



Epidemiology

Rates of ADHD have been reported to be:

- **11 percent** of children ages 4 through 17 have been diagnosed
- about **3.8 percent** of adults

Diagnostic Criteria

At least 6 symptoms in either/both list(s) present for ≥ 6 months that is inconsistent with developmental level and negatively impacting social and

Inattention	Hyperactivity and impulsivity
Often fails to give close attention to details or makes careless mistakes	Often fidgets with or taps hands or feet or squirms in seat
Often has difficulty sustaining attention in tasks or play	Often leaves seat in situations when remaining in seat is expected
Often does not seem to listen when spoke to directly	Often runs about or climbs in situations where it is inappropriate
Often does not follow through on instructions and may fail to finish tasks	Often unable to play or engage in leisure activities quietly
Often has difficulty organizing tasks and activities	Is often “on the go”, acting as if “driven by a motor”
Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort	Often talks excessively
Often loses things necessary for tasks or activities	Often blurts out answer before a question has been completed
Is often easily distracted	Often has difficulty waiting his or her turn

DSM-5 changes in ADHD

1. Neuro developmental disorder
2. More example of behavior
3. Impairment in ≥ 2 situations, but more situations given
4. Age of onset < 12 years
5. Severity
6. Subtype = now presentation types

Clinical Evaluation

1. Interview with the parent or other caregivers
 - a. About each of 18 ADHD symptom in DSM 5
 - b. Symptom → duration , severity , frequency
 - c. Chronic course
 - d. Onset of symptom 8 during childhood
 - e. Determine in which setting (school, work, home)
2. Interview with the child
3. Interview with teachers and other educators
4. Observation
5. R/o DDx 8 comorbidity

Interview with parents

1. The age when symptoms first appeared
2. The progression of the symptoms
3. Impact of symptoms on the child and family
4. Severity of functioning difficulties in which settings
5. Family's current abilities to cope with circumstances

Interview with child

1. Inform about child perspective on school and friends
2. Clarify want the child from treatment
3. Child to ask questions and become comfortable with assessment
4. Clinician leaves what the child think causes those problems
5. Explore the child's emotions the concerns of their caregivers and teachers
6. Assess functioning - strengths - and limitations

Interview with teachers and other educators

- Severity of problems
- Follow - up
- Mett face - to face
- Phone or email

Assessment tools in ADHD diagnosis

Questioners
self report or
other report

Clinical
interview

Neuro
cognitive
tests

EEG





2. Vanderbilt assessment scale

3. Snap iv (Swanson, Nolan, and pelham)

4. ADHD RS

5. SDQ (strengths and difficulties questionnaire)

6. Barkly

7. Brown → executive function

8. ASRS IV (adult ADHD self report scale)

9. CAARS (conners adult ADHD rating scale)

10. Wender – u tah (wender – u tah rating scale)

8, 9, 10 adult ADHD screening

Clinical interview

- CAADID نیمه ساختار یافته
- DIVA ساختار یافته
- Standard clinical interview
- KSADS (ADHD diagnosis according to DSM IV or DSM V Criteria)
- DISC Diagnostic interview schedule for child

Neuro cognitive tests

- Conners CPT (Conners Continuous performance test)
- IVA CPT (integrate visual and auditory performance test)
- VOVA (test of variables of attention)
- CANTAB (Cambridge neuro-psychological test automated Battery)

EEG

- NEBA neuro psychiatric EEG – based assessment AID was FDA approval for an ADHD diagnosis in ages 6-17 years

Category	Tool	Domains Assessed	Method
	Conners CPT (Continuous Performance Test)	<ul style="list-style-type: none"> • Attention • Impulsivity • Sustained Attention • Vigilance 	<ul style="list-style-type: none"> • Computerized test
	IVA CPT (Integrated Visual and Auditory Continuous Performance Test)	<ul style="list-style-type: none"> • Auditory Response Control • Visual Response Control • Auditory Attention • Visual Attention • Auditory Sustained Attention • Visual sustained Attention 	<ul style="list-style-type: none"> • Computerized test
	TOVA (Test of Variables of Attention)	<ul style="list-style-type: none"> • Attention • Inhibitory control 	<ul style="list-style-type: none"> • Computerized test

