Multimodal Assessment and Treatment of Attention-Deficit/Hyperactivity Disorder (AD/HD)

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Attention-Deficit/Hyperactivity Disorder (AD/HD) represents one of the most common reasons why children are referred to mental health clinicians in the United States. The disorder is characterized by difficulty in sustained attention, impulsivity, and, in some cases, hyperactivity. AD/HD is a neurobiological disorder that affects more than 4 million school-aged children. As many as 30-70% of children diagnosed with AD/HD will continue to show symptoms into adolescence and adulthood.

AD/HD may co-occur with a number of other disorders including depression, anxiety, conduct disorders, and learning disorders. Unfortunately, as many as 50% of individuals afflicted with AD/HD are never properly diagnosed. In order for AD/HD to be effectively treated, it must be properly evaluated. Careful assessment of AD/HD is the first step in its treatment; this requires the collection of information from a number of sources (e.g., individual, parents, teachers, mental health professional, physician). Treatment of AD/HD is comprehensive and will, ultimately, involve a number of individuals working collaboratively in different environments (i.e., home, school) to best meet the needs of the AD/HD individual.

ASSessment of AD/HD

1. Clinical Interview

Information that is obtained from parents or guardians provides background in areas including developmental history, social-emotional functioning, medical history, family history and family dynamic, educational history, academic history and strengths that their child possesses. When assessing adults, it is useful to interview a spouse or significant other who is familiar with the individual. Interview data obtained directly from the child, teen or adult will yield critical information about the individual’s perception of their difficulties, coping abilities as well as insight into their strengths. Moreover, background information can also be obtained through a review of past report cards and exploration of teacher comments from elementary school onward. This is especially relevant for adults despite the occasional difficulty in obtaining such past records. Discussion of this material through the interview process can help in the conceptualization of the individual’s needs. Information obtained from teachers and school staff provides essential background data. Finally, attendance, classroom observations, peer relations and disciplinary data can be investigated through school-based interviewing.

Interviewing is an indispensable part of an evaluation. The interview process can facilitate rapport-building between the individual, clinician, and family. Feeling comfortable with the interviewing clinician is crucial. Highly descriptive information obtained from the aforementioned sources is valuable and can be used in the development of a treatment plan.

2. Medical Examination

A complete physical evaluation may yield information on the current health and nutritional status of the individual and may rule out other medical conditions. Medical assessment may include vision and hearing evaluation, blood tests to assess for chemical profile,
thyroid functioning tests and allergy testing. Neurological assessment can rule out seizure disorders such as partial seizures, narcolepsy or sleeping-related disorders.

3. Behavior Rating Scales

These are self or informant report measures that compare an individual's functioning with a clinical population. Descriptive data and profiles provide objective information regarding functioning. Some Parent and Teacher Rating Scales that may be used include: Child Behavior Checklist (Achenbach & Edelbrock, 1983); Conners Parent and Teacher Rating Scales/Conners-Wells Self-Report Checklist (Connors, 1997); Home Situations Questionnaire and School Situations Questionnaire (Barkley and Edelbrock, 1987); Wender Utah Rating Scale (WURS; Ward, Wender and Reimherr, 1993) and Adult AD/HD Questionnaire (Nadeau, 1991).

4. Laboratory Measures of Attention

These measures require attention to stimuli typically presented to individuals on a computer screen. Performance on vigilance and sustained attention are measured in standardized format and compared to a reference group. Measures of attention include: Continuous-Performance Tests (CPT); Gordon Diagnostic System (Gordon, 1983); and Test of Variables Attention (TOVA) (Greenberg, 1991).

5. Psychoeducational Testing

Tests of intelligence and learning achievement may be given to see if the individual has a learning disability and whether the disabilities are in all or only certain areas of the school curriculum (e.g., reading, math, etc.). Testing also provides a good "sample" of behavior (e.g., how the individual sustains effort as well as tolerates frustration).

6. Observational Measures

Recording of behavior in the natural environment (e.g., classroom) may especially be helpful in monitoring changes elicited by both behavioral and medical interventions.

TREATMENT OF AD/HD

1. Education

Education is a key in helping people understand AD/HD. Rather than being seen as lazy, rude, and bossy, it could be helpful for teachers, administrators, parents and family members to know that AD/HD is a neurobiological disorder that interferes with the individual's ability to consistently meet the demands of the environment.

2. Academic

The school environment (or employment setting for adults) means greater demands for the AD/HD individual. Success at school (and work) requires the ability to sit still, concentrate over sustained periods of time, cooperate with peers, etc. The school (or work) climates are not always "AD/HD-friendly." Is your school district (or your employer) "AD/HD AWARE?"

