

ATTENTION DEFICIT DISORDER (ADHD)

I. Children and Adolescents:

Attention Deficit Hyperactivity Disorder or ADHD is the most prevalent neurobehavioral disorder of childhood, affecting up to 8% of children in the United States. A serious, long-lasting and often life-long disorder, ADHD may have a profound influence on the academic achievement, career success, emotional well-being, and life expectancy for those affected. Given the number of children challenged by ADHD, the mental health system is not capable of meeting the diagnostic or treatment needs for everyone with the diagnosis. For many children, the primary care physician or advanced practitioner is the principal treatment coordinator as well as the medication prescriber. While critics of the medical and psychological community have charged providers with widespread over diagnosis of ADHD, research suggests that the reality is more complex. Many cases of ADHD continue to go undiagnosed and untreated for many years, to the detriment of the individuals afflicted. At the same time, rushed diagnoses of ADHD, made without thorough assessments, screening tools, or collateral input are prone to inaccuracies and may result in unreliable diagnoses or inappropriate treatments choices. Practice guidelines may be helpful tools for ensuring that diagnostic techniques for ADHD are appropriate and consistent, and that the subsequent treatment plan is evidenced based and of high quality. (1)

Diagnosis:

Children ages 4-18 who present with *academic or behavioral problems* and symptoms of inattention, hyperactivity, or impulsivity should be evaluated. Parental reports may indicate disobedience, heightened sensitivity, low distress tolerance, and considerable delays/deficiency in executive functioning skills as compared to neurotypical peers. Referral is often first suggested by a school teacher, day care center, or a coach. While the reliability and validity of the concerns raised by other adults varies, these reports are usually reliable in establishing that the child's behavior is problematic as compared to that of the average child of the same age/developmental level. *Note: Boys may be more likely to be referred for evaluation, as they are more likely to present with high energy, psychomotor activation, aggressive behaviors, or other symptoms which prove more disruptive to a classroom environment than do ADHD symptoms in girls.*

Diagnosis should be made utilizing the criteria outlined in the *Diagnostic and Statistical Manual of Mental Disorders 5th Edition*, and supported by history and collateral input from parents, teachers, therapists, and caregivers (and documentation should establish impairment in more than 1 major setting). If the child is also experiencing academic difficulties, school-based testing may also be appropriate, and may provide additional support for the clinical assessment. The DSM-5 lists three presentations of ADHD—Predominantly Inattentive, Hyperactive-Impulsive and Combined. The symptoms for each are adapted and summarized below.

DSM 5 Criteria:

People with ADHD show a persistent pattern of inattention and/or hyperactivity–impulsivity that interferes with functioning or development:

Inattention: Six or more symptoms of inattention for children up to age 16, or five or more for adolescents 17 and older and adults; symptoms of inattention have been present for at least 6 months, and they are inappropriate for developmental level:

- Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or with other activities.
- Often has trouble holding attention on tasks or play activities.

- Often does not seem to listen when spoken to directly.
- Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (e.g., loses focus, side-tracked).
- Often has trouble organizing tasks and activities.
- Often avoids, dislikes, or is reluctant to do tasks that require mental effort over a long period of time (such as schoolwork or homework).
- Often loses things necessary for tasks and activities (e.g. school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses, mobile telephones).
- Is often easily distracted
- Is often forgetful in daily activities.

Hyperactivity and Impulsivity: Six or more symptoms of hyperactivity-impulsivity for children up to age 16, or five or more for adolescents 17 and older and adults; symptoms of hyperactivity-impulsivity have been present for at least 6 months to an extent that is disruptive and inappropriate for the person’s developmental level:

- Often fidgets with or taps hands or feet, or squirms in seat.
- Often leaves seat in situations where remaining seated is expected.
- Often runs about or climbs in situations where it is not appropriate (adolescents or adults may be limited to feeling restless).
- Often unable to play or take part in leisure activities quietly.
- Is often “on the go” acting as if “driven by a motor”.
- Often talks excessively.
- Often blurts out an answer before a question has been completed.
- Often has trouble waiting his/her turn.
- Often interrupts or intrudes on others (e.g., butts into conversations or games)

In addition, the following conditions must be met:

- Several inattentive or hyperactive-impulsive symptoms were present before age 12 years.
- Several symptoms are present in two or more settings (such as at home, school or work; with friends or relatives; in other activities).
- There is clear evidence that the symptoms interfere with, or reduce the quality of, social, school, or work functioning.
- The symptoms are not better explained by another mental disorder (such as a mood disorder, anxiety disorder, dissociative disorder, or a personality disorder). The symptoms do not happen only during the course of schizophrenia or another psychotic disorder.

