Modafinil in ADHD (adapted from review by Pliszka, 2006)

- Double blind, placebo controlled trial
- 190 patients, ages 6-17 years
- 7 week trial, 2:1 randomization assignment to modafinil or placebo
- Dose: < 30 kg: 340 mg
  - 30kg or heavier: 425 mg-fixed titration

Modafinil in ADHD*

- Submission to FDA in 2006 for Pediatric and Adult ADHD indication with new trade name, “Sparlon”, and 2 additional positive studies
  - Rejected due to safety concerns over possible Stevens-Johnson syndrome in 3 pediatric and 5 adult patients

Adult ADHD

- Still regarded as "controversial", despite presence of continued morbidity in 50% or more of teens transitioning to young adulthood

- Diagnosis is primarily clinical
  - Useful tools include Connors Adult ADHD Rating Scales (CAARS), and Wender-Reimherr Adult ADD Scale (WRAADS)
  - Self-assessment, Adult ADHD Self Report Scale (NYU)
    - http://www.med.nyu.edu/psych/assets/adhdscreen18.pdf
  - DSM is only partially useful
    - Valid for children and teens only
    - Some items irrelevant for adults : "runs/climbs excessively; difficulty playing quietly"
    - Adult dx "relies" on ADHD NOS, or "Residual type"

Adult ADHD (McGough & Barkley, 2004)

- Shortcomings of DSM-IV TR criteria: Adult ADHD is classified as ADHD NOS in DSM-IV TR; Criteria do not take "additional major life settings" into account which may produce impairment yet would not be evident in children
  - General functioning within the larger organized community (e.g., participating in government, cooperating with others, abiding by laws, driving)
  - Financial management (e.g., banking, establishing and using credit, forming contracts)
  - Child rearing (providing protection, sustenance, financial and social support, appropriate education, etc.)
  - Marital functioning
  - Routine health maintenance activities

Adult ADHD

- Laboratory-based measures in the diagnosis of ADHD
  - SPECT, fMRI, CPT, PET useful currently *for research purposes only*

- *ADHD remains a clinical diagnosis* that is best determined through careful history taking, adherence to well-described clinical criteria, and training in the differential diagnosis of adult disorders (McGough & Barkley, 2004)

Summary for diagnosis: Adult ADHD (McGough & Barkley, 2004)

- Use rating scales that have been well standardized in groups of adults (eg,CAARS (Connors Adult ADHD Rating Scales), and WRAADS (Wender-Reimherr Adult ADD Scale)
- Given the lack of empirical support for 7 years as the age-of-onset criterion, clinicians should establish some evidence of symptoms and impairment before age 12 or initiation of puberty
- In assessing functional impairment, consider all available information to confirm evidence of pervasive impairments over the lifespan, even if current complaints are limited to a single domain

Summary for diagnosis: Adult ADHD
(McGough & Barkley, 2004)

- Clinicians must maintain a high suspicion for ***coexisting psychiatric conditions*** and should provide rational polytherapy when justified

- Ongoing research and clinical input on the criteria for ADHD in adults, including ***long-term follow-up studies of DSM-diagnosed children*** and field trials of symptoms in adults, are essential for subsequent revisions of DSM-IV.

Summary for diagnosis: Adult ADHD (McGough & Barkley, 2004)

- Clinicians can be comfortable treating adults with childhood histories of ADHD, evidence of current ADHD-related impairment, and a ***minimum of four*** (4), and not six (6) current hyperactive-impulsive or inattentive symptoms
- Clinicians should make efforts to ***obtain third-party corroboration*** whenever available and should carefully document the evidence of the disorder as justification for treatment
- Clinicians who prescribe medication should ***carefully monitor treatment response*** and the possibility of stimulant abuse and illicit diversion

Summary for diagnosis: Adult ADHD (WRAADDS)

- 7 primary symptom areas
  - 4 mirror DSM: Attention difficulties, Disorganization, Hyperactivity/Restlessness, Impulsivity
  - 3 cover Emotional Dysregulation: Temper, Affective lability, Emotional over-reactivity
- May more accurately describe adult phenotype
- *Requires subject to give retroactive history*
- Critiques: may exclude inattentive type, excludes comorbid dx, requires further (other) assessment of current functioning (?possibly a strength)

Summary for diagnosis: Adult ADHD (CAARS)

- Based on large normative database (n=2000)
- For use in ages 18 and over
- Excellent reliability and validity
- Self-report and observer (friends, co-workers, family members) report
  - Long version: 66 items/ short version 26 items
  - Focuses more on current symptoms than WRAADDS
- ADHD Index and Inconsistency Index provide useful clinical data
- Easy to score and obtain (see references)

Adult ADHD

- Cognitive-Behavioral Treatment
  - Manualized Treatment
    - Safren, et al (2005) Mastering Your Adult ADHD: A cognitive-behavioral treatment program
      - Client workbook: ISBN#0-19-518819-5
      - Therapist guide: ISBN#0-19-518818-7
- Patient Empowerment
  - ADD.org
  - CHADD.org

Medications used in Adult ADHD*

- Use pediatric and adolescent guidelines to start treatment, as in slides 42-50
- Most Adults will tolerate larger doses than typical doses used in pediatrics
  - Dosing of Adult ADHD does not typically need to exceed FDA maximums for pediatric dosing, though some exceptions exist
    - 40 mg Amphetamine
    - 60-72 mg Methylphenidate
    - 100 mg Atomoxetine
  - May be more responsive to TCAs than children/teens
  - See Wilens article (2004) for Excellent Review

Table. Medications Used in Adults With Attention-Deficit/Hyperactivity Disorder

Medication	Daily Dose, mg*	Daily Dosage Schedule	Common Adverse Effects
Stimulants			
Methylphenidate	20-100	Twice to 4 times	Insomnia Decreased appetite/weight loss Headaches Edginess
Amphetamine			
Dextroamphetamine and mixed amphetamine salts†	10-60	Twice to 3 times	Insomnia Decreased appetite/weight loss Headaches Edginess Mild increases in pulse/blood pressure
Magnesium pemoline	75-150	Once or twice	Insomnia Decreased appetite/weight loss Headaches Edginess Abnormal liver function test results
Noradrenergic agents			
Atomoxetine	40-120	Once or twice	Sleep disturbance Gastrointestinal tract distress, nausea Headache Mild increases in pulse/blood pressure
Antidepressants			
Tricyclics			
Desipramine; imipramine	100-300	Once or twice	Dry mouth Constipation Vital sign and electrocardiographic changes
Nortriptyline	50-200	Once or twice	Dry mouth Constipation Vital sign and electrocardiographic changes
Bupropion	150-450	Once or twice	Insomnia Risk of seizures (in doses >6 mg/kg) Contraindicated in bulimia

*Denotes typical daily doses, which may exceed US Food and Drug Administration–approved dosing.
†US Food and Drug Administration approved for adults with attention-deficit/hyperactivity disorder.

Wilens, et al, 2004*