

Attentional Deficit and Hyperactivity Disorder (ADHD)

Learning Disabilities

A.A. 2015-2016

Criteria of ADHD

A. A persistent pattern of Inattention and/or hyperactivity/impulsivity that interferes with functioning or development, as characterized by (1) and/or (2):

1 Inattention: Six (or more) of the following symptoms have persisted for at least 6 months to a degree that is inconsistent with developmental level and that negatively impacts directly on social and academic/occupational activities.

Note: The symptoms are not solely a manifestation of oppositional behavior, defiance, hostility, or failure to understand tasks or instructions. For older adolescents and adults (age 17 and older), at least five symptoms are required.

- a) Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or during other activities (e.g. overlooks or misses details, work is inaccurate)
- b) Often has difficulty sustaining attention in tasks or play activities (e.g., has difficulty remaining focused during lectures, conversations or lengthy reading)
- c) Often does not seem to listen when spoken to directly (e.g., mind seems elsewhere, even in the absence of any obvious distraction).

- d) Often does not follow through on instructions and fail to finish schoolwork, chores, or duties in the workplace (e.g., starts tasks but quickly loses focus and is easily sidetracked).
- e) Often has difficulty organizing tasks and activities (e.g. difficulty managing sequential tasks; difficulty keeping materials and belongings in order, messy, disorganized work, has poor time management, fails to meet deadlines)
- f) Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (e.g., schoolwork or homework; for older adolescents and adults preparing reports, completing forms, rewing lengthy papers).
- g) Often loses things necessary for tasks or activities (e.g., school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses. mobile telephones)
- h) Is often easily distracted by extraneous stimuli (for older adolescents and adults may include unrelated thoughts).
- k) Is often forgetful in daily activities (e.g., doing chores, running errands: for older adolescents and adults returning calls, paying bills, keeping appointments).

2 Hyperactivity and impulsivity: Six (or more) of the following symptoms have persisted for at least 6 months to a degree that is inconsistent with developmental level and that negatively impacts directly on social and academic/occupational activities.

Note: The symptoms are not solely a manifestation of oppositional behavior, defiance, hostility, or failure to understand tasks or instructions. For older adolescents and adults (age 17 and older), at least five symptoms are required.

- a) Often fidgets with or taps hands or feet or squirms in seat.
- b) Often leaves seat in situations when remaining seated is expected (e.g., leaves his or her place in the classroom, in the office or other workplace, or in the other situations that require remaining in place)
- c) Often runs about or climbs in situations where it is inappropriate (in adolescent or adults may be limited to feeling restless)
- d) Often unable to play or engage in leisure activities quietly.
- e) Is often “on the go”, acting as if “driven by a motor” (e.g., is unable to be or uncomfortable being still for extended time, as in restaurants meetings; may be experienced by others as being restless or difficult to keep up with)

- f) Often talks excessively
- g) Often blurts out an answer before a question has been completed (e.g., completes people's sentences: cannot wait for turn in conversation)
- h) Often has difficulties waiting for his or her turn (e.g., while waiting in line)
- i) Often interrupts or intrudes on others (e.g., butts in to conversations, games, or activities; may start using other people's things without asking or receiving permission; for adolescents and adults, may intrude into or take over what others are doing).

B. Several inattentive or hyperactive-impulsive symptoms were presented prior to age 12 years.

C. Several inattentive or hyperactive-impulsive symptoms are present in two or more settings (e.g., at home, school, or work; with friends or relatives; in other activities).

D. There is clear evidence that the symptoms interfere with, or reduced the quality of, social, academic, or occupational functioning.

E. the symptoms do not occur exclusively during the course of schizophrenia or another psychotic disorder and are not better explained by another mental disorder (e.g., mood disorder, anxiety disorder etc.)

Specifications

Wether:

- **Combine** presentation: if both criterion A1 and A2 are met for the past three months.
- **Predominantly inattentive** presentation: if criterion A1 (inattention) is met but criterion A2 (hyperactivity-impulsivity) is not met in the past 6 months.
- **Predominantly hyperactive/impulsive** presentation: if criterion A2 (hyperactivity-impulsivity) is met but criterion A1 (inattention) is not met in the past 6 months.

If:

- **In partial remission**: when full criteria were previously met, fewer than the full criteria have been met for the past 6 months, and the symptoms still result in impairment in social, academic, or occupational functioning.