Based on the types of symptoms, three kinds (presentations) of ADHD can occur:

1. Combined Presentation: if enough symptoms of both criteria inattention and hyperactivity-impulsivity were present for the past 6 months
2. Predominantly Inattentive Presentation: if enough symptoms of inattention, but not hyperactivity-impulsivity, were present for the past six months
3. Predominantly Hyperactive-Impulsive Presentation: if enough symptoms of hyperactivity-impulsivity, but not inattention, were present for the past six months. Because symptoms can change over time, the presentation may change over time as well.

Screening Tests:

The internationally referenced, well- validated, and most reliable screening criteria for ADHD remain those described within DSM-5. Changes to the diagnostic criteria from the DSM-IV included an increase to the age expectation by which ADHD symptoms are expected to first be present (this was previously age 7, now it is age 12). Also, as research findings have supported that ADHD can be reliably diagnosed in children of 4- 5 years old, the DSM-5 criteria support diagnoses in this age group.

For every child in whom ADHD is suspected, the provider should carefully *consider other conditions that may coexist with ADHD*, including emotional, developmental, and physical conditions. If the clinician suspects a developmental disorder, a developmental screening (ADOS testing) or evaluation by a developmental pediatrician may be in order. Similarly, if unfamiliar or disconcerting psychiatric symptoms are present, or if safety concerns are prominent, referral to mental health specialists is appropriate. (1)

Preschool Age:

Challenges in making a diagnosis in the preschool age group include limited collateral information. Younger children are often exposed to fewer adults apart from the parents. Further, the adults who provide this information may have less experience with or education about ADHD (for example, reports by daycare staff as opposed to school teachers, for example). To assist the primary care provider in establishing whether a diagnosis of ADHD is appropriate, a variety of behavioral rating scales, parental, and teacher questionnaires are available. These screening tools can be completed prior to or between appointments, are simple to review and to score, and can also be used to track progress and response to interventions. See "Resources" for suggested screening tools. (Note that in terms of objective screening questionnaires, *only the Conner's Comprehensive Behavior Rating Scales and the ADHD Rating Scale IV are validated in children under 6 years of age*) (2).

School-Age Children:

In the case that a diagnosis of ADHD is suspected in a child for whom school difficulties are also known to be prominent, it is prudent to determine whether school testing has been done. School-based testing is provided for by the school district as part of the district's responsibilities under U.S.C. § 794 (Section 504). (Section 504 require that schools provide for a "free appropriate public education" (FAPE) to each qualified student with a disability who is in the school district's jurisdiction, regardless of the nature or severity of the disability) (3)

School testing done or contracted by the school district assists the school in identifying the aids and services which will meet the student's individual educational needs regardless of the child's diagnoses or lack thereof. If a school has encouraged the parents to seek a medical evaluation, or if screening questionnaires have indicated that the child is struggling academically, it may be appropriate and prudent for the child's primary care provider to remind the school of the importance of this testing. A request or recommendation that this testing be pursued may be an effective tool for obtaining comprehensive supports and helping the child succeed. If school testing is done, to request copies of these records for the child's chart. These results may be helpful in clarifying the child's unique challenges and may offer a description of baseline level of function prior to psychological or psychiatric interactions or medication trials.

