



UNDERSTANDING ADHD

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Learning Objectives

1. Know neuroanatomic structures and circuitries involved in ADHD.
2. Explain neurobiological differences between ADHD subtypes.
3. Identify helpful tools and resources that assist in accurately diagnosing ADHD.
4. Increased awareness of community resources that are available for patients and families.

DR. THOMAS ADMINISTERS TESTS TO DETERMINE ADHD AND EXECUTIVE FUNCTION DEFICITS. SHE HAS NO OTHER FINANCIAL RELATIONSHIPS TO DISCLOSE.

WHAT IS IT?

A neurobehavioral disorder
that begins during
childhood and frequently
persists into adulthood.

CLINICAL PHENOTYPE

Short Attention Span

Overactivity

Impulsivity

COMMON SUBTYPES



Primarily Inattentive
Primarily Hyperactive-Impulsive
Combination

IT IMPACTS



Persistence of effort
Delayed gratification
Inhibition
Ability to “learn from experience”

AS WELL AS...



Mental calculation speed
Self-talk
Verbal fluency
Use of strategies

ADULTS WITH ADHD

In the US:

4.4% aged 18-44 diagnosed with ADHD

More men (5.4%) than women (3.2%)

Caucasian/AA > Latino

Globally:

Persistent (childhood) adult ADHD - 2.58%

Symptomatic (new dx) adult ADHD - 6.76%

WHAT CAUSES ADHD?



Is it Inherited?

Is it Acquired?

CAN BE INHERITED



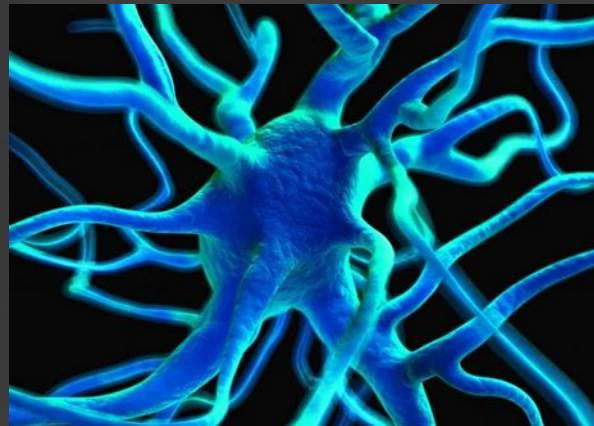
CAN BE ACQUIRED

Prematurity/Birth Complications

Maternal Smoking

Toxic exposure

Brain injury



CAN BE UNCOVERED IN ADULTHOOD

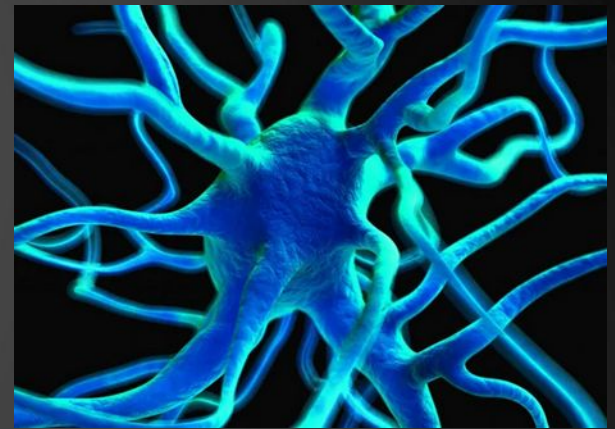


NEUROANATOMY



- Default mode network
- Anterior cingulate
- Reduced Total Brain Volume (kids)
- Corpus callosum
- Cortices (prefrontal, temporal, parietal, basal ganglia/caudate)
- Delayed cortical maturation

NEUROBIOLOGICAL DIFFERENCES



ADHD, Combined

- Front driven
- Dorsal system
- Psychostimulants

ADHD, primarily inattentive

- Rear Driven
- Ventral system
- NorE Reuptake inhibitors

DIAGNOSING ADHD IN ADULTS

DIAGNOSING ADULTS:

- Were they symptomatic before age 12?
- Do they now have 5 symptoms of inattention, and/or
- 5 symptoms of hyperactivity-impulsivity?
- Are their symptoms present in two or more settings?
- Is it causing a significant problem in their life?

