ADHD: TRANSITION FROM CHILDHOOD TO ADULTHOOD

"ADHD IS CHARACTERIZED BY A PATTERN OF BEHAVIOR, PRESENT IN MULTIPLE SETTINGS, THAT CAN RESULT IN PERFORMANCE ISSUES IN SOCIAL, EDUCATIONAL, OR WORK SETTINGS."
“Received wisdom over the years has been that ADHD has been a disorder of childhood whose symptoms lesson over time...

Consequently little attention was paid to the possibility that it might continue into adulthood.”

(Journal of the Royal Society of Medicine, 2004)
“Although there is a trend towards amelioration of symptoms, a substantial proportion continue to have at least one disabling symptom in adolescence and young adulthood.”

- ~30-70% of children with ADHD continue to have symptoms in adulthood
- 1-7% of adults experience ADHD symptoms
- ADHD does not fade at a specific age
- Reported reduction in symptoms with advancing age may be explained by acquisition of cognitive strategies to ameliorate features
■ Combination of severe inattention, hyperactivity and impulsivity

■ Significant impairment across multiple settings

■ Symptoms must be present prior to age of 12 yo
  ▪ DSM-IV – 7 yo

■ Children must present with 6 symptoms vs. older adolescents/adults (> 17 yrs) must have 5 symptoms
NEUROBIOLOGY

- Not completely understood
- Genetic factors
- Imbalances in dopaminergic and noradrenergic systems
- The Prefrontal Hypothesis
- Perinatal exposures
NEUROBIOLOGY

- **CT/MRI**
  - Structural differences
    - Smaller volumes in frontal cortex, cerebellum, and subcortical structures
    - Decrease in volume of corpus callosum

- **fMRI studies**
  - Hypofunctioning dorsal anterior cingulate cortex
  - Subnormal metabolism in premotor and superior frontal cortex
ADHD in ~ 5% of children and 2.5% of adults

Almost 66% of individuals diagnosed as children with ADHD report at least 1 ADHD symptom causing clinically significant impairment during adulthood

ADHD in adults more common in males
Symptoms must be:
- Present since childhood
- Pervasive
- Cause functional impairment

Rating scales in adults include:
- Adult ADD Evaluation Scale (A-ADDES)
- Brown Attention Deficit Disorder Scales
- Attention Deficit Scales for Adults
Trends in Adults

- Motoric hyperactivity less obvious

- Difficulties with restlessness, inattention, and poor planning persist

- Impulsivity may remain problematic even when hyperactivity has diminished
  - Socially inappropriate behavior

- Subtle symptoms

- Marked inattention, distractibility, organizational difficulties, poor efficiency, appear hectic, problems with prioritizing
<table>
<thead>
<tr>
<th>Symptom</th>
<th>Children</th>
<th>Adults</th>
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<tbody>
<tr>
<td>Inattention</td>
<td>Short attention span, unmotivated, difficulty following directions in school, can't listen for long, can't remember, everything half finished in home &amp; school</td>
<td>Poor concentration at work, daydreaming, forgetfulness, problematic for college students, rarely sits through TV show, trouble listening to conversation</td>
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<tr>
<td>Impulsivity</td>
<td>Difficulty delaying gratification, low frustration threshold, blurts things out/interrupts, reckless, acts before things, frequent driving accidents*</td>
<td>Poor tolerance to frustration, easy loss of temper, exceptional impatience, makes decisions without thinking, little reflection</td>
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<tr>
<td>Hyperactivity</td>
<td>Fidgety, restless, overtalkative, impaired coordination, poor handwriting</td>
<td>Fidgety, restlessness, dislike being inactive, can't relax, forced immobility produces anxiety</td>
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### SYMPTOMS: CHILDREN VS. ADULTS

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<td>Emotionality, temper &amp; mood</td>
<td>Labile moods, dysphoric to overexcited, disruptive disorders, antisocial problems, short fuse</td>
<td>Similar lability as seen in children, mood shifts, spontaneous roller coaster &quot;ups&quot; are reduced adults but &quot;downs&quot; persist, always seem irritable, anger provoked by stimulus</td>
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<tr>
<td>Stress Intolerance</td>
<td>Difficulty staying with things under pressure, less tolerant of low-arousal tasks, may be an optimal arousal level</td>
<td>Overreactive to normal stress or pressure, inappropriate response to ordinary demands, can't handle things out of ordinary, describes self as &quot;stressed out&quot;, &quot;hassled&quot;</td>
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Goldstein & Goldstein (1998) and Teeter (1998)
IMPACTS OF ADHD ON ADULT LIFE: LAW

- Risky behaviors
- Speeding violations
- Suspended drivers licenses
- MVAs
- Crimes
- Arrests
EDUCATION

- More difficulty in school
- Elevated absenteeism
- Greater risk of suspension or expulsion
- 3x more likely to be retained a grade
- Score lower on tests of reading achievement
- Less likely to complete high school
- Only 20% attend college and fewer graduate
EMPLOYMENT

- Occupational achievement is lower
- Increased risk of chronic conflict with work peers
- Lower socioeconomic status
- More frequent job changes
- Fired from more jobs
- Higher risk of homelessness
SOCIAL SKILLS

- May exhibit socially inappropriate behavior
- Difficulty keeping friends, increased conflict
- Lesser quality of romantic relationships
- Disputes with partners/spouses
- More likely to have had multiple marriages
- More likely to become parents at an early age
Increased risk of negative outcomes

Exercise less

Smoke more

Suffer more medical problems

Utilize health care at far higher rate

Risky sexual behavior

More MVAs, more driving violations
COMORBIDITIES

- Substance Abuse
- Anxiety
- Depression
- Antisocial personality traits
In 2004, only 15 controlled studies of stimulants had been reported in adults, with over a hundred in children with ADHD who were treated with stimulants exhibited improved school outcomes, lower rates of absenteeism and grade retention, with modest increases in reading achievement scores.

Medication use for ADHD in adults has increased markedly in US (90% from 2002 to 2005) with adults receiving 1/3 of all prescriptions (mostly stimulants and antidepressants)
CURRENT ADULT TREATMENT

- **Stimulants** (Methylphenidate)
  - More cardiovascular risks in adults than in children
- **Atomoxetine** (Strattera, SNRI) is approved for adults
- **Clonidine** (Alpha-2 agonist)
- **Anti-depressants** (TCA)

- Long-acting stimulants are most effective treatment, however some experts recommend trial non-stimulant agent first

- Recommend combined medication and psychosocial treatment approach
FACTORS AFFECTING OUTCOME

Aggression
Less self-control
Emotional lability
Childhood defiance
Parental psychopathology
Learning disability
Lower intellect

Intact household,
Above poverty level
Consistent parenting style
Available to their children -->
Most powerful variable of predicting good outcome
WHEN TO TRANSITION CARE?

- What is the role of the parent and young adult in providing decision-making?
- How do we as clinicians better manage treatment in ADHD affected adults?
- What systems should be available for consistent follow-up into adulthood?
REFERENCES

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- Fact Sheet: Attention Deficit/Hyperactivity Disorder. American Psychiatric Association, 2013
- www.uptodate.com - Adult attention deficit hyperactivity disorder
- Medscape - ADHD - Perspectives from Child to Adult
THANK YOU!