


Assessment, Identification, & Treatment of ADHD at School

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Acknowledgement

Adapted from...

Brock, S. E., & Clinton, A. (2007). Diagnosis of attention-deficit/hyperactivity disorder (AD/HD) in childhood: A review of the literature. *The California School Psychologist*, 12, 73-91. doi:10.1007/BF03340933


Brock, S. E., Jimerson, S. R., & Hansen, R. (2009). *The identification, assessment, and treatment of ADHD at school*. New York: Springer.



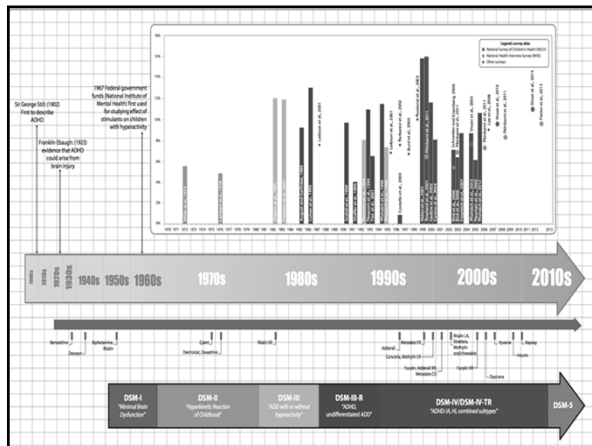
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Preface

- Etiology
 - A neurobiological disorder.
 - The exact cause of AD/HD is not known, but genetic, environmental, and neurological factors likely play a primary causal role.




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Preface

- **Diagnosis**
 - No single procedure will reliably diagnosis AD/HD.
 - Complicated by the fact that a variety of conditions may co-exist with and/or cause AD/HD symptoms.
 - Is time consuming
 - Involves the use of...
 - multi-procedures.
 - multi-sources.
 - multi-disciplines.


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Preface


- **Treatment**
 - Medication is well established as a safe and effective treatment for AD/HD.
 - A variety of psychosocial treatments are also an important part of the comprehensive treatment program.
 - Should be the first line treatment for preschoolers
 - Should always be combined with medication for school aged youth

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Workshop Objectives

- From this workshop participants will:
 - Learn about the symptoms, prevalence, prognosis, and causes of ADHD.
 - Become better prepared to participate in special education eligibility decisions.
 - Be able to recognize the essential elements of a clinical ADHD diagnosis.
 - Be better prepared to write psycho-educational evaluations regarding students with ADHD.
 - Be better able to offer empirically supported psychosocial treatments for the student with ADHD.

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Workshop Outline

- Background Information
 - Reasons to be Vigilant
 - Symptoms & Associated Features
 - Prevalence
 - Legal Issues
 - Causes
- Special Education Eligibility
- Clinical Diagnosis
- Psycho-educational Evaluation
- Psychosocial Treatment Recommendations

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Introduction: Reasons to be Vigilant

- AD/HD is very common
- AD/HD may be under-identified
- AD/HD is associated with school adjustment difficulties
- School professionals play a key role in identification
- School-based interventions are important treatments
- Students with AD/HD are often included in general education classrooms.
- Federal statute mandates

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Introduction: Symptoms & Associated Features

- Diagnosis requires...
 - Six or more of nine symptoms of inattention.
 - Six or more of nine symptom of hyperactivity and impulsivity

10 APA (2013) 


Introduction: Symptoms & Associated Features

- Inattention
 - a. Fails to give close attention to details/make careless mistakes
 - b. Difficulty sustaining attention
 - c. Does not seem to listen
 - d. Lack of follow through
 - e. Difficulty organizing tasks and activities
 - f. Avoids/dislikes tasks requiring sustained mental effort
 - g. Loses things
 - h. Easily distracted
 - i. Forgetful

11 APA (2013) 

Introduction: Symptoms & Associated Features


- Hyperactivity/Impulsivity
 - a. Fidgets with hands or feet
 - b. Difficulty remaining seated
 - c. Runs about/climbs excessively
 - d. Difficulty playing quietly
 - e. On the go ("Driven by a motor")
 - f. Talks excessively
 - g. Blurts out answers before questions are asked
 - h. Difficulty awaiting turn
 - i. Interrupts or intrudes on others