Academic interventions for children and adolescents may include:

a. A review of the Individualized Education Plan (IEP)- this document is the basis for the child's instruction (assuming he/she is classified [e.g., Other Health Impaired] by the Committee on Special Education (CSE)). Are testing modifications spelled out clearly and appropriately? For the non-classified student, are “Section 504” services available?

b. To address organizational problems, it could be helpful to appoint a “case manager.” This person could be a teacher, guidance counselor, etc. who could help collect the child’s homework with the child at the end of the day. A second set of books at home may also be beneficial.

c. Daily Progress Reports - immediate and concrete feedback about performance in the classroom is crucial and may be facilitated by these reports.

d. Home-School Note System - this is typically a notebook for comments and feedback between the teacher(s) and parent(s) to maintain ongoing communication.

e. Does the child need individual tutoring? (one to one teaching can be a helpful adjunct support service).

3. Psychotherapeutic Treatment

a. Psychotherapy - may help the AD/HD individual to accept and like themselves. Life for people with AD/HD and/or for members of the family
of an AD/HD individual is often frustrating and confusing. Help may include training in time management, organizational and/or planning skills training, problem-solving training, social skills training, and anger control training. Treatment with a clinician trained in Cognitive-Behavior Therapy could be helpful and research supports this form of treatment for children and adults with AD/HD.

b. Group therapy - may be helpful for both children and adults. Listening strategies, turn-taking skills, and various coping strategies may be discussed and practiced in a group. Moreover, acceptance and a sense of belonging often have positive effects on self-image.

c. Home-based Training - this includes Contingency Management or Behavior Modification Programs. A primary goal of these programs is to shape and reward appropriate and adaptive behavior in the home and school environment (“Catch a kid being good - then reward them”). Home token systems serve to provide AD/HD children with the external motivation they need to complete parent-requested activities that may be of little intrinsic interest. Such programs may include a Response Cost component (i.e., child loses earnings for noncompliance) and a Time-Out component.

d. Parent Skills Training - such training may ultimately give parents the tools and techniques for managing their child’s behavior and it may include “Quality Time” training and relaxation training for parents.

e. Support Groups - such groups connect people who have common concerns. These groups can provide information, education, and emotional support. CHADD is a good example.

4. Medical Considerations/Interventions*

Diagnosis (DSM-IV)
Inattention and/or Hyperactivity/Impulsivity
Onset Before Age 7
Present at least 6 months
Present in 2 or more settings
Evidence of significant clinical impairment

Differential Diagnosis
(These disorders may present like AD/HD)
Developmental Disorders: Learning Disorders; Age-appropriate high activity; Mental Retardation
Psychiatric Disorders: Conduct; Anxiety; Mood; Stress; Substance Abuse
Medical Disorders: Encephalopathy; Seizures; Chronic illness; Drug induced; Sensory deficits (e.g., hearing loss); Tourette’s Syndrome; Hyperthyroidism; Fetal Alcohol Syndrome; Lead poisoning; Pinworms

Comorbid Conditions
(Disorders that may co-occur with AD/HD)
Learning Disabilities; Language & Communication Disorder; Oppositional-Defiant Disorder; Developmental Coordination Disorder; Conduct Disorder; Anxiety Disorder; Mood Disorders/Adjustment Disorders; Tourette’s Syndrome or Chronic Tic Disorder

Pharmacotherapy
Stimulants: Methylphenidate (Ritalin); Methylphenidate HCl (Concerta); Dextroamphetamine (Dexedrine); Amphetamine (Adderrall); Methylphenidate (Metadate)
Antidepressants: Imipramine (Tofranil); Desipramine (Norpramin); Venlafaxine (Effexor); Bupropion (Wellbutrin)
Other: Clonidine (Catapres); Guanfacine (Tenex); Atomoxetine HCl (Strattera)

References
Gordon, M. (1983). How is a computerized attention test used in the diagnosis of attention deficit
disorder? *Journal of Children in Contemporary Society*, 19, 53-64


* Courtesy of K. Burkhard, M.D. 
I. The Development of Self-Concept

Just as we develop concepts about objects in our environment, so do we develop a concept of who we are—our successes and failures, strengths and weaknesses, likes and dislikes. The self-concept permits us to organize our experience and acts as a background or setting against which new information is interpreted. Self-concept evolves over time. It is a product of our memories (both positive and negative), our interactions with our environment, and our belief system.

