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# Attention deficit hyperactivity disorder

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M Maldonado

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# ADHD other nominations

- Hyperkinetic syndrome. International Classification
  - Pediatric disorder of self-regulation (DeGangi et al.)
  - “Minimal brain disorder” in previous classifications
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# DSMIV

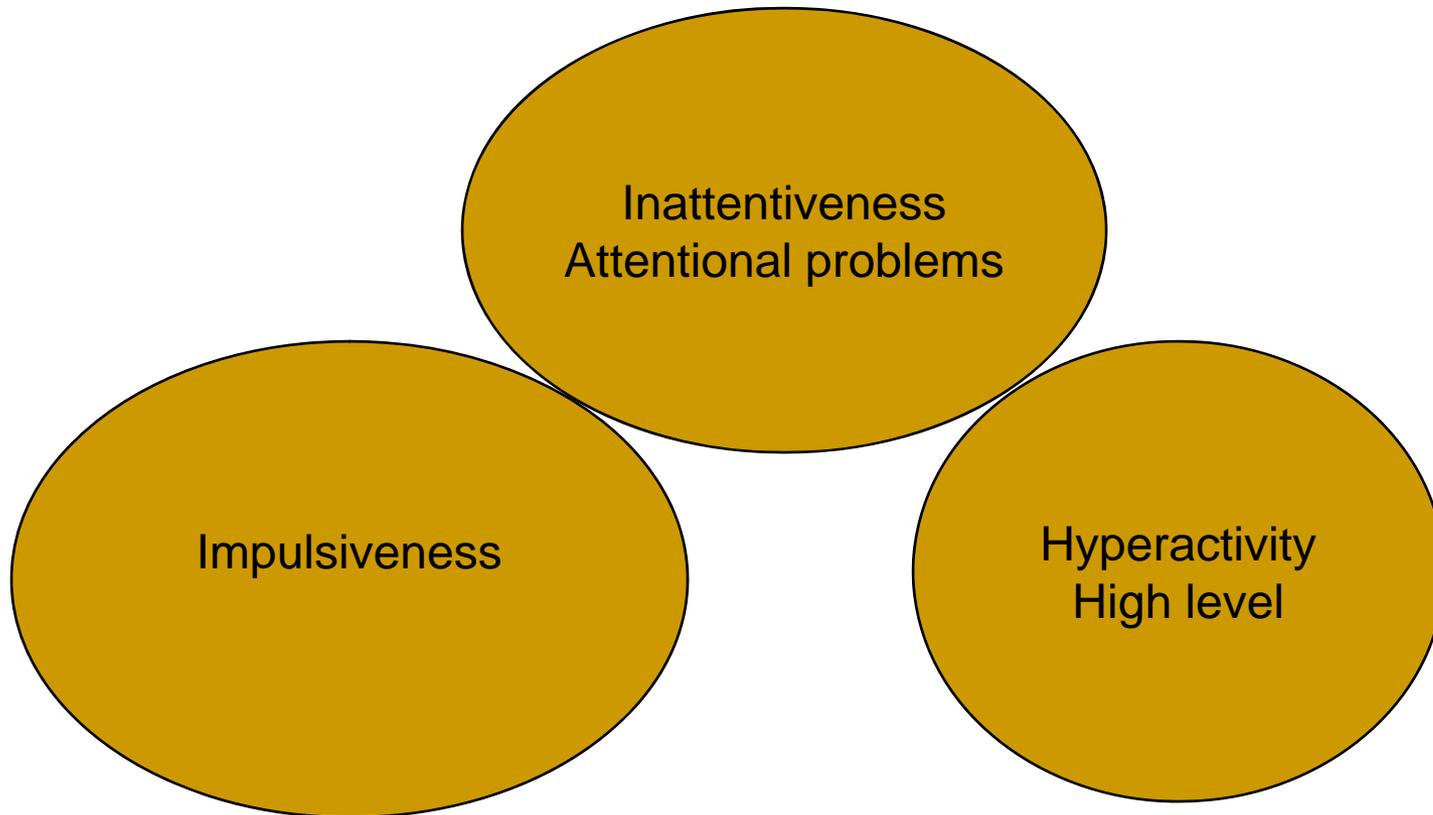
- Attention deficit hyperactivity disorder.  
Predominantly Inattentive type
- Attention deficit hyperactivity disorder.  
Predominantly hyperactive type

