

Update on  
Attention Deficit/Hyperactivity  
Disorder

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Which one of the following is **NOT** part of the AAP criteria for the diagnosis of ADHD?

- A) Family history
- B) Assessment for comorbid conditions
- C) Parent surveys
- D) Teacher surveys
- E) Matching criteria from the Diagnostic and Statical Manual of Mental Disorders (DSM-IV)

Which one of the following is  
**NOT** part of the AAP criteria for  
the diagnosis of ADHD?

- A) Family history\*: yet as many as 50% of fathers (hyperactive) also have; mothers also (inattentive)
- B) Assessment for comorbid conditions: 25% have learning disability; 15% have mood disorder; 20% have conduct disorder
- C) Parent surveys: need to document dysfunction
- D) Teacher surveys: need to document dysfunction in more than one setting
- E) Matching criteria from the DSM-IV: mandatory for definitive diagnosis

# ADHD

- Use the ICSI Clinical Algorithm to make the diagnosis and follow-up decisions:

# ADHD Rating Scales

- Conners: CRS-R
- IOWA-Conners
- SNAP-IV
- SKAMP
- SWAN
- ADHD RS-IV
- BASC Monitor
- Wender Utah
- Burk's

# How Good Are the Screens for ADHD?

- Conners Rating Scale-Revised
  - Parent (best): 94% specificity, 92% sensitivity
  - Teacher: 91% specificity, 78% sensitivity
  - Often two parents or two teachers or a parent and a teacher won't agree
- BUT: Test-retest (6-8 week) reliability
  - Parent: 0.13-0.78
  - Teacher: 0.47-0.88

# Do Primary Care Physicians Use AAP ADHD Guidelines?

1374 surveys → 824 returned (60%)

91.5% pediatricians knew AAP guidelines

59.8% family physicians knew AAP guidelines

([www.aap.org](http://www.aap.org)) or ICSI guidelines

([www.guideline.gov](http://www.guideline.gov))

25.8% used all 4 diagnostic components in the guidelines: DSM criteria, parent surveys, teacher surveys, assessment for co-existing conditions

# Non-Recommended Tests Still Used by PCPs

- Continuous performances testing
- Neuroimaging
- Labs tests: TSH, iron level, lead level

# Comorbidities in ADHD

50-70% have a comorbid condition:

- 30% oppositional defiant disorder
- 25% anxiety disorder
- 25% psychosomatic complaints
- 20% learning disorder
- 15% mood disorder

Also many associated medical issues: tics, seizure disorder, etc.

# Which Treatment Is Best for ADHD?

- 540 children with ADHD for 24 months
- Medication alone was superior to all other treatments and equivalent or superior to any combination
- Behavior management was inferior to medication
- Although no improvement in performance was found with combined medication and behavior therapy, parents liked the addition of behavior therapy.

# Treatment of ADHD

- 81.3% prescribed medications
- 53.4% prescribed behavior therapy
- 53.1% saw 3 or 4 times a year
- Many: no accessible mental health resources
- Many: insurance limits

# Available Drugs for ADHD

- Methylphenidate: reg-5,10,20 mg; ER-10, 20, 30, and 18, 27, 36, 54 mg; SR-20 mg.
- Dexmethylphenidate: reg-2.5, 5, 10 mg.
- Dextroamphetamine: reg-5,10 mg; ER-5,10, 15 mg.
- Dextroamphetamine + amphetamine: reg-5, 7.5, 10, 12.5, 15, 20, 30 mg; ER-5, 10, 15, 20, 25, 30 mg.
- Atomoxetine: ER-10, 18, 25, 40, 60 mg
- Others: bupropion, tricyclics, guanfacine, etc.

# ADHD Treatment

- Drug trial:
  - Methylphenidate: initial 0.3mg/kg/dose (or 2.5-5 mg/dose) at breakfast and lunch. Saturday is a good day to start. Increase 0.1 mg/kg/dose/week to max of 1-2 mg/kg/day (or 60 mg). Concerta: start 18 mg/day. Max 54 mg/day.
  - Atomoxetine: 0.5 mg/kg/day. Max 1.4 mg/kg/day (or 100 mg)
  - Dextroamphetamine: 2-5 y.o. = 2.5 mg/day;  $\geq 6$  y.o. = 5 mg/day. Max 40 mg/day.