The self-concept determines how we evaluate ourselves. For example, if we have a positive self-concept, we tend to evaluate ourselves more favorably, whereas having a negative self-concept often results in negative self-evaluation. In the fields of Personality and Social Psychology, studies suggest that most people are motivated to maintain and enhance their self-concept throughout their life. It is nearly universally accepted that people desire to evaluate themselves as positively as possible. Some behavioral scientists have suggested that a positive self-concept serves important functions for the individual. One of the most obvious functions is the maintenance of positive affect (i.e., feeling happy). Positive self-concept typically creates self-confidence. Regarding oneself and one’s abilities positively prompts people to undertake and persist on difficult tasks, thereby increasing the likelihood of being successful and effective.

II. AD/HD and Self-Concept

More recent conceptualizations of AD/HD (with Dr. Russell Barkley leading the way), have suggested that this disorder is more accurately described as a behavioral inhibition disorder. In other words, the individual has a problem with the persistence and maintenance of behavior and effort over time, especially with tedious and boring tasks. Consequently, the development of a positive self-concept in an environment that expects and demands “persistence and effort” may not always occur. It is no wonder why many AD/HD adults (upon diagnosis) describe years of “hell” as they thought (and were told) that they were “dumb” and “lazy” when, in fact, they were not properly diagnosed with this disorder. AD/HD, in many ways, does not facilitate the development of a positive self-concept.

III. The Impact of AD/HD Across the Life Span

Preschool children who are diagnosed with AD/HD often experience difficulty in getting along with peers and it is not uncommon for these children to get “kicked out” of daycare. Parents may even experience difficulty in finding a baby-sitter as tolerance for their child’s behavior may become significantly lowered.

Once a child begins school, the demands of the environment increase significantly. The ability to sit still, listen, obey, inhibit impulsive behavior, cooperate, organize actions, play well, share with others, interact pleasantly with other children are all requisites for a successful academic experience. “Working hard” and being a “well-behaved” boy or girl pays off—acting out. AD/HD symptoms often times first become evident in the early grades as the demands are great for a child who experiences significant difficulty in persisting on a given task.

The AD/HD adolescent may be especially vulnerable to the increased demands of the school environment. For success, proper classroom behavior is essential as well as healthy peer interactions. Unfortunately, many AD/HD teenagers experience a good deal of social conflict and, at times, conduct problems. Academic problems may continue, especially if they were evident earlier on.

As an adult, the AD/HD individual by now, may be painfully aware of his or her inadequacies. There is often a large discrepancy between their potential and actual level of performance. AD/HD makes the individual less effective which can lead to frustration and continued deterioration of their beliefs and feelings about themselves (i.e., lowered self-concept). At no other time are “persistence and effort” as crucial if one is to live an independent, adaptive, and healthy life.

IV. The Use of AD/HD to Improve the Self-Concept

AD/HD individuals possess many traits that are unique and special. Individuals with this disorder often discount these characteristics and, unfortunately, tend to view most aspects of their disorder as a burden. AD/HD individuals tend to be very creative and gifted. They can “let it all out.” As adults, many AD/HD individuals are talented artists and musicians
which are fields that capitalize on creativity. Because of their lack of boundary isolation, AD/HD individuals often have varied interests and tendencies. AD/HD individuals have great capacity to be sensitive to others and empathic and are often open to readily share thoughts and feelings.

V. Self-Concept Improvement in Children and Teens

It is important for adults to set “positive” examples for children. Adults, especially parents, make a tremendous impact on the developing child. There is no better answer to a child’s negative attitude than a positive example. Negative attitudes toward oneself begin very early in a child’s life. Adults are in a position to eliminate self-defeating thoughts and behaviors by giving children a consistent model of a person who refuses to be one of life’s victims.

Adults must teach children to “look within” and encourage them to see themselves as worthwhile even when they fail. It is crucial that praise is used rather than criticism whenever possible. AD/HD children will try any parent’s patience and consequently, praise may not always be a dominant response. This will take practice. Finally, it is important to discourage children from any and all “self put-downs.” When you hear a child say “I’m stupid,” you are being given a chance to raise their self-concept. While it is often not helpful to give a long lecture, you should try to respond with positive reinforcement (“You are not stupid, I have seen you do some very clever things also”).

VI. Conclusion

Many factors will ultimately shape the concept of who we are as individuals. Ideally, positive thoughts and feelings about ourselves are the outcome. Unfortunately, this is not an easy or automatic process, especially for individuals with AD/HD. Comprehensive assessment of AD/HD and intervention are crucial, especially when there is a suspicion of this disorder early on in the individual’s life. Early intervention may break a potentially lifelong experience with negativity that many AD/HD individuals are at risk of encountering on a daily basis.

