

ADHD: Attention Deficit Hyperactivity Disorder

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Learning Objectives

CLASSIFICATION

What it
looks
like.

IMPLICATIONS

Effects
On
Life

TREATMENT

Ways
Of
Treating

WHAT IT LOOKS LIKE

INATTENTIVE TYPE

- Careless Mistakes
- Difficulty Sustaining Attention in tasks/play.
- Does not listen when spoken to directly
- Difficulty following instructions
- Difficulty organizing tasks/activities
- Loses items necessary for tasks/activities
- Avoids tasks requiring sustained mental effort
- Easily distracted by extraneous stimuli
- Often forgetful in daily activities



WHAT IT LOOKS LIKE

HYPERACTIVE IMPULSIVE TYPE



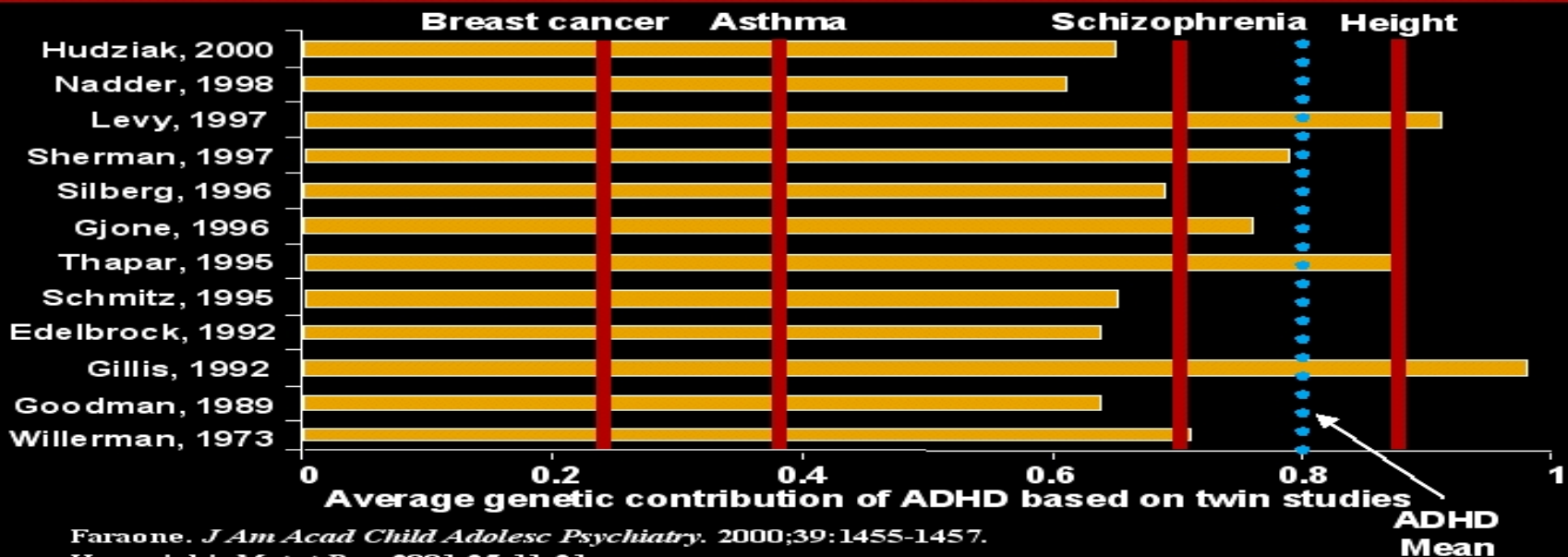
- Fidgets
- Leaves seat
- Runs or climbs excessively (or restlessness)
- Difficulty engaging in leisure activities quietly
- “On the go” or “driven by a motor”
- Talks excessively
- Blurts out answers before question is completed
- Difficulty waiting turn
- Interrupts or intrudes on others



WHAT IT LOOKS LIKE: GENETICS

Highly Heritable condition:

