

# ADHD vs BPAD

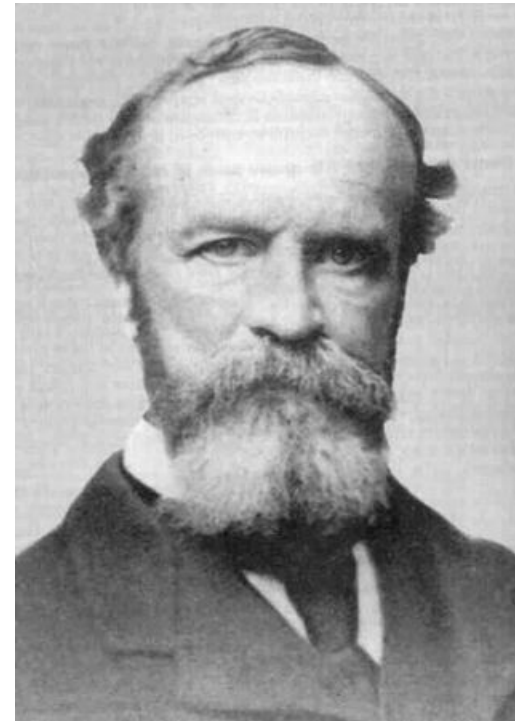
A Common Diagnostic Challenge

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# History of ADHD

- William James (1890)  
“There is a normal type of character, for example, in which impulses seem to discharge so promptly into movements that inhibitions get no time to arise. These are the ‘dare devil’ and mercurial temperaments overflowing with animation and fizzling with talk.”



# What is ADHD?

ADHD is a genetic, neurobiological disorder that affects one's ability to regulate impulse control, motor activity, and attentiveness (i.e. a disorder of executive function).

## Cognitive Process of Attention:

1. Detecting a stimulus (focusing).
2. Processing the detected information.
3. Sustaining attention to the relevant stimulus.
4. Inhibiting involuntary shifting (distractibility).
5. Organizing a response to the stimulus.

*The core problem in ADHD seems to be with response inhibition*

## ADHD – Disproven Theories

- Bad parenting - still widely believed
- Defiance/willfulness - also widely believed
- Moral defect - due to co-morbid CD
- Poor diet - can cause ADHD-like sx and worsen sx, but actually rare in modern society
- Allergies/sensitivities - mimics, doesn't cause
- Brain damage - causes small percentage
- Toxic exposure (lead, etc.) - rare cause

## What is BPAD?

BPAD is a genetic, neurobiological disorder of unstable energy and activity levels with associated cognitive and executive dysfunction most likely due to the disruption of the circadian sleep/wake cycle.

The diagnosis of BPAD requires at least one episode of mania or hypomania (no depressive episodes are necessary).

Mania is defined as a discrete episode lasting days to weeks of increased energy, decreased need for sleep, pressured speech (may not be rapid), grandiosity, hyper-sexuality, flight of ideas/racing thoughts and impaired judgment.

# Epidemiology of ADHD and BPAD

- **Prevalence Estimates of ADHD**

- 3-5% DSM-IV estimates (APA, 1994)
- 1.7 - 17.8% (Elia et al. 1999)
- 3 - 6% (Goldman et al. 1998)
- 4 - 12% (Brown et al., 2001)

- **Prevalence Estimates of BPAD**

- 1-2% in BPAD Type I
- 0.5 -1% in BPAD Type II

## ADHD vs BPAD – Genetics/Genomics

HERITABILITY – Do ADHD and BPAD have genetic components?

- Twin studies show higher concordance rates in MZ (identical) twins than in DZ (fraternal) twins (e.g., Stevenson, 1992; Gilger, Pennington, and DeFries, 1992)
  - Average heritability is .80 for twin studies (Faraone 1996)
- Gilger, Pennington, and DeFries (1992): if one twin was diagnosed with ADHD, the concordance for ADHD was 81% in MZ twins and 29% in DZ twins
- Heritability in BPAD is estimated at 70% (multiple studies).

# DEVELOPMENTAL COURSE OF ADHD

## Infants

- more active in utero
- more sleeping and feeding difficulties
- increased colic and crying
- more difficult temperaments
- associated with maternal cigarette and etoh use, low birth weight and brain injuries in utero



# DEVELOPMENTAL COURSE OF ADHD

## Preschool

- mean age of onset for H type is 4.21 years
- mean age of onset for C type is 4.88 years
- difficulty sitting still and being read to, noncompliance, temper tantrums
- parents state they need to child-proof the home, must provide more supervision, have difficulties with babysitters and day care settings
- treatment focuses on prevention of injury and decreasing impulsive aggression