# Is Once Daily Atomoxetine (Strattera) Effective for ADHD?

- 197 ADHD sufferers; age 6 to 12 years
- Once daily atomoxetine benefits almost all patients, providing nearly 24 hour improvement.
- GI side effects (appetite loss, abdominal pain, nausea, etc.) are common
- Start slowly but go to at least 1.3 mg/kg/day
- Safe to give with stimulants

# Severe Drug Side Effects

- Concerta: recent reports of suicidal thoughts, hallucinations and violent behavior (follow-up reports are that all methylphenidate products may do the same)
- Atomoxetine: reports of fatal liver damage
- Adderall XR: 2/10/05 Health Canada (like FDA) suspended sale due to sudden death

# Does Diet Have Any Effect in ADHD?

- 397 three year olds:
  - 4 week double-blinded, crossover study, off all food coloring and sodium benzoate
  - 2 wks on a drink with both, 2 weeks on a drink with neither

Researchers: no difference in behavior

Parents: children calmer on drink with no food coloring/preservatives.

# Which one of the following items about teenage ADHD is true?

- A) Stimulant treatment of ADHD leads to an increased incidence of later substance abuse.
- B) 25% of unmedicated ADHD patients practice substance abuse.
- C) Comorbidity in ADHD increases substance abuse at least 5 fold.
- D) Those treated with stimulant drugs commonly abuse their prescribed agents.

# Does Stimulant Treatment for ADHD Increase the Likelihood of Later Substance Abuse?

- 140 persons with ADHD vs. 120 controls at least age 15 years
- ADHD patients did not abuse stimulants
- Stimulant use appeared to be protective. Drug abuse was found in
  - 75% of unmedicated ADHD patients
  - 25% of medicated ADHD patients
  - 20% of controls
- Comorbidity increased substance abuse 5 to 13 fold (C correct)

# Adolescents with ADHD

- Driving: 2 to 4 times more likely to have MVA
- Accidents are due to inattention not sleepiness
- Accidents occur largely at night

J Nerv Ment Dis 2000; 188:230-234

- 3 times more likely to incur injuries of any sort

Pediatr 1998; 102:1415-1421

# Teenage Driving with ADHD

- Auto accidents worse between 8 and 11 PM
- Should teenage drivers all be treated with controlled-released products or redosed prior to night time driving?
- Should adults with ADHD be treated prior to driving?

# Adult ADHD: What is the Risk?

- Most sources say 60% of childhood ADHD persists into adulthood.
- 4-12 % of children have ADHD so 2.4-7.2% of adults should have it, too.
- Neither Cecil's nor Harrison's list ADHD in their indices.
- How many adults do you see with this diagnosis? (Internists don't see children so don't often make the diagnosis and may not recognize ADHD when it arrives.)

# Adult ADHD

- McCormick LH. Southern Med J, 2004; 97: 823-6.
    - 73 ADHD children in a primary care office, ages 6 to 15 years
    - ONLY 4 (5.5%) had ADHD as adults
    - 54 (80%) had no symptoms
- Does ADHD disappear?

# Adult ADHD

- Childhood onset: retrospective data are useful—old report cards, interviews with parents, etc.
- Symptoms: restless, distractibility, anxiety, impulsivity
- Impairment due to symptoms in at least two settings
- Adults appear to respond to the same medications

# Important Points about ADHD

- Chronic condition affecting around 7% of children and some adults
- Strict attention to diagnostic criteria is required
- Look for comorbidities
- Team approach: child, parents, physician, school personnel, psychologist, behavioral therapist
- Medication is a cornerstone of treatment
- Behavior therapy may help some
- Set targets; reassess if targets are unmet
- Reevaluate periodically 3 to 4 times a year at minimum