Recommended Reading


Many families have described their home as more of a “battlefield” than “haven” when there is an AD/HD child in residence. Like other children, AD/HD children test limits and have considerable potential to violate household rules, resist doing their homework, fight with siblings, etc. AD/HD individuals are especially at risk for difficulty in these areas. Moreover, oppositional-defiant behavior, depression, agitation and/or stubbornness can exacerbate an already difficult situation.

Dr. Russell Barkley, a leading researcher and clinician in the area of AD/HD, has proposed basic steps to facilitate the management of AD/HD in children. These suggestions can be applied in the home or school settings. It is crucial to consider the following factors before pursuing Dr. Barkley’s suggestions:

1. **AD/HD individuals** when confronted with a task they find tedious and boring, will feel a strong urge to find something else to do.

2. Arrange for **considerable levels** of positive feedback and consequences for the child and deliver such stimuli as immediate as possible.

3. Strive to reinforce appropriate behavior before utilizing punishment if possible. Do not punish the individual for everything he/she does wrong.

4. **Consistency** means using the same strategies to manage the child’s behavior every time across different situations and similarly between parents/caregivers and educators.

5. Be forgiving. Forgive the child for his/her misbehavior and forgive yourself for the errors, frustration, and confusion that you may encounter in learning to manage and direct the child’s behavior.

Basic Tenets of Behavioral Management for AD/HD Children

1. **Learn to pay positive attention to the child.** Attention is a very strong reinforcer for a child. It is important to consider that even negative attention (e.g., yelling at a child) can be potentially reinforcing and can maintain the inappropriate behavior that is causing it (e.g., interrupting a conversation). Learn when to give attention and when to withhold it.

2. **Give more effective commands.** Don’t give commands that you do not plan to back up. Do not present the command as a question or favor (especially for young children).

3. **Teach the child not to interrupt activities.** Give “two-part” commands that include telling the child what to do while you are busy (i.e., a task) and specifically tell the child not to interrupt you. The task that you give should not be a chore, but some interesting activity such as coloring, playing with a toy, etc. Periodically, stop what you are doing and praise the child for remaining occupied, and then return to what you were doing. You can use this same approach when teaching anything new to the child. Start with frequent attention/praise and gradually reduce (or “fade”) how often you compliment the new behavior.

4. The **token system** is a behavioral strategy utilized to increase appropriate behavior and minimize or eliminate inappropriate or undesirable behavior. Many AD/HD children benefit from programs that systematically deliver rewards or consequences. Two common programs that pair compliance and cooperation with powerful rewards include the Home Poker Chip Program (for ages 4 through 8) and the Home Point System (for children 9 and older). These programs can be used for individual children as well as in the group setting. It is often helpful to define target behaviors to reward with the child. Chips or points become “symbolic” or representative of rewards and/or privileges that the child can earn. Moreover, children can get “fined” for misbehavior as a means to decrease...
inappropriate behavior.

5. **Time-Out** is a method of discipline. It is a brief interruption of activities for your child. The child is placed in a dull, boring place immediately following the inappropriate behavior. He/She remains there until a timer signals that he/she can leave. A rule of thumb for time-out duration is to use one minute for each year of the child’s age. The time-out method serves to bring a quick stop to the problem behavior with the long-term goal of helping the child achieve self-discipline. It is important to consider that time-out, when conducted properly, is a safe and effective way to curtail or stop inappropriate behavior. There is no evidence that time-out emotionally harms children.

6. Management of **behavior in public places** can become a nightmare for parents. It will be most beneficial to set up rules before entering the place. Development of an incentive for compliance is also crucial. Randomly reward/praise the child for appropriate behavior (i.e., “catch a child being good”). Finally, set up a form of punishment for noncompliance. Don’t be afraid to use time-out in a public place - it is an effective method away from home as well.

**Recommended Reading**


AD/HD in Adolescence: Effects on Social and Academic Functioning

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I. The Nature of AD/HD

Attention-Deficit/Hyperactivity Disorder (AD/HD) is a perplexing disorder that makes day-to-day living and coping a unique challenge. According to the Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition (DSM-IV), AD/HD is characterized by a persistent pattern (at least 6 months) of inattentiveness and/or hyperactivity-impulsivity that is more frequent and severe than is typically observed in individuals at a comparable level of development. Some hyperactive-impulsive or inattentive symptoms that cause impairment must have been present before age 7 years and impairment from the symptoms must be present in at least two settings (e.g., home and school). There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.