Adolescents:

In contrast to the preschool aged- cohort, adolescent patients will often have an abundance of teacher reports, owing to their many school courses. At the same time, parental reports may reflect less clarity about the nature of difficulties as parents typically are not spending as much time as involved with the adolescent as was the case in earlier years. Lastly, self-report obtained from the adolescent may be unreliable, as adolescent may tend to minimize their own problematic behaviors. It is important to consider other diagnosis which may account for the patient's presentation, especially if the symptoms appear to be new. Also, adolescents are more likely to have tried illicit drugs and alcohol than younger children or they may even be using regularly. Given the risks associated with the use of stimulant medications in combination with alcohol or benzodiazepines, as well as concerns about diversion of stimulant medication, it is recommended that adolescent patients be screened for drug and alcohol abuse. If substance abuse

is discovered to be coexistent with ADHD, deferral of stimulant treatment is recommended until acute substance abuse treatment is complete.

More on Testing and Diagnosis:

Some primary caregivers are hesitant to make an official diagnosis of ADHD. In some cases, this hesitation is due to the provider's lack of experience and hence assuredness about their diagnostic accuracy. In such cases, referral to a mental health specialist may be appropriate for diagnostic consultation and support, however, delays in initiating appropriate care should be avoided whenever possible. Other times, a provider may be hesitant to make the diagnosis due to concerns re: medico-legal liability especially given the likelihood that prescription of controlled substances is likely for those with the diagnosis. Some providers deal with these concerns by routinely referring all children with symptoms of ADHD to Neuropsychologists, Psychometric Psychologists for extensive batteries of neuropsychological, cognitive, or psychological testing. These testing sessions may require over 8-10 hours of the child's time and focus, require considerable energy and may cause cognitive fatigue. For some children, just taking these tests may prove stigmatizing, provoking, or worrisome. The DSM-5, in addition to boasting the best evidence to date for support their criteria for ADHD, also affords the best method for communication across clinicians and is well-established with third-party payers. (2) In the vast majority of cases of ADHD, psychological testing is neither necessary nor more reliable in making the diagnosis of ADHD. For children with generally straightforward symptoms of ADHD, such testing is often questioned by payers, and evaluation by a mental health specialist will often be suggested or requested prior to approval for involved testing.

Treating ADHD: (See Resource: Fact Sheet Medication Management)

The most appropriate treatment choices for ADHD are somewhat dependent upon the patient's age and developmental stage. In addition, the patient and parent preferences are highly relevant, as these preferences will influence which treatments they are likely to participate most readily in and will be most committed. For younger children, for example: while behavioral interventions can be quite effective and may be preferable to starting medication in those very young, these interventions require parent training, practice, and especially, consistency. For many families, implementing behavioral interventions is easier said than done. At the same time, in the youngest patients, referral to a qualified preschool program where the parents can receive education and be observed interacting with the child, may be quite helpful. In some cases, the child may qualify for enrollment in Early Childhood Special Education services through their school district. These services are another reasonable option. (2)

Behavioral intervention programs are based on classical models of Behavior Therapy utilizing clear, concise, and reliable positive reinforcers provided only when behavior approximates target behavior or goal.

In children under 6 yrs., behavioral interventions are recommended initially, with methylphenidate (a stimulant medication) suggested only if behavioral interventions prove ineffective or if implementation of these interventions proves unrealistic because of service availability or family circumstance. (4) This recommendation is consistent across the American Academy of Pediatrics as well as the American Association of Child and Adolescent Psychiatry. (5) (2)

For children ages 6 - 11, primary care clinicians are encouraged to prescribe FDA approved medications for ADHD symptoms (preferably stimulants, if tolerated) with or without behavioral interventions with the parents and or the teachers. Ideally, both medication and therapy are considered ideal, though combined approaches are often difficult to realize. The school should be actively involved in the development of an individualized education plan for the child, with academic accommodations appropriate to the child's challenges. In terms of medications, the evidence to support treatment with the stimulant medications (all approved stimulants) is well-established and robust, with the overall risk/benefit considered to be clearly supportive of treatment. For the other FDA-approved medications, specifically, the evidence is *sufficient but progressively weaker for atomoxetine, extended-release guanfacine, and extended-release clonidine*. (2) (6)

II. Adult ADHD

also see:

<https://chadd.org/wp-content/uploads/2018/05/Diagnosis.pdf>

<https://chadd.org/for-adults/living-with-adhd-a-lifespan-disorder/>

While it was once believed that most children would essentially outgrow the symptoms of ADHD, more recent research has definitively established that ADHD is a neurobiological disorder that affects individuals across the lifespan. Estimates of the prevalence of ADHD amongst adults vary, but given childhood prevalence, even conservative estimates suggest that affected individuals number in the many millions. (6)