12 APA (2013) 

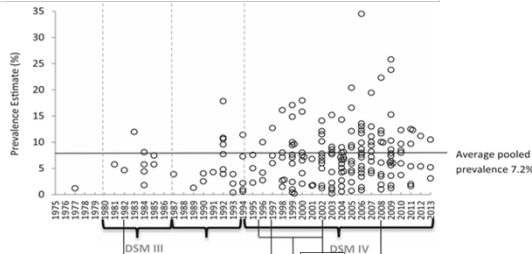
Introduction: Symptoms & Associated Features

- Associated Features
 - Vary according to age and development, but may include...
 - Low frustration tolerance
 - Irritability or mood lability
 - Impaired academic or work performance (even absent an LD)
 - Cognitive problems
 - Perform poorly on measures of attention, executive functioning and memory).
 - Increased risk of suicide attempts
 - By early adulthood
 - Primarily when comorbid with mood, conduct, or substance use disorders
 - Increased slow wave EEG
 - Reduced total brain volume as measured by MRI


13 APA (2013)



Introduction: Prevalence (USA)




14 Thomas et al. (2015)



Introduction: Prevalence (USA)

- 2011 National Survey of Children's Health
 - 2003-2011
 - 42% increase in parent-reported ADHD
 - Ever diagnosed with ADHD
 - 11% (15.1% of boys, 6.7% of girls)
 - Current ADHD diagnosis
 - 8.8% (12.1% of boys, 5.5% of girls)
 - Current ADHD diagnosis & medicated
 - 6.1% (8.4% of boys, 3.7% of girls)


15 Visser et al. (2014)



Introduction: Prevalence (USA)


- 2011 National Survey of Children's Health
 - Other findings
 - Most likely diagnosed
 - Non-Hispanic/Latino, 12.3%; White, 12.2%
 - Primary language English, 12.4%
 - Medicaid eligible, 14.4%
 - Least likely diagnosed
 - Hispanic/Latino, 6.9%
 - Primary language not English, 2.7%
 - No health care coverage, 6.4%
 - Region
 - Highest prevalence in the south, 12.6%
 - Lowest prevalence in the west, 8.1%

16 Visser et al. (2014)




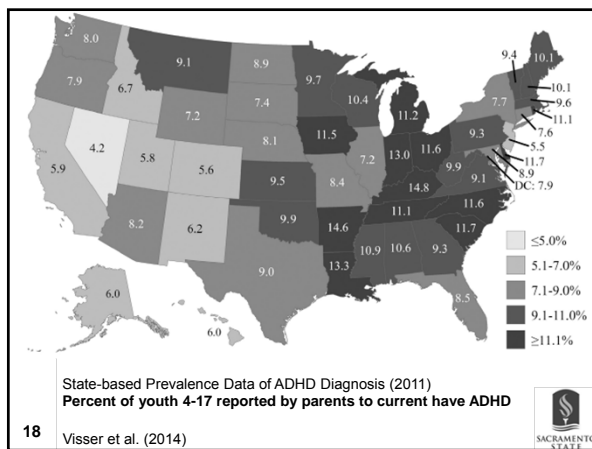
Introduction: Prevalence (States)

- Prevalence profiles are available for all 50 states, Washington DC, and the territories
 - <https://www.cdc.gov/ncbddd/adhd/stateprofiles/index.html>



17 CDC (2016)






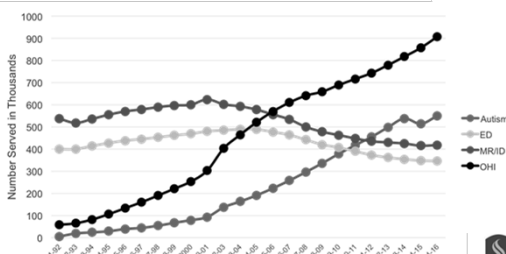
Introduction: Prevalence (Worldwide)

- Worldwide 5.9 to 7.1%
 - Variability of prevalence rates resulted mainly from methodological differences
- No significant prevalence differences between countries or regions of the world.
 - After controlling for differences in the diagnostic algorithms used to define ADHD.
 - Argues against the hypothesis that ADHD is a cultural construct that is uniquely associated with the US.


