children.



It is also true that AD/HD frequently coexists with other conditions such as anxiety, depression, or learning disabilities.. This coexistence occurs about seventy-five percent of the time.

Adolescents with AD/HD present many challenges. During their teen years academic and organizational demands increase. At the same time, teenagers are dealing with typical adolescent issues such as discovering their identity, establishing independence, dealing with peer pressure, deciding about illegal drugs, and handling emerging sexualityand the challenges of adolescent driving.

Challenges in executive functioning have also emerged as a significant problem for AD/HD students. Executive function refers to the "variety of functions within the brain that activate, organize, integrate and manage other functions" (Brown, 2000). The executive functions are mental processes that direct a child's thought, action, and emotion, particularly during active problem-solving. Examples of executive functioning tasks can include: selecting appropriate goals for a particular task, planning and organizing an approach to problem-solving, initiating a plan, inhibiting or blocking out distractions, holding a goal and plan in mind, trying a new approach when necessary, and checking to see that the goal is achieved. Executive functions are also responsible for controlling a student's emotional responses, thereby allowing for more effective problem-solving.(Gioia, 2000) (Buckley, 2012)

AD/HD students have trouble planning for the future, keeping track and adjusting strategies to accomplish long term goals. Many of the students have difficulty with organizing their schoolwork and other related study skills.

## CAUSES OF AD/HD

AD/HD continues to be one of the most thoroughly researched conditions of childhood; yet the exact causes are still not known. Neurochemical abnormalities, which might underlie this disorder, are difficult to identify. The major evidence points to diminished activity in certain brain regions and heredity as the most likely cause of most forms of attention disorder. In other words, many AD/HD children seem to arrive in the world with temperaments that leave them difficult to manage. Part of the basis for this predisposition may be inherited.

The cause of AD/HD is understood to be dysregulation of certain neurotransmitters in the brain that make it harder for a person to sort out or regulate certain internal and external stimuli. These deficits in brain neurochemistry make it harder to concentrate and focus. Several neurotransmitters, including dopamine and norepinephrine, probably affect the production, use and regulation of other neurotransmitters, as well as the functioning of some brain structures. These problems with regulation of certain brain functions seem to

be centralized in the frontal lobes, making it more difficult for an AD/HD person to control input from other parts of the brain. The frontal region of the brain, which is just behind the forehead, is said to control the "executive functions" of our behavior. The executive function is responsible for remembering, organizing, inhibiting behavior, sustaining attention, initiating self-control, and planning for the future. Without enough dopamine and related neurotransmitters, the frontal lobes are understimulated and unable to perform their complex functions effectively.

Children without this genetic predisposition can develop AD/HD through illness or injury, but this rarely happens. Maternal smoking, drug use and exposure to toxins might be a factor in some AD/HD students. Childhood exposure to environmental toxins, such as lead, may also be linked to symptoms of AD/HD. Substances added to food, such as artificial coloring or food preservatives, may contribute to hyperactive behavior. Although sugar is a popular suspect in causing hyperactivity, there is no reliable scientific proof for this..

At this time, there is very little evidence that AD/HD can arise purely out of social or environmental factors, such as family dysfunction, diet, toxins, or faulty parenting. It is true that parental frustration and negative reactions toward a child can aggravate the problem, but it does not actually cause AD/HD. The ultimate cause of AD/HD appears to be an inherited condition affecting the biochemistry of brain function.

## DIAGNOSIS OF AD/HD

Here are some conditions or characteristics that might suggest an evaluation is necessary:

- ✓ If many of the symptoms of inattention, distractibility or hyperactivity/impulsivity described earlier have persisted for at least six months
- ✓ If the AD/HD type descriptions are very prominent in the day-to-day life of the child
- ✓ If staff or family of the student have suggested that there might be something out of the ordinary going on with this student
- ✓ If a teacher has reported frequent problems with inattention, distractibility, forgetfulness, noncompliance, daydreaming, impulsivity, peer problems, underachievement, or incomplete assignments
- ✓ If the teacher or parents have suggested there might be some type of problem based on the high-maintenance requirements of this student
- ✓ If the self esteem of the student appears to have gotten lower and lower because of problems with self-control, social or school failure, or inability to sustain an interest in activities that occupy most children.