Category	Tool	Domains Assessed	Method
	Conners Rating Scales <ul style="list-style-type: none"> • CPRS • CTRS • CRS • Conners 3 	<p>Note: Subscale names vary slightly between versions of the Conners Rating Scales, but include:</p> <p><i>ADHD-related scales</i></p> <ul style="list-style-type: none"> • Inattention • Hyperactivity/Impulsivity • Learning Problems • Executive Functioning • DSM Symptoms Scales • ADHD Index • Conners Global Index <p><i>Behavioral/emotional scales</i></p> <ul style="list-style-type: none"> • Defiance/Aggression • Peer Relations/Social Problems • Family Relations • Oppositional Defiant Disorder • Conduct Disorder • Cognitive Problems • Anxious-Shy • Perfectionism • Psychosomatic 	<ul style="list-style-type: none"> • Parent questionnaire • Teacher questionnaire • Adolescent questionnaire

Category	Tool	Domains Assessed	Method
	SNAP-IV (Swanson, Nolan and Pelham Revision)	<ul style="list-style-type: none"> • ADHD Predominantly Inattentive • ADHD Predominantly Hyperactive/Impulsive • ADHD Combined 	<ul style="list-style-type: none"> • Parent questionnaire • Teacher questionnaire
	DBDRS (Disruptive Behavior Disorder Rating Scale)	<ul style="list-style-type: none"> • ADHD Predominantly Inattentive • ADHD Predominantly Hyperactive/Impulsive • ADHD Combined • Oppositional Defiant Disorder • Conduct Disorder 	<ul style="list-style-type: none"> • Parent questionnaire • Teacher questionnaire
	ADHD-RS (ADHD Rating Scale)	<ul style="list-style-type: none"> • ADHD Predominantly Inattentive • ADHD Predominantly Hyperactive/Impulsive • ADHD Combined 	<ul style="list-style-type: none"> • Parent questionnaire • Teacher questionnaire

Category	Tool	Domains Assessed	Method
	SDQ (Strengths and Difficulties Questionnaire)	<ul style="list-style-type: none"> • Emotional symptoms • Conduct problems • Hyperactivity/inattention • Peer relationship problems • Prosocial behavior • Total difficulties 	<ul style="list-style-type: none"> • Parent questionnaire • Teacher questionnaire
	BRIEF (Behavior Rating Inventory of Executive Function)	<ul style="list-style-type: none"> • Behavioral Regulation Index (three scales) • Metacognition Index (five scales) • Global Executive Composite 	<ul style="list-style-type: none"> • Parent questionnaire • Teacher questionnaire
	CHEXI (Childhood Executive Functioning Inventory)	<ul style="list-style-type: none"> • Inhibition (inhibition and regulation) • Working Memory (working memory and planning) 	<ul style="list-style-type: none"> • Parent questionnaire • Teacher questionnaire
	ATTEX (Attention and Executive Function Rating Inventory)	<ul style="list-style-type: none"> • Distractibility • Impulsivity • Motor hyperactivity • Directing attention • Sustaining attention • Shifting attention • Initiative • Planning • Execution of action • Evaluation • Total score 	<ul style="list-style-type: none"> • Teacher questionnaire
Continuous Performance Tests			

Category	Tool	Domains Assessed	Method
	NICHQ (National Institute for Children's Health Quality) Vanderbilt Assessment Scale	<ul style="list-style-type: none"> • ADHD Predominantly Inattentive • ADHD Predominantly Hyperactive/Impulsive • ADHD Combined • Oppositional Defiant Disorder • Conduct Disorder • Anxiety/Depression 	<ul style="list-style-type: none"> • Parent questionnaire • Teacher questionnaire

Category	Tool	Domains Assessed	Method
	CANTAB (Cambridge Neuro-psychological Test Automated Battery) ^a	<ul style="list-style-type: none"> • General memory and learning, with subtests including: <ul style="list-style-type: none"> - Working memory - Executive functioning - Visual memory - Attention - Reaction time - Decision making - Response control 	<ul style="list-style-type: none"> • Computerized test

^a CANTAB description from personal communication with Cambridge Cognition Ltd. (January 2017).
 Abbreviations: ADHD=attention deficit hyperactivity disorder; CPRS=Conners Parent Rating Scale; CTE
 Manual of Mental Disorders

Table 6. Description of available tools for ADHD assessment

Category	Tool	Domains Assessed	Method
Interviews			
	Standard clinical interview	ADHD diagnosis according to DSM-IV or DSM-5 criteria	Parent and/or child interview
	K-SADS (Kiddie SADS)	ADHD diagnosis according to DSM-IV or DSM-5 criteria	Semi-structured diagnostic interview with parent and child
	DISC/DISC IV (Diagnostic Interview Schedule for Children)	ADHD diagnosis according to DSM-IV criteria	Structured diagnostic interview with parent and/or child
Rating Scales			