19 Willcutt (2012)



Introduction: Prevalence (Number of Students in Selected Eligibility Categories, 1991-2016)



20 Retrieved from <https://www2.ed.gov/programs/osepidea/618-data/static-tables/index.html#partb-cc>



Introduction: Legal Issues

- DSM diagnoses do not automatically qualify a student for any special education placement and/or related services!

DSM-IV IS RELEVANT.....

- Symptoms per above diagnoses provide information that may be relevant to determination of emotional disorder
- Expert testimony may reference and discuss DSM-IV symptomatology


BUT NOT SUFFICIENT

Source: Schwartz, M. (2010). The nexus between DSM & IDEA: Social Maladjustment v. Emotional Disturbance. Workshop presented at the 2010 Special Education Hearing Officers and Mediator Training, San Diego, CA.

Students w/ ADHD

504


Sp. ED



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Introduction: Legal Issues

- IDEA 1990
 - Attempt to make what was then referred to as ADD a disability category under the Individuals with Disabilities Education Act (IDEA) of 1990.
 - The U.S. DoE opposed this change as it judged that students with ADD who required special education would already meet existing eligibility criteria.

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Introduction: Legal Issues

- IDEA 1990
 - Subsequently, the U.S. Congress made no change to the definitions of "children with disabilities" with respect to AD/HD
 - Although it did add categories for Traumatic Brain Injury and Autism.
 - However, Congress did direct the Secretary of Education to issue a Notice of Inquiry (NOI) asking for public comment on special education for students with AD/HD (Davila, Williams, & MacDonald, 1991).

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Introduction: Legal Issues

- September 16, 1991, Policy Memorandum
 - From the Department's review of over 2000 comments generated by the NOI, it was concluded that there was **confusion** regarding the extent to which students with AD/HD may be eligible for special education services and general education accommodations. **As a result**, the Department issued a policy memorandum titled: "Clarification of Policy to Address the Needs of Children with Attention-Deficit Disorders within General and/or Special Education."

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Introduction: Legal Issues

- September 16, 1991, Policy Memorandum
 - This document indicated that students with ADD who require special education are eligible under the IDEA disability categories of **"other health impairment," "specific learning disability,"** or **"serious emotional disturbance."** Further, it specified that students with ADHD who do not require special education may nevertheless be eligible for specialized services, under **Section 504** of the Rehabilitation Act of 1973 (which prohibits agencies that receive federal funds from discriminating against persons with disabilities on the basis of that disability). Eligibility for 504 services would be based upon the finding that the student with ADHD was judged to be a "handicapped person" (i.e., **the student's AD/HD substantially limits the major life activity of learning;** Davila et al., 1991).

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Introduction: Legal Issues

- April 29, 1993, Clarification Memorandum
 - Offered as a **response to what was viewed as a misinterpretation of earlier communications** (including the Davila et al. 1991 Memorandum)
 - This memorandum addressed the responsibility of school districts to evaluate students "suspected" of having ADHD.

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Introduction: Legal Issues

- April 29, 1993, Clarification Memorandum
 - The Lim (1993) memorandum reiterated that the Davila and colleagues (1991) Memorandum was intended to ensure that students **suspected of having ADHD and believed by the school district to need** special education or related services are evaluated for such (and that these statements were necessary since many districts prior to the 1991 Memorandum felt that they did not need to conduct such evaluation given that ADHD was not an IDEA disability category).

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Introduction: Legal Issues

- April 29, 1993, Clarification Memorandum
 - The Lim memorandum, however, also clarified that it was **not the intent of prior communications to require school districts to evaluate every student suspected of having ADHD, "based solely on parental suspicion and demand."** It concluded that if a school district did not judge that a student required special education or related services, then it may refuse to evaluate the child (and notify the parents of their due process rights).

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Introduction: Legal Issues

- October 22, 1997, Notice of Proposed Rule Making
 - Published in the Federal Register (U.S. Department of Education, 1997) this NPRM was designed to elicit public comment on the 1997 reauthorization of IDEA.

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Introduction: Legal Issues

- October 22, 1997, Notice of Proposed Rule Making
 - Elements related to ADHD offered clarification of the conditions under which a student with ADHD would be eligible for IDEA services. **"Note 5" indicated that some students with ADHD will meet the criteria for other health impairments (OHI) if** (a) the ADHD is "determined to be a chronic health problem that results in limited alertness that adversely affects educational performance," and (b) "special education and related services are needed." In addition, the note clarifies that the term "limited alertness," a key element of OHI criteria, "includes a child's heightened alertness to environmental stimuli that results in limited alertness with respect to the educational environment" (p. 55070).

