# RECOGNIZING AND UNDERSTANDING ATTENTION DEFICIT-HYPERACTIVITY DISORDER

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## What is Attention Deficit-Hyperactivity Disorder?

Attention Deficit-Hyperactivity Disorder (ADHD) is a biologically based developmental disorder that actually includes two related but separate conditions. Some ADHD children are hyperactive, some have attention deficit problems, and some have both types of problems. Although no one knows for sure, the most current thinking is that the brain centers involved in hyperactivity and attention deficit are closely related and that is why the majority of children have both conditions or elements of both problems. The term Attention Deficit-Hyperactivity Disorder is one which has evolved over many years. There have, in fact, been many different terms used (*minimal brain dysfunction, hyperkinesis, hyperactivity, attention deficit disorder*, **attention deficit disorder with hyperactivity, attention deficit disorder without hyperactivity**). To some extent, these different terms reflected the prevailing notion about the nature of the problem. More often, they reflect the opinions of the clinicians involved in developing the diagnostic systems and labels. These changes are confusing and complicate a parent's understanding of what the diagnosis means. I have found it simplest to think of ADHD as two related difficulties where the children might have problems with impulse or arousal control (hyperactivity) or difficulty sustaining attention (attention deficit) or both.

Most ADHD children are hyperactive; they have a basic difficulty inhibiting their arousal and their impulses. In a sense, hyperactive children have trouble "putting the brakes on their behavior." As result, they have trouble calming down after they get excited and their actions and emotions tend to be in extremes. Where another person might be disappointed or annoyed, the hyperactive child gets angry. While some children want to go to the store, ADHD youngsters NEED to go to store. Children with ADHD often seem to act without thinking. The children act impulsively in situations which warrant planning or consideration. They may say or do things without fully thinking through the impact of their actions on other people, and they find themselves behaving to their own detriment.

Hyperactive students are not always the most active. The difference is that those children can settle and focus when it is important to do so, while the ADHD student has trouble settling where the situation demands it. We are referring to motor activity which is inappropriate to the social and situational demands. We should consider the quality of his or her activity level. What is important is the goal-directedness of his behavior. It is important to evaluate the child's activity

level, therefore, across a variety of situations and tasks.
Attention deficit students have difficulties with tasks that require *sustained* attention and concentration, particularly on tasks that involve externally dictated rules or expectations. If a student can sit through a meal or watch TV or play with certain games for an extended period, that does not preclude a diagnosis of ADHD. Most children with attention deficit do indeed have things that hold their interest and that they can pay attention to (can you imagine a person being interested in something that they could not pay attention to?). The key question is whether the student has difficulty concentrating and sustaining attention on tasks presented by parents or teachers, ones that might be perceived as work and involving significant mental effort.

Attention deficit is more difficult to evaluate in children because there are so many factors that affect attention and concentration. Usually, parents of children with attention deficit disorder find themselves having to supervise their children and continuously monitor their activity. Simple routines, such as getting ready for school or getting in and out of the shower, can take forever. Activities that involve task persistence, such as cleaning a room or doing homework, can be agonizing and time consuming. The students usually have trouble following directions and they need to be reminded to do things repeatedly. Children with attention deficit are often considered daydreamers or spacey and they sometimes will be misconstrued as being lazy or unmotivated.

**What Causes Attention Deficit-Hyperactivity Disorder?**

There are many notions of why children are Attention Deficit-Hyperactivity Disordered. Currently we do not know whether there is even *a* cause, let alone what that cause might be. The most well accepted theory is that ADHD children have problems with either the metabolism or intake of neurotransmitters in the brain. Researchers have speculated that frontal/subcortical structures are involved, reflecting an "under-arousal" of the brain system. Theoretically, this leads to ineffective inhibition and attentional processes. Researchers associate problems of ADHD with specific chemical messengers regulating either attention or arousal or both. Our clinic's developmental pediatrician refers to brain mechanisms which work much like a thermostat of attention and arousal. It is important to know that much work lies ahead before any specific brain mechanism can be identified.

One interesting notion about the nature of ADHD suggests that the youngsters have problems with moderating arousal. That is, once they get excited (either through the positive exhilaration of a party or game or the negative arousal associated with anger or anxiety), they have trouble settling down. Many of us see this: when we roughhouse before bedtime, the children struggle to settle down to sleep, and when the youngsters are active on the playground, they are prone to get into trouble or have trouble in the next class. The "arousal hypothesis" may explain why the youngsters can struggle when we are trying to be positive. It is not that the students are trying to ruin things; it is that they are often excited, and that excitement is difficult for them to control.

Another interesting theory implies that ADHD children satiate or grow bored with the reinforcing or engaging elements of a task. As it becomes less enjoyable, it grows harder to focus and concentrate. In essence, they have difficulty maintaining their motivation. There is some support for this notion, since the brain centers related to motivation and reinforcement are also located in the connections between the prefrontal and limbic system areas (the areas speculated

as involved in ADHD).

There are many other theories regarding ADHD (sugar and other aspects of diet, for example). Diet, in particular, has been popularly held as one of the primary causes of ADHD. To date, studies do not show diet to be a significant factor for most children. Recently Dr. Conners has presented some interesting data which suggests the possible relationship between sugar and carbohydrate intake (e.g., pancakes and syrup) on attention and behavior, particularly in the absence of a protein food source (e.g., milk, peanut butter, eggs). It was found that certain food combinations had an even greater effect on the learning and performance of ADHD children. At this point, teachers should encourage the use of a balanced, nutritionally rich diet with the children. Avoiding processed foods or excessive intake of sweets makes sense for everyone. Clearly, breakfast is an important meal that has a significant effect on learning and behavior in the classroom.