These conditions or events are telling you something. This list of features is not exclusive to attention disorders. However, these enduring characteristics are indicative of some kind of problematic situation. It would certainly be wise to seek professional help in determining the causes and in point the parents and school in the direction of treatment and help.

There is no simple test that determines a child has AD/HD. Diagnosis is a complicated process that requires the skill of a psychologist, psychiatrist, pediatrician, pediatric neurologist or other mental health professional who specializes in special needs of children. A proper diagnosis orients the child, parents, and caregivers to the exact nature of the child's difficulties by providing information about strengths and weakness. It should also clarify the specific problems with attention, over-arousal, and impulsivity. A diagnosis should also reveal a student's learning style and academic capabilities, along with direction and recommendations for parents and teachers.

A thorough diagnosis should determine the presence of other problems, such as learning

disabilities, conduct disorder, history of abuse, poor socialization skills, or disruptive family relationships. Understanding all these factors allows you and your professional team to design and implement a more effective intervention program.

AD/HD is a complex disorder that works its way into all levels of a child's life. Therefore, the most helpful professional is one who will gather information from multiple sources and arrive at a diagnostic decision based on a reasonable integration of the data. For a problem this chronic and multi-faceted, you need someone who is willing to deal with the diversity of issues that arise at home, in school, and within the community.

If the student attends a private school, learning disability assessment is available through the public school in the district the parents live. However, since most public schools will not assess AD/HD, the parents will need to see an outside professional.

Another resource is Children & Adults with Attention Deficit Disorders (CH.A.D.D.). Through family support and advocacy, public and professional education, and scientific and educational research, CH.A.D.D. works to ensure that those with attention deficits reach their inherent potential. Local chapters of CH.A.D.D. can help you locate resources in your area for both diagnosis and multi-modal treatment. If you need help in locating a local chapter of CH.A.D.D., they can be found on the Internet at *www.chadd.org*.

## CO-EXISTING DISORDERS

As many as seventy-five percent of children with AD/HD have at least one other major disorder. Any disorder can co-exist with AD/HD, but certain ones seem to occur more commonly with AD/HD. The most common disorders to occur with AD/HD are disruptive behavior disorders, such as Oppositional Defiant Disorder or Conduct Disorder; mood disorders; anxiety disorders; tics and Tourette's Syndrome; and learning disabilities.

The strong possibility of these coexisting disorders complicating the diagnosisreinforces the need for a thorough and competent diagnosis by a professional experienced in the evaluation of special needs of children and adolescents.

## TREATMENT OF AD/HD

There is no cure or quick fix for attention disorders. In spite of claims to the contrary, special diets, electronic gadgets, or singular environmental alterations have not been proven to be helpful with significant numbers of AD/HD children. The good news, however, is we do know a great deal about how to intervene with AD/HD children. There are numerous strategies and procedures that can improve the child's behavior, self-esteem and overall quality of life.

The types of intervention fall into four categories:

- ✓ General education for the parents about AD/HD and the enhancement of parenting skills
- ✓ Teaching the child self-control, attention, decision making and social skills
- ✓ Medical intervention
- ✓ Educational accommodations

## EDUCATIONAL AND PARENTING SKILLS

The process of assisting children diagnosed with AD/HD begins by increasing the parent'nd educators' understanding about the nature and symptoms of AD/HD. Books, tapes, seminars, support groups, and educational and mental health professionals are sources of information to help broaden the parent's and school's awareness of how AD/HD impacts the student.

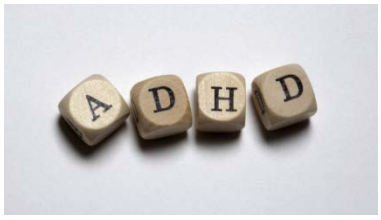
AD/HD children need clear structure, definite descriptions of what they are being asked to do, specific consequences for their behavior, and consistent enforcement of these principles. The child needs an organized environment where the demands of a specific situation are identified ahead of time. Lots of rewards and praise for successful and appropriate behavior is a necessity. As the parents, teachers and other caretakers refine their ability to carry out these ideas, the child will be enabled to behave more appropriately and achieve more success.

