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ADHD vs Postural Control

How does the child present in the classroom/at home

ADHD

- ❖ Fidgety
- ❖ Poor concentration
- ❖ Impulsive
- ❖ Restless
- ❖ Poor listening skills
- ❖ Gets up a lot
- ❖ Talks a lot
- ❖ Shouts out answers
- ❖ Loses things
- ❖ Cannot wait for his turn
- ❖ Makes unnecessary mistakes

Postural control

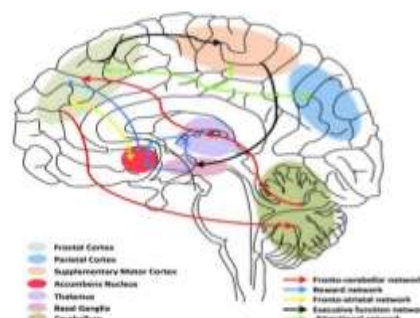
- ❖ Has trouble sitting still
- ❖ Want to move continuously
- ❖ Clumsy
- ❖ Slouches in chair
- ❖ Supports head
- ❖ Changes posture frequently
- ❖ Bumps into people/objects
- ❖ Chews objects
- ❖ Loves rough and tumble games
- ❖ Loves jumping
- ❖ Adrenaline junkie



Control centre

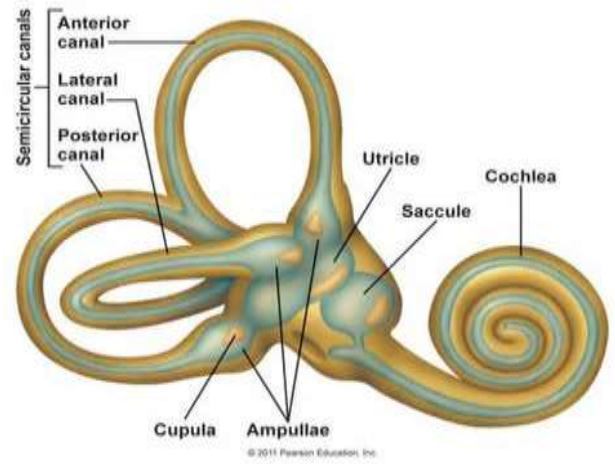
ADHD characteristics

- excessive inattention,
 - hyperactivity,
 - impulsivity,
- either alone or in combination
 Neuropsychological findings suggest that these behaviors result from underlying deficits in
- response inhibition
 - delay aversion
 - executive functioning
- presumed to be linked to dysfunction of *frontal-striatal-cerebellar circuits*





Postural system



Vestibular system

Definition

ADHD

The DSM-5™ defines ADHD as a

- persistent pattern of inattention and/or hyperactivity-impulsivity
- that interferes with functioning or development
- has symptoms presenting in two or more settings (e.g. at home, school, or work; with friends or relatives; in other activities)
- and negatively impacts directly on social, academic or occupational functioning.
- Several symptoms must have been present before age 12 years

Proprioception

The automatic feedback we get from our ligaments and joints regarding:

- The body's / body parts orientation
- Rate and timing of movements
- Amount of force our muscle is exerting
- How much and fast our muscle is stretching

Vestibular system

- The sensory system that provides the leading contribution to the sense of balance and spatial orientation for the purpose of coordinating movement with balance – Wikipedia
- The system is activated by movement of the head, vibration and gravity

Signs and symptoms

ADHD

Diagnostic criteria according to the DSMV

A. Either (1) or (2):

- (1) Inattention: six (or more) of the following symptoms of inattention have persisted for at least six months to a degree that is maladaptive and inconsistent with developmental level:
 - (a) Often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
 - (b) Often has difficulty sustaining attention in tasks or play activities
 - (c) Often does not seem to listen when spoken to directly
 - (d) Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)
 - (e) Often has difficulties organizing tasks and activities
 - (f) Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
 - (g) Often loses things necessary for tasks or activities (e.g. school assignments, pencils, books or tools)
 - (h) Is often easily distracted by extraneous stimuli
 - (i) Is often forgetful in daily activities

- (2) Hyperactivity-impulsivity: Six (or more) of the following symptoms of hyperactivity-impulsivity have persisted for at least six months to a degree that is maladaptive and inconsistent with developmental level:

Hyperactivity

- (a) Often fidgets with hands or feet or squirms in seat
- (b) Often leaves seat in classroom or in other situations in which remaining seated is expected
- (c) Often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feeling of restlessness)
- (d) Often has difficulty playing or engaging in leisure activities quietly
- (e) Is often 'on the go' or often acts as if 'driven by a motor'
- (f) Often talks excessively

Impulsivity

- (g) Often blurts out answers to questions before the questions have been completed
 - (h) Often has difficulty awaiting turn
 - (i) Often interrupts or intrudes on others (e.g. butts into conversations or games)
- B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age 7 years.
- C. Some impairment from the symptoms is present in two or more settings (e.g. at school, work, and at home)
- D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.
- E. They symptoms do not occur exclusively during the course of a pervasive developmental disorder, schizophrenia, or other psychotic disorder, and are not better accounted for by another mental disorder.

Proprioception

- **Over-responsive**
 - Avoids weight-bearing activities
 - Picky eater
 - Doesn't like to move/be moved
- **Under-responsive**
 - Low muscle tone
 - Breaks objects easily
 - Presses hard with the pencil on the paper while drawing
 - Let's items fall while holding it
 - Untidy writing
 - Breaks delicate objects
 - Hurts friends easily
- **Sensory-seeking** (looks like hyperactive behaviour)
 - Deliberately bumps into objects/people
 - Sucks/bites objects
 - Loves rough and tumble games
 - Grinds teeth
 - Loves jumping
 - Prefers tight clothes/accessories



Vestibular system

- **Over-responsive**
 - Dislikes swinging/spinning/sliding
 - Moves slowly
 - No risk-taking behaviour
 - Uncomfortable when moving e.g. escalator/elevators
 - Appears clumsy
- **Under-responsive**
 - Doesn't get dizzy when swinging
 - Poor protective extension in arms and legs
- **Sensory-seeking** (looks like hyperactive behaviour)
 - Can't sit still
 - Craves intense movement



Adrenaline junkie

➤ **Gravitational insecurity**

Fear of falling

Fearful of heights

Anxious when feet leave the ground

Fearful when head is not in the upright position

Avoids new positions/postures

Moves slowly and carefully

Treatment

ADHD

- Medication prescribed by a paediatric neurologist / psychiatrist
- Occupational therapy – delays which have been caused by not focusing in class
- Low GI diet
- 1 hour of physical exercise daily
- Play therapy: poor self-esteem issues/depression because of labelling

Postural control

- Occupational therapy addressing the proprioceptive and vestibular system
- Paediatric physiotherapy addressing the vestibular system
- (I prefer referring kids under 2 to a paediatric physio)