Attention deficit hyperactivity disorder.  
Combined type

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# Core symptoms



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# Additional symptoms

Problems with  
Executive functions

Learning difficulties

Mood regulation  
problems

Motor skills  
Problems

Sensory integration  
Difficulties

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# Inattentiveness

- Not paying attention to what is being said
  - Losing track of the conversation or lecture
  - Daydreaming while one should be concentrating
  - Difficulty staying on track in an activity
  - Often leaving something unfinished
  - Becoming easily bored with tasks
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# Inattentiveness

- Losing track of what one was doing
  - Tackling several projects without hardly finishing one
  - Start an activity and forget what one was going to do
  - Reading a page and not know what one just read
  - Having to read things several times to register the information
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# Inattentiveness

- Overlooks important things
  - Does not find things
  - Overlooks important details
  - Things that should be a routine are difficult for him (getting dressed, putting on shoes, brushing teeth). Needs constant reminders
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# Impulsiveness

- Reacts quickly without thinking
  - Does what he knows he should not do (hit when angry, speak when he should be quiet, etc)
  - Interrupts readily when he needs something or something comes to mind
  - Blurts out answers
  - Rushes thorough his work, sloppy work
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# Impulsiveness

- Not think before acting
  - Does things he regrets later
  - Poor control of angry responses despite knowing what he or she should do instead
  - Runs to what he wants without looking
  - “touches everything”
  - Has some difficulty with other children, takes their things, hard to take turns
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# Hyperactivity

- Moving constantly while sitting
  - Fidgeting most of the time
  - “has to have hands busy”
  - Runs rather than walks
  - Talks excessively and at the wrong time
  - Difficulty settling to sleep because of activity level
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# Hyperactivity

- A “bull in a china cabinet”
  - Difficulty sitting in one place
  - Noisy and disrupts others , tapping, moving feet and legs
  - In constant motion
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# Sensory integration problems

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# What is sensory integration?

- Ability of the brain to
  - **RECEIVE** information, input, sensory stimuli
  - **ORGANIZE, PROCESS** information in the brain
  - **PREPARE AND EXECUTE A RESPONSE** to stimulus, appropriate to the situation
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# What are disturbances in sensory integration?

- Problems in self-regulation
  - Self-modulation
  - Self-control
  - Pediatric disturbance of self-regulation, including attention deficit, emotional dyscontrol, hyperactivity, problems with transitions, etc.
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# What are S.I. Problems?

- Thought to have to do with biological vulnerabilities
  - These are mediated, and modified by environmental stimuli and
  - Interpersonal sensory world, emotional field, relationships, experiences.
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# Is there a common manifestation?

- Each child is unique
  - A “sensory profile” of each child, including sensitivities, ability to process and execution of responses.
  - Even a child varies depending on factors like motivation, stimulation, time of the day, previous stimulation, etc.
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# What are some of the manifestations in the school?

- The child is fidgety, moves constantly, oscillates, cannot sit still
  - The child seeks constant motion, on the chair or getting out of the chair
  - The child tends to “show off” in front of other people. Becomes irritable when others are around, e.g. “company”.
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# Manifestations....

- The child is thought to be clumsy
  - Frequently bumps into things, runs into the wall, falls from chair
  - Child steps on toys, “butts” other people, is too rough with other children
  - Hugs too hard, hits rather than touches
  - Loves to “body slam” and wrestle
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# Manifestations...