Specifications

Current severity:

- **Mild:** few, if any, symptoms in excess of those required to make the diagnosis are present, and symptoms result in no more than minor impairments in social or occupational functioning.
- **Moderate:** symptoms or functional impairment between mild and severe are present.
- **Severe:** many symptoms in excess of those required to make the diagnosis, or several symptoms that are particularly severe, are present, or the symptoms result in marked impairment in social or occupational functioning.

Prevalence and comorbidity

The prevalence is around the 5% in children.

Mild delays in language, motor, or social development are not specific to ADHD but often co-occur. Associated features may include low frustration tolerance, irritability or mood lability.

Even in the absence of a specific learning disorder, academic or work performance is often impaired. Inattentive behavior is associated with various underlying cognitive processes, and individuals with ADHD may exhibit cognitive problems on test of attention, executive functions, or memory, although these test are not sufficiently sensitive or specific to serve as diagnostic indices. By early adulthood, ADHD is associated with an increased risk of suicide attempt, primarily when comorbid with mood, conduct or substance use disorder.

BIA

- The test assesses specific problems like: hyperactivity, memory and attention deficit
- It is used for the diagnosis of ADHD in italian children between 5 and 13 years.
- 7 tasks
- 2 questionnaires



Test delle Ranette



- Sustained auditory and selective attention and capacity of motor inhibition
- 20 columns divided in 14 boxes
- Children is asked to listen two sounds:
 - **Go**: the frog jumps
 - **NO GO**: the frog doesn't jump

Each time the child listens the GO-sound, he has to mark only one box until he hears the NO GO-sound (1 GO sound → 1 Box).

The difficulty of this task is that the two sounds are the same for the first 208 ms and than the NO GO- sound changes.

Scoring: 1 point for each correct sequence.

Il test Go, no Go (I parte)

12 11 10

Le scale

UNCORRECT

NOME:

TAU – TEST DI ATTENZIONE UDITIVA

- Sustained auditory attention
- 10 sequences of sounds (9-15 tones)
- Child hears a sequence of sounds and he has to say how many they are

Scoring: 1 point for each correct answer.

Stroop numerico

- Inhibition of an automatic answer
- Children are asked to count how many items there are in each box.
 - **Baseline task:** 12 boxes and items are asterisks (*)
 - **Experimental task:** 75 boxes (35 first page + 40 second page) and items are numbers

The difficulty of the experimental task is that the child has to say how many items are in each box and not confusing with the identity of number presented (interference).

Scoring: 1 point for each interference error

(e.g.: 2 – 2 – 2 he says 2 but the correct answer is 3)

$$\text{Interference's time (tempo di interferenza)} = \frac{\text{Experimental time}}{75} - \frac{\text{baseline time}}{12}$$

Example - Stroop numerico

2 2 2	4 4	1 1 1 1	4	2 2 2 2 2	1 1
1	3 3 3	5 5	3 3 3 3	5 5 5	3
3 3	5	3 3 3 3 3	1 1	2	1 1 1
5 5 5	1 1 1 1 1	2	2 2 2	3 3	2 2
4 4 4 4 4	2 2 2 2	4 4	5 5 5 5 5	5	4 4 4 4 4
2 2	4	1 1 1	4 4 4 4	1 1 1 1 1	4 4 4

CAF – Completamento alternativo di frasi

- Verbal Inhibition and cognitive flexibility
- Children are asked to say a word that can be congruent (A-L phrases) or not (1-10 phrases) with the phrase that the examiner reads



semantic congruent word



alternative word

The phrases are presented in an alternative way.

Scoring: A – L phrases: 1 point for each correct answer
1 – 10 phrases: 0 point (**US**) uncongruent semantic word and strategy
1 point (**U**) uncongruent semantic word
2 points (**S**) congruent semantic word
3 points (**C**) correct word

TMSV – Test di memoria strategica verbale (strategic verbal memory task)

- Strategic memory and capacity of inhibition of unimportant informations
- Children are asked to read a list of words and remember the largest number of words presented for 120” .
In each list, the words can be semantically organized in 3 categories (Animals, fruits and objects).
In the list 2 and 3 the 50% of words are the same of the words presented in the previous lists.
- List 1**: words aren't semantically organized and the examiner doesn't give any help to child
- List 2**: words aren't semantically organized but the examiner tells to child that the words can be organized in categories
- List 3**: words are semantically organized and the examiner tells to child that the words can be organized in categories