WHAT DO THESE HAVE IN COMMON?

- Depression
- Oppositionality or willful choice
- Anxiety Disorder
- Learning Disability
- Tourette disorder
- Fatigue
- Sleep problems
- Stress or PTSD
- Language disorder
- Head injury
- Neurological disorder

... AND THESE?

- Poor social history
- Lead poisoning
- Hearing/auditory impairment
- Physical/sexual abuse
- Obsessive Compulsive Disorder
- Intellectual precocity/impairment
- Dementia
- Family style
- Poor job fit

THEY ARE
ALL
MISTAKEN
FOR ADHD.



OBTAIN A COMPREHENSIVE CLINICAL HISTORY

TO INCLUDE:

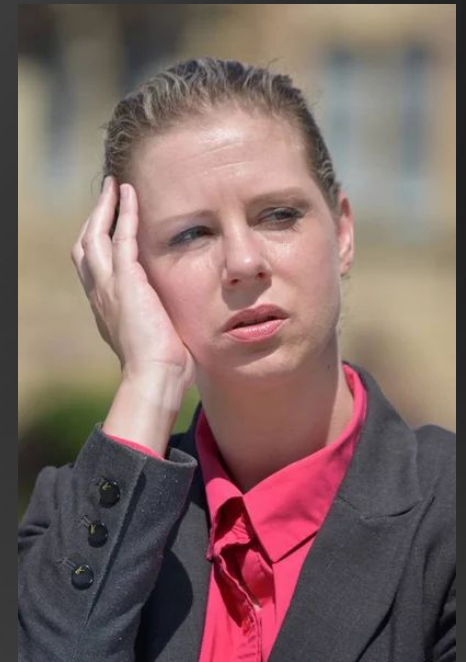
- Neurological
- Psychiatric
- Educational
- Work history
- Trauma
- Present health
- Mental status
- Sleep quality
- Family relationships
- Family medical
- Trauma
- Social supports

CONSIDER ADDING:

- Beck Anxiety Inventory (Pearson Assessments)
- Beck Depression Inventory - 2 (Pearson Assessments)
- PHQ-9 (web)
- Yale-Brown OCD Scale (web)
- Adult ADHD Self-Report Scale (ASRS-v1.1) Symptom Checklist (web)

DIAGNOSING ADHD CAN BE COMPLICATED.

ADHD has a more complex set of cognitive, motor and behavioral and emotional symptoms at the endophenotypic level than is represented by the DSM-based symptom lists.



**WITHOUT A CAREFUL
EVALUATION, ALMOST
ANYTHING THAT SENDS
SOMEONE OFF THE RAILS
CAN LOOK LIKE ADHD**

TOO COMPLICATED HISTORY OR PRESENTATION?



Standardized testing will clarify the nature and degree of attention problems and can identify/rule out the presence of other conditions

WHAT DO TESTS MEASURE?



- Sustained attention
- Working memory
- Planning
- Flexibility
- Decision-making
- Visual-Spatial reasoning
- Language reasoning
- Impulse control
- Freedom from distractibility
- Learning and memory
- Underlying mood/personality issues

HELPFUL RESOURCES

www.CHADD.org – ADHD/local chapter is

Portland Metro CHADD

www.Nimh.nih.gov- topical library

Organizational and Time Management training

Cognitive behavioral therapy

Neurofeedback (possibly)

Support groups

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- Rubia, et al. (1999). Hypofrontality in ADHD during Higher-Order Motor Control: A Study with Functional MRI. *American Journal of Psychiatry*, 156:891-896
- Song P, Zha M, Yang Q, Zhang Y, Li X, Rudan I; Global Health Epidemiology Reference Group (GHERG). The prevalence of adult attention-deficit hyperactivity disorder: A global systematic review and meta-analysis. *J Glob Health* 2021;11:04009

THAT'S IT!