Twin Studies Show ADHD Is a Genetic Disorder



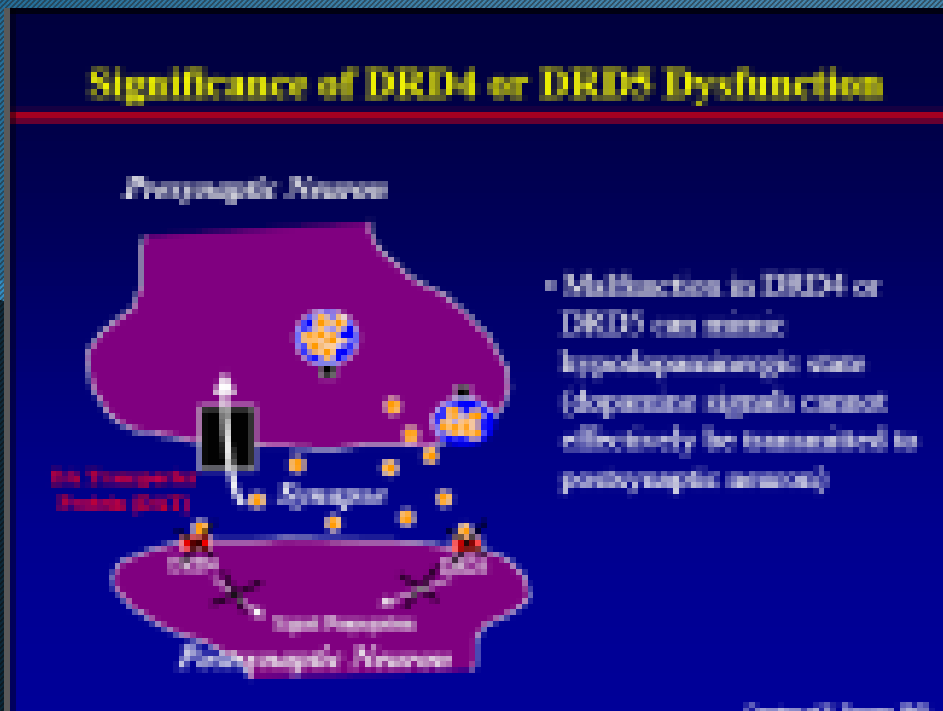
Faraone. *J Am Acad Child Adolesc Psychiatry*. 2000;39:1455-1457.

Hemminki. *Mutat Res*. 2001;25:11-21.

Palmer. *Eur Resp J*. 2001;17:696-702.

WHAT IT LOOKS LIKE: STRUCTURAL DIFFERENCES

- Smaller brain volumes in several regions (cingulate and cortex)
- Smaller total cerebral and cerebellar volumes.
- Higher re-absorption of dopamine out of the synapse and back into the neuronal cell – shorter period of action.



NUMBERS: WHO GETS IT?

- 3-5% of school-age children have symptoms of ADHD
- Greater % of boys with ADHD have hyperactive type.
- Greater % of girls with ADHD have inattentive type.

WHAT IT LOOKS LIKE IN THE CLASSROOM

- Inattention may come across as willful ignoring of adults or daydreaming.
- Impulsive behavior may come across as “acting out” or attention-seeking.

EXAMPLES

A-Angela: Quiet student. Not a behavior problem. Said by her teacher to be 'lost in a fog' most of the time. Has low grades.

