

Attention Deficit Hyperactivity Disorder (ADHD)

BY MARK FABER M.D.

PREVALENCE & STATISTICS

- 6-8% of all children have ADHD (CDC Statistical Data)
- Age of onset:
 - 7 years old (Prior DSM-IV)
 - 12 years old (Current DSM-V)
- If a child has ADHD, the chances that one parent has ADHD is 50%
- When looking at 3 children in kindergarten with ADHD, by the time they graduate high school:
 - 1 in 3 will typically grow out of their ADHD
 - 2 in 3 will continue to have symptoms into adulthood
 - As a result, 4-5% of all adults have ADHD
 - As children grow older, hyperactivity diminishes, impulsivity shifts to impatience, and distractibility persists

SYMPTOMS

- Trouble with attention and focus
 - Planning
 - Organization
 - Task completion (executive functioning in brain)
- Motor Restlessness
 - Fidgety
 - Restlessness
- Impulsivity
 - Acting before thinking

NOTE: Symptoms would have to be present in multiple settings and must impact negatively on functioning

DIAGNOSIS

- Child Diagnosis Components
 - Parent and teacher Connors Ratings
 - Student input
- Adult Diagnosis Components
 - Thorough history from individual including (to the extent possible) early school history
 - Old school report cards if available, especially if they include teacher comments relating to attention, focus, and behavioral issues
 - Input from family member who knew the individual as a child; if possible, parent if still living
 - Input from a significant other in the person's life (ie. friend, mate)
 - Completion of Adult ADHD Rating Scale

TREATMENT

- Treatment of ADHD addresses decrease in chemical messengers in frontal part of brain including norepinephrine and dopamine
 - Non-Stimulant Medications
 - Intuniv
 - Effective for impulsivity and hyperactivity
 - Somewhat helpful for attention and focus
 - Strattera
 - Addresses all 3 symptom areas but has less robust response than other treatment options
 - Stimulant Medications (Long-acting)
 - Concerta (12 hr duration)
 - Vyvanse (12 hr duration)
 - Adderall XR (10-12 hr duration)
 - Focalin XR (8 hr duration)

SIDE EFFECTS AND RISK FACTORS

- Side effects of stimulant medication may include:
 - Decreased appetite
 - Headache
 - Stomach upset
- Risk Factors
 - Slowing rate of growth
 - NOTE: the end point in terms of height is felt to be within $\frac{1}{2}$ inch or 1 inch of anticipated height without stimulant medication
 - Cardiac Concerns
 - NOTE: Cardiology screening would be reasonable before starting medication if there is a history of structural heart defect in the individual, a family history of sudden cardiac death at young age, or symptoms related to the heart in the past including blackouts, chest pain, or palpitations

OUTCOME

- Overall, children and adolescents who are treated with medication do better in terms of overall functioning than those who are not treated with medication
- Using any 1 stimulant medication generally results in a 70% success rate; once 2 stimulant medications are attempted, the success rate is 85%
- With an absence of pharmacological treatment there is a greater future risk of:
 - Excessive substance use
 - Accidents
 - Injuries
 - Difficulties with relationships
 - Difficulties with jobs

CO-MORBID CONDITIONS WITH ADHD

- 2/3 of children with ADHD have co-morbidity including:
 - Delayed Sleep Phase
 - Disruptive behavior
 - Anxiety
 - Depression
 - Additional Mood Disorders
 - Learning Disorders
- Other associated conditions with ADHD include:
 - OCD
 - Tic Disorders

TREATMENT: CO-MORBID CONDITIONS

- Sometimes the medication used to treat ADHD has negative effects on co-morbid conditions
 - Stimulant medication treating ADHD can make OCD worse
 - Stimulant medication treatment can also exacerbate tics
- Delayed Sleep Phase, or a tendency to fall asleep late and arise late the next day, may be addressed with 1 mg of melatonin at 6 pm
- Co-morbid conditions are very effectively treated with 4 key types of non-pharmacological interventions:
 - Behavioral
 - Psychological
 - Educational
 - Social

ADHD VS. SLEEP DISORDERS

- Other sleep disorders that manifest like ADHD include:
 - Sleep Apnea (snoring and pauses in breathing during sleep)
 - Periodic Limb Movements/Restless Leg Syndrome