One explanation for the belief that ADHD was largely outgrown is the observation that *many of the better-known childhood symptoms of ADHD do attenuate* (for example: hyperactivity, inability to sit still, or reactive impulsivity and aggression, such as suddenly taking a peer's toy). As individuals mature and learn adaptive ways of coping, some problematic behaviors become less prominent. By late adolescence or adulthood some symptoms may appear to be gone entirely in some individuals. (1) Nevertheless, many of these individuals will continue to meet diagnostic criteria for ADHD as defined by the DSM-5. In fact, neither hyperactivity or impulsivity is required for the diagnosis of ADHD in children or adults. A diagnosis of ADHD is determined by a clinician based upon the *number and severity of the symptoms*, the *duration of symptoms* and the degree to which these symptoms *cause impairment in various areas of life*. Per the criteria, some evidence of symptoms must have been present prior to the age 12. To establish a diagnosis in an adult, then, most clinicians will opt to review school records or (more often) will speak with the individual's parent or a healthcare provider familiar with the individual's longitudinal history.

The deficits caused by ADHD can result in significant hardships and remarkably heightened risk for a variety of egregious ailments. A brief sampling of some of these statistics is alarming for many. Consider:

- Recent follow-up studies of children with ADHD show that ADHD persists from childhood to adolescence in 50%–80% of cases, and into adulthood in 35%–65% of cases
- They are far less likely to enroll in a 4-year college.
- 15% hold a 4-year degree compared to 48% of the control group.
- 0.06% held a graduate degree compared to 5.4% of the control group.
- They are 11 times more likely to be unemployed and not in school.
- They are 4 times more likely to be in unskilled vs. clerical occupation, and 6 times more likely to be in unskilled vs. professional occupations.
- Teens and young adult drivers with ADHD have 2–8 times more collisions, citations, and suspended licenses than teens and young adults without ADHD

Treatment of Adults with ADHD:

Many of the treatment principles which underlie treatment of ADHD in children are unchanged in the adult population, but not all. In children and adolescents, we have a significant amount of research regarding the utility of medication treatment options. In adults, the available research is much less plentiful. The difficulties which cause some of the greatest challenges in adults appear to be in large part, attributable to disorders involving Executive

Functions. Examples of these difficulties include: poor communication and interpersonal skills, distractibility, disorganization and forgetfulness, procrastination and time management issues, and others. When medications are used in adults, the same general principles which apply to adolescents are endorsed. Screening for alcohol and substance abuse is important and should be confirmed by lab testing in those with a significant history of addiction or in those for whom there is a concern. In efforts to combat diversion, many states have developed systems to regulate stimulant prescriptions. In these states, prescribers may only write for stimulant prescriptions after checking the state database, a monitoring program which tracks all controlled substance prescriptions filled by patients within the state. These prescription monitoring programs may be helpful in identifying egregious examples of abuse or diversion, however they do not substitute for a provider's familiarity with their patient, their careful observations for changes in the patient's patterns or behaviors, nor can they substitute for the thoughtful, open-ended conversations between the practitioner and the patient.

While numerous studies have attempted to identify a standout psychostimulant medication, no medication has successfully distinguished itself. Most clinicians agree that the overall efficacy across the medications in this group are similar. Perhaps more important than which agent is chosen, the duration of action of a specific stimulant often underlies the choice of agent in ADHD. The choice is ultimately about timing the administration to achieve a maximal effect. While immediate release or short acting stimulant compounds are active for 3 -4 hours, the large variety of delayed release formulations may act anywhere from 6 – 14 hours. This great variation allows primary clinicians and their patients to choose a medication which is most likely to boost focus at the times most valuable for them. Long-acting medications still clear the system within a day, hence they are easily titrated, and adverse effects are uncommon. Long acting stimulants may carry less risk of abuse, as longer onset of action and longer duration medications tend to have less powerfully addicting effects, comparatively speaking.