## DEVELOPMENTAL COURSE OF ADHD

### School Age

- school accentuates problems: high rates of off-task behaviors, noncompliance, temper tantrums
- at risk for learning/academic problems: 3x more likely to be retained, often children retained as “immature”
- poor social skills; at risk for social rejection
- hyperactive types (98%) and combined types (82%) usually meet criteria and are impaired by age 7yo
- By late childhood, 30-50% develop sx of conduct disorder such as fighting, stealing, truancy

## DEVELOPMENTAL COURSE OF ADHD

### Adolescence

- 50-70% continue to have poor attention, impulse control, although hyperactivity diminishes
- many inattentive types (?20-30%?) may not become impaired and met criteria until middle school
- 30% drop out of high school compared to 10% for normal controls; 5% of ADHD students go to college vs 41% of normal controls
- increased risk for car accidents, substance abuse, juvenile delinquency
- 25-35% of ADHD children will be referred to juvenile court at least one time

## DEVELOPMENTAL COURSE OF ADHD

### Adulthood

- poor time management, disorganized, may avoid tasks requiring sustained attention, difficulty starting/completing tasks, easily bored
- frequently stays late to complete work or takes much longer than peers to complete work
- impulsively quit jobs and end relationships
- lower SES than unaffected siblings
- low self-esteem; social problems due to frequent interruptions, not listening, being unreliable, etc.
- increased risk for smoking (78%), arrested (2x), divorced (2x), unemployed (3x), STD (4x), suspended driver's license (5x)

## ADHD - Quick Screen for Inattention

- Fails to pay close attention to details
- Makes careless mistakes in work or school
- Difficulty sustaining attention
- Doesn't seem to listen
- Difficulty finishing task because of distractibility
- Difficulty with organization
- Avoids/dislikes tasks that require sustained mental effort
- Loses things
- Easily distractible
- Forgetful

## ADHD – Quick Screen for Hyperactivity/Impulsivity

*Six or more of the following:*

### *Hyperactivity*

- Fidgets with hands or feet or squirms in seat
- Motor restlessness, often runs about or climbs excessively
- Difficulty playing or engaging in activities quietly
- “on the go” or acts as if “driven by a motor”
- Talks excessively

### *Impulsivity*

- Blurts out answers
- Difficulty waiting turn
- Interrupts or intrudes on others

## ADHD – Final Criteria for Diagnosis

### Symptoms:

- were/are present (at least to some degree) before age 7
- result in clear, clinically significant impairment in social, academic, or occupational functioning.
- result in impairment in two or more settings.
- have persisted for at least 6 months.
- have been present to a degree that is maladaptive and inconsistent with developmental levels.
- do not occur exclusively during the course of a PDD, schizophrenia, or other psychotic disorder
- are not better accounted for by another mental disorder.

## Features of BPAD

- BPAD typically starts by young adulthood and depressive episodes may precede the first manic/hypomanic episode.
- Children usually only have hypomanic episodes, which can last for weeks, especially if they are on antidepressants or stimulants.
- Full manic episodes don't usually occur until after puberty.
- Earlier onset of BPAD is associated with strong genetic loading.
- Psychotic symptoms are strongly associated with BPAD in children and may decrease through adolescence until early adulthood.



## Distinguishing ADHD and BPAD

- BPAD has decreased need for sleep (stays up late and gets up early), while ADHD has difficulty falling asleep only (hard to wake up).
- BPAD has hypersexuality (even in childhood), which causes changes in sexual orientation, while ADHD has impulsive promiscuity
- BPAD has delusional grandiosity, while ADHD has narcissism associated with ODD and conduct disorder features.
- BPAD has psychotic features, especially hallucinations, but ADHD never has psychotic symptoms (ADHD is common in prodromal CPS)
- **BPAD is episodic in nature, while ADHD is constant.**

## Why are ADHD and BPAD diagnosed together?

- BPAD is an extremely difficult diagnosis to make in children because it doesn't start to evolve into the adult form until after puberty.
- Aggression is difficult to treat and a BPAD diagnosis justifies the use of antipsychotics and mood stabilizers which help aggression.
- Partially and improperly treated BPAD (AD w/mood stabilizer) frequently result in a sustained hypomanic episodes that strongly resemble ADHD.
- Sloppy diagnosis followed by mixing pharmacologic treatments, ie. “shotgunning” leads to vague and confusing presentations.
- Poor diagnosis in research studies due to limited accuracy of diagnostic instruments have encouraged comorbid diagnosis of ADHD and BPAD.

## ADHD Comorbidity vs Mimicry

- ADHD and ODD/CD are highly comorbid, but many children with ODD/CD don't have ADHD
- ADHD and PTSD are moderately comorbid; PTSD can look like ADHD, but isn't present in every setting
- ADHD and sub use are moderately comorbid, but pt needs to be clean to accurately diagnose ADHD
- ADHD is highly comorbid in Asperger's, moderate in Autism
- In the rare cases of comorbid ADHD and BPAD, the BPAD must be fully treated first and the ADHD can't be treated with stimulants.