Many resources are available to help the school or family identify and implement this positive structural environment for the child. Consult them for details about strategies such as: giving clear,positive direction; ending interactions successfully; managing behavior; using response-cost, negative reinforcement; implementing cognitive self-monitoring; avoiding overcorrection; effectively using time-out, grounding, and logical or natural consequences. (Martin, 1998)

Appropriate incentives, offering both rewards and punishments, are necessary. Time-out and grounding can be very useful; but be careful to adapt each tactic to the needs and age of the student. Many situations may require consulting with a psychologist or other professional.

## MEDICAL INTERVENTION

Without question, one of the most difficult decisions the parents of an AD/HD child face is whether to use medication. If a child has an infection, the parents may give them an antibiotic for a few days, and the problem is resolved. In contrast, the drugs given to manage AD/HD must be taken for months and sometimes years. Many professionals and parents can't help but wonder how this long term usage might affect the child.




More children receive medication to manage AD/HD than any other childhood disorder. Likewise, more research has been conducted on the effects of stimulant medications on the functioning of children with AD/HD than any other treatment modality for any childhood disorder. This extensive research helps us be fairly definitive about the benefits and liabilities of medication. This is one area where the results are a little easier to identify. This applies to scientific research, not necessarily to most of the sensational media coverage. A great deal of misinformation has been perpetuated by the popular press.

In general, we can say medication intervention is a significant help to AD/HD children. Recently the National Institute of Mental Health released the Multi-modal Treatment Study of Children with Attention-Deficit/Hyperactivity Disorder (MTA). This study is the longest and most thorough study ever completed comparing treatments for AD/HD. The study found that medication alone, or medication in combination with intensive behavioral therapy, was significantly superior to other types of treatment. Although medication alone was found to be more effective than intensive behavioral treatment, the combination of the two was necessary to produce a variety of improvements, and also led to the use of somewhat lower dosages of medication. For the improvement of social skills and anger manage-

ment, behavioral treatment was found to be very beneficial and necessary. Medication alone, does not help a child make friends or know how to resolve conflict in appropriate ways.(Group, 2004)

The primary benefits of medication are the improvement of the core problems of AD/HD:hyperactivity, impulsivity, and inattentiveness. Attention span seems to improve and there is a reduction of disruptive, inappropriate and impulsive behavior. Compliance with authorityfigures is increased, and children's peer relations may also improve, primarily through reduction in aggression. In addition, if the dosage is carefully monitored and adjusted, medication has been found to enhance academic performance.

Medication does little to rectify any cognitive functioning or learning disabilities. If a child has visual or auditory processing deficits, medication will probably not change this learning problem. What it may do is help the child pay attention better, so that the remedial instructions will have more of a chance to impact the learning disability. If medication is to be considered, it must follow strict controls, appropriate dosages, and careful monitoring.

The most important concept to emerge from the vast amounts of research about AD/HD is that no treatment approach is successful alone. Medical, behavioral, psychological or educational interventionare not adequate by themselves.. We must be conscious of treating the whole child or adolescent. Successful intervention makes a difference both on the short- and long-term. We want to make changes which will help bring about the necessary confidence, competence, organization, discipline, and character in the student. However, we also want changes that will last a lifetime.

## EDUCATIONAL INTERVENTION

It's no wonder an AD/HD student has problems with school. Nowhere else is your child required to concentrate so long in the face of so many powerful distractions. Successful performance is dependent on the ability to persist and maintain concentration for long periods of time. All students must learn class routines, conform to teachers' rules and inhibit their impulses to do otherwise. Furthermore, the student must control his body movement, maintain an appropriate level of arousal and delay gratification until report cards are issued.

Our educational system demands more of these skills at an earlier age. As a result, the AD/HD child will experience increased frustration and failure. Because of these problems it is often the classroom teacher who raises questions that bring about referrals for an evaluation. While the teacher knows your child has a problem, the confusion may arise over what kind of problem it is and what to do about it. Unless the teacher believes the AD/HD student's diagnosis of AD/HD is well-founded and real, it will be hard to convince her to make all the necessary modifications for the student.

Here are a few guidelines for making educational interventions with the AD/HD student.