TMSV – Test di memoria strategica verbale (strategic verbal memory task)

Scoring: List 1: 3 indexes

(TR) recalled words

(CL) cluster words (if child recalls two words that belong to the same category)

(Rip) repetitions (if child repeats a word two or more times)

List 2 and 3: 4 indexes



(TR) recalled words

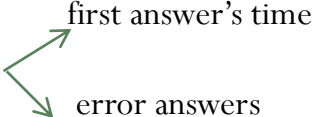
(CL) cluster words (if child recalls two words that belong to the same category)

(Rip) repetitions (if child repeats a word two or more times)

(I) intrusions (if child recalls a word that belong to a previous list but there isn't in the list presented)

MF 20 & MF 14

- Impulsive behaviours
- Children are asked to observe a picture and find the same picture among 6 items that are very similar to each others.
- Two types of the test:
 - **MF 14** for the yanger children (5-6 years)
 - **MF 20** for the older children (7-13 years)

Scoring: 2 indexes: 



CP (Continuous Performance)

- Sustained visual attention
- Children are asked to detect a target item:



- The difficulty increases progressively in the 3 pages: the space between the letters is gradually reduced

Scoring: 3 indexes

correct CP (FZB)

incorrect CP (e.g.: FZQ)

Forgotten (CPO)

Prova CP1

Cognome e Nome

Data

Cerca la sequenza di lettere FZB. Ogni volta che la incontri barrala.

Esempio:

B G A F Z A P R S F Z B I C Q A

Correct CP

Uncorrect CP

Forgotten CP

B	W	O	Y	F	Z	O	U	F	R	B	F	Z	B	K	T	E	I	P	D
A	M	Q	X	L	F	Z	A	Q	Z	A	F	U	J	F	Z	B	J	R	S
V	I	P	N	T	G	F	Z	B	W	C	H	N	R	K	F	Z	O	F	R
D	F	Z	B	Z	G	A	U	F	Z	B	N	L	Y	M	F	Z	X	A	S
W	N	F	K	F	Z	H	D	O	V	F	E	O	B	X	F	Z	B	L	J
E	H	E	P	I	A	H	Y	A	W	F	Z	Y	W	B	O	G	M	D	P
F	Z	B	F	Z	Q	I	V	X	M	L	F	Z	G	P	O	R	Q	F	U
G	Z	C	F	O	F	Z	B	V	F	C	F	Z	H	V	D	S	F	Z	B
G	J	D	Z	B	U	X	L	F	Z	B	D	G	M	R	V	I	K	A	N
A	W	F	Z	E	S	M	A	G	H	F	Z	B	Y	J	S	P	L	X	U
D	X	A	F	Z	B	K	F	I	O	F	Z	X	C	H	W	D	J	F	Z
W	T	Y	E	P	M	G	F	Z	B	I	N	Z	B	L	F	J	F	Z	B
T	M	U	R	K	L	T	F	Z	A	C	F	R	F	Z	B	C	J	P	Y
E	F	Z	B	K	H	D	S	P	Z	L	F	Z	S	K	V	U	F	P	Z
E	I	F	Z	B	I	P	O	F	M	Z	R	F	Z	B	L	B	X	N	U

Questionnaires: SDAI, SDAG, SDAB

- Impulsive behaviours and attention

• **SDAI** → Teachers

• **SDAG** → Parents

• **SDAB** → Children

Even numbers → hyperactivity index

Odd numbers → Attention index

COM

- Impulsive behaviours, attention and comorbidity
- For teachers and parents
- Scala Likert 0 (= never) – 3 (= always)
- Indexes observed:
 - **Tic**
 - **Anti Social behaviour**
 - **Oppositional Defiant disorder**
 - **Autistic Spectrum disorder**
 - **Depression**
 - **Anxiety**

Test delle ranette	Sustained auditory and selective attention and capacity of motor inhibition
TAU	Sustained auditory attention
Stroop numerico	Inhibition of an automatic answer
CAF	Verbal Inhibition and cognitive flexibility
TMSV	Strategic memory and capacity of inhibition of unimportant informations
MF 20 & MF14	Impulsive behaviours
CP	Sustained visual attention
SDAI SDAG SDAB	Impulsive behaviours and attention
COM	Impulsive behaviours and attention



Exercise: Test delle ranette