**What is the Impact of ADHD?**

ADHD is more commonly diagnosed in boys over girls by a ratio of perhaps 3 to 1. There are many speculations as to why this might be the case, including the role of male hormones on activity level and societal attitudes towards the behavior of boys/males. Perhaps the most important finding is that ADHD girls are simply under-identified by parents and teachers, with studies showing a higher incidence of girls with ADHD than we might have originally predicted.

ADHD tends to run in families. Perhaps 30 to 40 percent of the parents of ADHD students consider themselves to have been hyperactive. Twenty five percent of non-twin siblings have an ADHD diagnosis. This implies that some parents will be frustrated by not being able to help their child avoid the problems they experienced when younger. It also means that clinicians and teachers should be sensitive in describing a student's difficulties--they may be making statements or judgments which apply to the parent's own childhood experiences.

A large percentage of ADHD children are at risk for school problems by virtue of their behavior and attentional difficulties. Moreover, many have fine motor and written language problems which affect their written work. Others have auditory processing difficulties affecting their learning. This highlights the importance of a thorough intellectual, psychological, and academic assessment in making a proper diagnosis. As many as 40 to 50 percent of ADHD students are felt to have specific learning disabilities and even more have problems of academic underachievement.

ADHD difficulties will affect all aspects of daily routine. Simple things like having a child get dressed in the morning or line up for recess during school can be problematic. This is

understandably frustrating for parents and teachers and is difficult for others (without personal or professional experience) to understand. Do not expect support and understanding from others without educating them first.

One of the most frustrating features of ADHD concerns the problems the children seem to have in learning from experience. That is, they do not seem to respond to consequences the way other

children do. Parents and teachers find that techniques that work with other students do not work with ADHD students. Until we realize this, we can doubt ourselves and our children.

One of the hallmarks of Attention Deficit-Hyperactivity Disorder is variability. An ADHD child may focus and settle acceptably one day and be "hyper" the next. The morning may go well, and the afternoon, not. This inconsistency can be very puzzling and frustrating for the child, parents, and teachers.

We should never underestimate the impact ADHD has upon peer relationships. As toddlers, the children may be perceived as active, busy, and wild. Other children will perhaps be wary, but not necessarily avoidant. As an ADHD child grows older, however, his or her impulsivity and high activity level disrupts classroom learning and interferes with games and other social activities. This leads to negative attention and rejection from peers. Studies suggest that even when ADHD children modify their behavior, they are not always accepted by their peers, and we need to help the class recognize and appreciate the behavior change of the ADHD child.

Children with ADHD experience additional difficulties involving low frustration tolerance, peer problems, academic troubles, etc. which often contribute to low self-esteem. Clinical experience and academic research emphasize the importance of helping the children maintain a positive self-image as a key ingredient in a positive prognosis.

Many attribute an ADHD child's behavior problems to a lack of discipline, lack of structure, or other aspects of parenting. Although improvement through parenting changes is possible, there is no justification in blaming parents or teachers for the ADHD problems of most children. Most researchers and clinicians see these problems as existing on a constitutional basis for most of the children. Aside from the frustration, there is often guilt in knowing that parents and teachers cannot help students improve more quickly or avoid the frustration and pain of not getting work done on time or not having friends. The parents and teachers need support for their efforts as much as the children do. Since many parents and teachers will describe their children as inattentive *or* impulsive *or* hyperactive, they will not understand how the needs of ADHD children (who have difficulty with all three areas) differ from theirs. Consequently, they will not be as supportive or responsive as we might expect. ADHD is a common problem in childhood, with perhaps one in 20 children diagnosed as having this syndrome. Virtually everyone has some prior experience with ADHD. Teachers' and parents' personal experiences with ADHD will, therefore, be an important factor in how they respond to diagnostic and treatment issues.

Many parents wonder how ADHD children develop and function as adults. To answer that question, researchers have done longitudinal studies, following the children over many years. The data can only tell us how children who were treated ten to 15 years ago fare today. It does not really tell us how children growing up today will be in the future. In reviewing studies, we want to make sure that the characteristics of the children in the study match our student or child. In one study, for example, a large percentage of the children followed were in classrooms for behaviorally or emotionally disturbed children. Information about the long-term outcome of ADHD children does not necessarily tell us enough about the prognosis for our child. Please remember that Attention Deficit-Hyperactivity Disorder is a diagnosis that tells us only some things about a child; it does not tell us how bright a child is or how musical they are or how athletic they might be. It tells us little about a student's personality or family background or

values. We should not be tempted to predict a person's future based upon a diagnosis that tells only a small portion of what that person is like.

One thing we do know is that ADHD can be a lifelong factor in a person's life. ADHD is certainly something we need to consider beyond childhood. Aside from the social and emotional impact, there are specific risks that continue into adulthood. The data that does exist suggest that the children are at risk. Although they may become less active (particularly in adolescence), many children continue to experience problems with attention and concentration, impulsivity, learning, self-image, peer relationships, and other areas of daily living. ADHD children are at greater risk for drug and alcohol problems.

I believe that the outlook is a positive one, however. I have followed hundreds, if not thousands, of families and the majority of the children have done very well. Families who work together with schools and focus on self-image-building experience improvement. The techniques and approaches of today (behavior modification, self-control strategies, medication options, therapy approaches, instructional methods) have certainly advanced and offer optimism for the future.