- ✓ The staff must accept the legitimacy of AD/HD.
- ✓ The classroom must be structured and predictable, but not punitive or sterile. The student needs clear rules and consistent scheduling. Assignments should be clearly communicated to the child and to the parent. Instruction should be stimulating, clear, and uncomplicated.
- ✓ Distractions should be minimized for the student. This may mean seating the student close to the teacher and away from obvious distracters such as windows, active classmates, gerbil cages or pencil sharpeners.
- ✓ Immediate and frequent feedback is required. Re-direction will often be necessary so that long periods of unproductive activity are minimized.

- ✓ The student needs verbal and tangible positive consequences for attention to task and assignment completion. Other meaningful positive and negative consequences will be needed to assist the student in learning appropriate classroom behavior.

- ✓ Directions and instructions to the student must be clear, concrete and concise. Give only a few directions at a time and use as much visual, auditory and handson demonstration as possible.

- ✓ The curriculum needs to be adjusted to allow the student to be successful. This is done by modifying the instruction methods to accommodate the child's difficulty in paying attention and concentrating. Help with organizational skills is necessary. Some flexibility is needed to allow for the student's low frustration tolerance. Assignments may need to be shortened. Computers can be used to compensate for poor handwriting ability. Assignments might be divided into smaller parts to help the student feel successful and to give more frequent opportunity for feedback.

- ✓ It is crucial for the entire team of educators, mental health professionals, medical personnel, and parents to maintain continuous communication with each other. Everyone must work together toward the common goal of ensuring the student the best educational experience possible.

- ✓ The school and parent will usually need to maintain an advocate status for the student. The school needs to be current with reports on the student. If there are concerns about behavior or academic progress, get in touch with the parent right away. Don't wait for the six week progress reports.

- ✓ Many other ideas about accommodation can be found in *Help! For Teachers. Strategies for Reaching All Students.* (Martin, 1998, 2004)

## LEGAL RIGHTS OF AD/HD STUDENTS

The Federal Government has established several provisions that affect the education of children with Attention-Deficit Disorder. One of these is the Individual's with Disabilities Education Act (IDEA), and the other is Americans with Disabilities Act of 1990 [ADA], including changes made by the ADA Amendments Act of 2008 which became effective on January 1, 2009. More information can be found at

- *www.ada.gov*
- *www2.ed.gov/policy/rights/guid/ocr/disability.html*
- *www.nchcy.org/schools-administrators.*

Students with Attention-Deficit/ Hyperactivity Disorder, like students with any other disability, do not automatically qualify for special education and related services under IDEA without meeting certain conditions. If the child is in a private school, these rules do not apply, unless the child goes to the public school for part of their education. More information can be found in *Help! For Teachers. Strategies for Reaching All Students.* (Martin, 2004).

If a child with attention disorder is found not to be eligible for services under Part B of the IDEA, the requirements of Section 504 ADA Amendments Act of 2008 may be applicable, if he or she meets the Section 504 definition of disability. This definition requires or defines a disability as "any person who has a physical or mental impairment which substantially limits a major life activity, such as learning." Thus, depending upon the severity of their condition, children with attention disorder may or may not fit the definition of either or both laws. Not all children with attention disorder are covered.

These laws require public schools to make modifications or adaptations for students whose AD/HD results in significant educational impairment. Children with AD/HD must be placed in a regular classroom to the maximum extent appropriate to their educational needs, with the use of supplemental aids and services, if necessary. While children covered under the IDEA must have an individual education plan (IEP), students covered under Section 504 need a less formal, individualized assessment. Many private schools have accommodation plans that are very similar to the 504 Accommodation approach for public schools. ■

## Organizations

**Children and Adults with Attention Deficit/Hyperactivity Disorder (CHADD)** is the nation's leading non-profit organization serving individuals with ADHD and their families. CHADD has over 16,000 members in 200 local chapters throughout the U.S. Chapters offer support for individuals, parents, teachers, professionals, and others. *www.chadd.org*

**National Resource Center on AD/HD** is a program of CHADD that provides information about ADHD, diagnosis and treatment, legal and insurance systems, educational issues, and challenges of living with AD/HD. *www.help4adhd.org*

**Attention Deficit Disorder Association (ADDA)** provides information; resources and networking opportunities to help adults with Attention Deficit Hyperactivity Disorder lead better lives. *www.add.org*

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