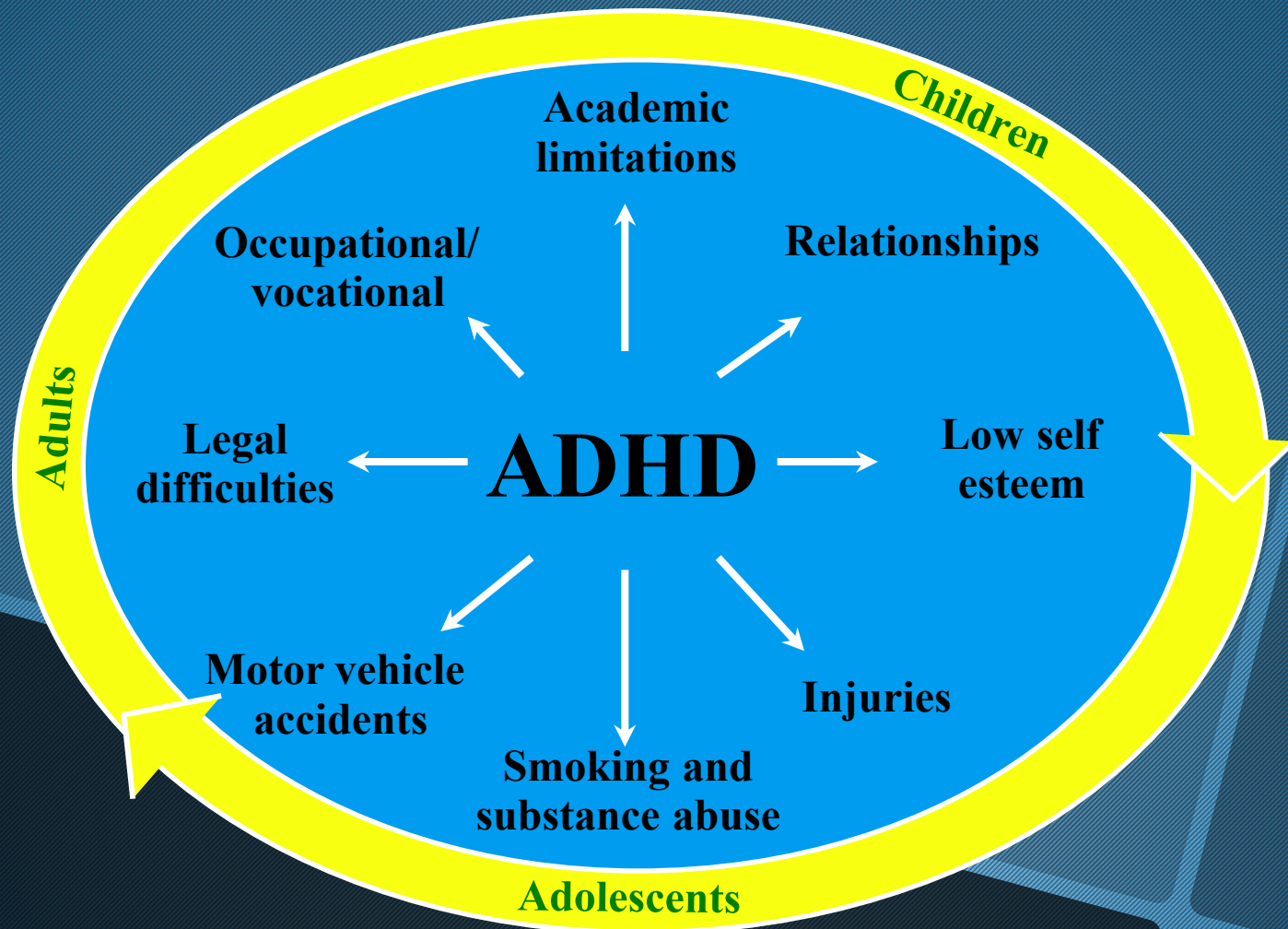
(Inattentive Type)

INATTENTIVE

STUDENT B-Benny: Is always the center of attention. Will blurt out answers in class without raising his hand, whether he knows the correct answer or not! Fidgets, squirms, and taps his pencil loud enough to distract students around him. When the teacher assesses Kenny one-on-one, he shows that he can do grade-level work. (Hyperactive-Impulsive Type)

INATTENTIVE

IMPLICATIONS: EFFECTS ON LIFE



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- $\geq 84\%$ of children with ADHD demonstrate psychopathology as adults
- Adolescents w/ADHD Rx w/stimulants have lower rates of substance abuse than untreated adolescents w/ADHD
- Educational impairments
- Employment problems
- Greater sexual-reproductive risks
- Greater motor vehicle risks

OTHER INTERVENTIONS

- Provide attention breaks: Contract with students brief attention breaks to engage in a preferred activity each time they have completed a certain amount of work.
- Transition quickly between educational activities to avoid “dead time.” - Attention is less likely to wander.
- Give quick overview of planned activities for the day or instructional period. - This gives a mental schedule of learning activities and the amount of time set for each activity.
- Keep responses brief and business-like. – Avoids sarcasm or negative reprimands that can then trigger defiant behavior.
- Treat with dignity.

WAYS OF TREATING

Medication:

- * Stimulants based on:

Amphetamines

Methylphenidate

- * Non-stimulants:

Strattera

Clonidine / Guanfacine

**** More frequent and higher dosing led to greater responses.**

WAYS OF TREATING: MULTIMODAL TREATMENT of ADHD (MTA) STUDY, 1999

- Behavioral therapies are effective, but not as much as carefully monitored medication with monthly follow-up.
- Children in combination treatment ended up taking lower doses of medication than children in the medication-only group.

MEDICATION EFFECTS

- Study took place over 14 months and involved 579 children with Combined Type.
- Up to 4% may have side effects severe enough to stop medication.
- Adverse effects included loss of appetite, sleep problems, crying spells, and repetitive movements.
- Children on medication tended to grow an average of ~2cm less in comparison to children only doing behavioral therapy.