AD/HD occurs more frequently in males than in females. It is more common in the first-degree biological relatives of children with AD/HD. It is difficult to establish this diagnosis in children younger than 4 or 5 years. However, it has been reported that the average age of onset is 4 years old. In school-age children, symptoms of inattention affect school work and academic performance. Impulsivity often leads to problems with instructions and rules both at school and at home. By mid-childhood and adolescence, signs of excessive motor activity are less common and hyperactivity symptoms may be confined to fidgetiness or restlessness. AD/HD is a chronic disorder with approximately 50% to 65% of AD/HD children becoming AD/HD adults.

The exact cause or causes of AD/HD are not conclusively known. However, evidence strongly suggests that, in many cases, the disorder is genetically transmitted and is caused by an imbalance or deficiency in certain chemicals in the brain that regulate the efficiency by which the brain controls behavior. Thus, AD/HD is seen as a "neurobiological disorder." There is currently little or no scientific data to suggest that environmental factors or dietary factors (e.g., food dyes, sugar, etc.) are the cause of AD/HD.

II. AD/HD and Adolescence

AD/HD individuals possess many traits that are unique and special. However, it is important to consider that the “normal” challenges of adolescence can be magnified with the AD/HD teenager. Impulsivity, attentional problems, procrastination, organizational difficulty, problems with self-monitoring, and variable performance all affect social and academic functioning. It is important to realize that, with assistance and support from parents, educators and other significant people in the AD/HD teenager’s life, the individual is not doomed to failure!

III. Raising the AD/HD Adolescent

It is essential to acknowledge that people (especially children and teens) grow from focusing on their strengths not their faults and/or weaknesses. This is central to the development of healthy self-concept. While not all AD/HD individuals have the following strengths, AD/HD people often demonstrate an incredible ability to be creative, have a high energy level, have an exceptional memory for remote incidents, and possess intuition and perceptiveness about other people and situations. It is essential that such traits be reinforced in the AD/HD teenager. Moreover, the parents/caregivers of AD/HD teenagers may find the following suggestions helpful in managing their child. Examine your parenting style, use negotiation tactics (i.e., do not dictate), identify and validate feelings, set reasonable expectations, practice forgiveness, monitor your own reactions, choose your battles carefully, be patient, watch for dwelling on the past, practice problem-solving strategies, and believe in your teenager so he/she can believe in him/herself.

IV. Effects on Social Functioning

Approximately, 50% to 80% of teenagers with AD/HD have significant interpersonal difficulties. Parents/caregivers should watch for rejection by peers. If the teenager lacks friends, spends a considerable amount of time alone, and shows little or no interest in social activities, this may indicate a need for assistance. Also, one must consider that popularity is closely related to self-concept for many individuals. Carefully listening to the teen and discussing these issues can validate their negative feelings and reduce feelings of isolation. Parents
can serve as role models for appropriate conversational skills including verbal and nonverbal responses. Psychological counseling can facilitate the development of social skills/interpersonal skills and anger management skills. An assessment of negative, self-defeating thoughts (e.g., “I am no good”) and the subsequent development of more adaptive, positive thinking may help improve social functioning as well.

V. Effects on Academic Functioning

The school environment means greater demands for the AD/HD individual. Success at school requires the ability to sit still, concentrate over sustained periods of time, cooperate with peers, etc. The school climate is not always “AD/HD-friendly.” Homework is one of the most challenging tasks for many AD/HD teens. Thus, it could be helpful to set specific time periods to do homework. Breaking the task into smaller, more manageable components can also be beneficial. Please see the attached handouts for specific strategies. In the event that AD/HD symptoms appear to be significantly affecting academic performance, then alternative interventions should be sought. Academic interventions for adolescents may include individual tutoring, daily progress reports, appointment of a “case manager,” and a home-school note system. If the individual still encounters difficulty, then Section 504 services and an accompanying accommodation plan should be considered. If further support is needed, then a referral to Committee on Special Education (CSE) should be made. An Individualized Education Plan (IEP), which is the basis for the child’s instruction (assuming he/she is classified {e.g., Other Health Impaired}), will state the specific needs of the individual and strategies to meet those needs in the school setting.

VI. Conclusion

Developmental experts agree that adolescence is one of the most erratic periods in an individual’s life as well as one of the most challenging. The difficulty that the teenager with AD/HD encounters can affect the individual, family, and others who work with the teen on a regular basis (i.e., teachers). The support that school personnel, mental health professionals, and most importantly, family members provide the AD/HD teenager is essential and can help the individual live a healthier and happier life.

Recommended Reading