While psychostimulants and other dopaminergic medications may effectively combat the symptoms of ADHD to some degree, they do not cure the underlying disorder and efforts to build skill sets to accommodate for these challenges may be particularly valuable for many adults. At the same time, one on one mental health counseling with a therapist is often rather long term in nature, eclectic as opposed to behaviorally targeted, time-consuming and expensive for patients. More importantly, perhaps, therapy is rarely offered in the setting in which the individual is struggling and where they find their symptoms to be most problematic. These challenges have limited the usefulness of individual therapy for ADHD in adults, however a more tailored approach to behavioral interventions is increasingly recognized for its convenience, short-term, goal – oriented focus, and considerably improved flexibility to work with patients in the native milieu, (either directly or virtually). This type of intervention is colloquially referred to as “coaching” and may or may not be offered by licensed mental health professionals. Instead of a focus on “typical topics” and goals for individual psychotherapy, ADHD coaches tend to keep their focus on the immediate or short term, and maintain specific targets such as time management, organizational or cleaning assistance, or improvement in the individual's performance at work or at school. Because coaches are not medically credentialed, coaching services are generally considered life-enhancing or vocational supports, and do not meet “medically necessary care” criteria, and individuals should exercise caution, as individual coaches are not health care professionals per se, and may not have certifications, licensure, or insurance. Upfront discussion of these topics early on may provide clarification and help to set expectations appropriately. Though not medical services per se, the encouraging experiences with coaching reported by individuals with ADHD suggest that these services may be a worthwhile investment for some individuals. (The success of coaching in adults suggests that these services might be particularly important for children, as well. The provision of coaching- like services for the ADHD child is likely to be very inconsistent. Such coaching or tutoring is most often determined by the school district, and subject to budgetary restraints).

Studies continue to allow primary care providers and patients to better understand and more effectively combat the symptoms of ADHD. To learn more and to download free printable resources for your office, please refer to the “Resources” section immediately following this guideline.

Provider Practice Guidelines:

[Guidelines for the Treatment of Children and Adolescents with ADHD](#)

[ADHD: Clinical Practice Guidelines for the Diagnosis, Evaluation, and Treatment of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents](#)

[ADHD and the Classroom- a resource:](#)

Screening Tools for Parents, Teachers, and Adults:

- [Parent-completed Child Behavior Checklist](#)
- [Teacher Report Form \(TRF\) of the Child Behavior Checklist](#)
- [Conners Parent and Teacher Rating Scales](#)
- [ADD-H: Comprehensive Teacher Rating Scale \(ACTeRS\)](#)
- [Emerging Screening Tool \(beta\) for Elementary Age](#)
- [Adult ADHD Self-Report Scale \(ASRS v1.1\)](#)

Resources and Fact Sheets:

1) ADHD Diagnosis: <https://chadd.org/wp-content/uploads/2018/05/Diagnosis.pdf>

2) ADHD Medications in Young Children; Medicaid Guidance:
<https://www.cdc.gov/ncbddd/adhd/documents/fact-sheet-adhd-medicaid-policies.pdf>

3) ADHD and Managing Medications: https://chadd.org/wp-content/uploads/2018/05/managing_medication.pdf

4) ADHD and Autism Spectrum Disorder:
<https://chadd.org/wp-content/uploads/2019/03/ADHD-and-Autism-Spectrum-Disorder.pdf>

5) ADHD and Coaching: <https://chadd.org/wp-content/uploads/2018/04/coaching-adults.pdf>

6) Parenting Training for ADHD (from CHADD): <https://chadd.org/parent-to-parent/>

7) CHADD Website (Children and Adults with Attention Deficit Disorder): <https://chadd.org/>

8) [Mayo Clinic on Diagnosis and Rx of Adult ADHD](#)

9) ADHD Across the Lifespan\ (infographic): https://chadd.org/wp-content/uploads/2018/11/ADHD_Across_Life_Span_infographic.pdf

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7. American Academy of Child and Adolescent Psychiatry. *Practice Parameter for the assessment and treatment of children and adolescents with attention-deficit/hyperactivity disorder (PDF) (AACAP - American Academy of Child and Adolescent Psychiatry*. s.l. : AACAP, Revised: 7/2007).