- Child is thought to be “lazy” due to low muscular tone
  - Child is slow to process or “warm up” and organize responses
  - Child shows little reaction to things, even exciting ones
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# Manifestations

- The child has problems with transitions
  - “ Marches to the beat of his own drummer”
  - Tends to have trouble modulating focus, I.e. not focused or over-focused to the exclusion of everything else
  - Can only do one thing at a time
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# Manifestations

- The child has poor handwriting
  - Complains that writing “hurts his hands”
  - Becomes tired too quickly
  - Takes a long time to write a small number of words or alternatively rushes through work and it is illegible
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# Manifestations...

- Child “hates to write”
  - Child “hates to draw”
  - Child “hates sports”
  - Child is never chosen in teams, because of motor clumsiness or problems in motor coordination
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# Manifestations

- Problems in regulation of arousal states
  - Hyper-aroused at the wrong time, e.g. at bedtime
  - Difficulty falling asleep or staying asleep
  - Difficulty sitting still to eat
  - Child is excessively selective and “picky “ to eat.
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# Manifestations..

- Child smells everything
  - Tends to mouth or chew objects, clothes, pens, pencils, etc
  - Tends to smell everything before eating
  - Is afraid of swings, being held, being carried or tossed in the air.
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# Manifestations, emotionally

- Things have to be “ just so”
  - Thought to be “ spoiled” because wants to “control everything”
  - Cannot be rushed, only has one speed
  - Child does not detect interpersonal signals easily, e.g. wearing out his welcome
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# Manifestations emotionally

- Child is very anxious
  - Feels uncertain, easily overwhelmed by things
  - Feels people are angry or bothered, or yelling
  - Feels scared of the future and places.
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# Manifestations, emotionally

- Child is thought to be controlling
  - Things are easily ruined for the child
  - One thing wrong and the whole thing is ruined
  - Cannot see the forest for the trees
  - Emotionally immature in general
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# Sensory seeking...

- Child has to touch everything
  - It is not enough to see an object
  - Child “bounces off the walls”
  - Makes noises, the louder the better
  - Moves constantly
  - Talks very loudly, interrupts, impulsive
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# Sensory avoiding (defensive)

- More interpersonal distance than usual
  - Avoids being held or touched as much as possible
  - Very sensitive to closeness with people
  - Does not so much play in groups
  - Prefers to observe than to participate
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# Mechanisms for sensory dysregulation

- Hypersensitivity to stimulation in sensory channels
  - Auditory                      Visual
  - Tactile                        Proprioceptive
  - Vestibular                    Olfactory
  - Gustatory                    Pain receptors
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# Hyposensitivity to stimulation

- Low registration or avoidance of stimulation in the areas of
  - Sound                      visual
  - Tactile                      textures
  - Movement (vestibular)
  - Taste, olfaction, pain receptors
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# Consequences

- Child appears “unmotivated” or discouraged.
  - Child is “not trying” hard enough
  - Effects on self-esteem
  - Child assumes he/she may be “dumb”
  - Child may think he is a failure or it is his/her fault.
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# Observations

- If child tries “hard enough” then performance improves, which “proves” it is voluntary
  - If child makes a great effort performance is better, but not in the regular state
  - Motivation is a crucial modifying factor
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# Recognition

- History of sensitivities in various sensory channels
  - Infancy manifestations, e.g. sleep problems, excessive crying, feeding problems , restlessness, allergies are a frequent complaint.
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# Recognition

- A pattern rather than transient manifestation
  - Interferes with functioning in everyday life
  - Difficulty in being content for a period of time
  - Interferes with “everyday functioning”
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# Recognition. Cultural factors

- Rushed pace of life
  - Multiple activities , multiple transitions
  - “dominated by schedule”
  - Expectations for calm, compliant and acceptable behavior
  - Little room for individual variations.
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# Problems in executive functions

- Feeling of passage of time.

Underestimates passage of time

Does not “budget time”

Overoptimistic about how quickly he can do things

Does not think of deadlines

Is not aware of what time it is, how much time he has to complete things, etc.

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# Problems in executive functions

- Difficulty initiating activities
- Difficulty with “automatic activities”