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Introduction: Legal Issues

- October 22, 1997, Notice of Proposed Rule Making
 - The NPRM's note 5 further clarifies that some students with "ADHD may be eligible for services under other disability categories in § 300.7(b) if they meet the applicable criteria for those disabilities," and "if those children are not eligible under this part, the requirements of section 504 of the Rehabilitation Act of 1973 and its implementing regulations may still be applicable" (U.S. Department of Education, 1997, p. 55031).

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Introduction: Legal Issues

- March 12, 1999, Final Regulations for IDEA 1997
 - The final regulations **added ADHD** to the list of conditions that may result in special education eligibility [Part B, Definition of "Child with a Disability" - 20 U.S.C. 1401(3)(A); 300.7(c)(9)(I) ADD and ADHD - 300.7(c)(9)(i)]. These regulations also clarified that the phrase "limited strength or vitality or alertness" that defines OHI includes "a child's heightened alertness to environmental stimuli that results in limited alertness with respect to the educational environment," which is characteristic of many students with ADHD (U.S. Department of Education, 1997, p. 55031).

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Introduction: Legal Issues

- August 14, 2006, Final Regulations for IDEA 2004
 - Regulations for the most recent reauthorization of IDEA were published in the Federal Register (U.S. Department of Education, 2006). With this reauthorization **no substantive changes** were made and the student with ADHD as their primary disability continues to potentially qualify for special education under one of three different eligibility categories: Specific Learning Disability, Emotionally Disturbed, and Other Health Impaired

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Introduction: Legal Issues

- August 14, 2006, Final Regulations for IDEA 2004
 - However, **the only specific mention of ADHD is found in the Other Health Impaired criteria** [§ 300.8(c)(9)(i)], which states: "Other health impairment means having limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational environment, that"
 - "Is due to chronic or acute health problems such as asthma, *attention deficit disorder or attention deficit hyperactivity disorder*, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, sickle cell anemia, and Tourette syndrome; and" ...
 - "adversely affects a child's educational performance" (emphasis added, p. 46757).




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Brain Region	Children			Adults			Changes after Rx
	GM	WM	FCN	GM	WM	FCN	
Caudate	↓		↓	±			Volume increase, increased activity, improved frontostriatal functional connectivity
Thalamus	↓		↓	↓		↓	
Anterior cingulate	↓	↓	↓	↓	↓	↓	Increased activity
Prefrontal cortex	↓	↓	↓	↓		↓	Volume reduction in untreated patients, increased activity
Premotor and SMA cortex	↓		↓				
Superior Parietal cortex	↓		↓	↓		↓	Increased activity
Precuneus, posterior cingulate, lateral parietal cortex, medial frontal cortex			↓			↓	Improved functional connectivity
Cerebellum	↓	↓	↓	↓		↓	Increased activity after treatment, improved frontocerebellar functional connectivity
Corpus callosum		↓			↓		
Fasciculus longitudinalis superior		↓			↓		
Anterior corona radiata		↓			↓		

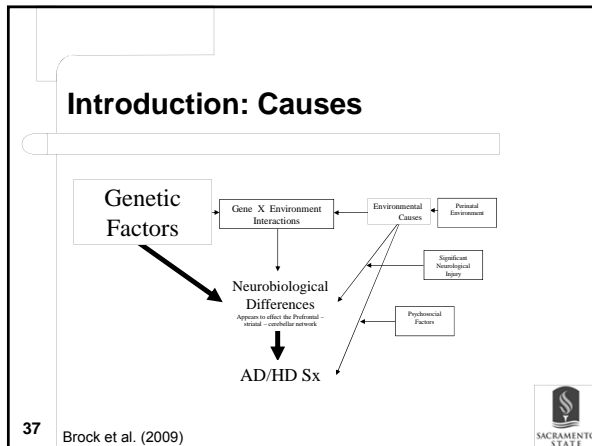
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Introduction: Causes

- Genetics (cause)
 - Plays a significant role, but does not account for all cases of AD/HD.
- Environment (cause)
 - May play a small role, but not nearly as predictive as genetics
- Neurobiology (consequence gene x environment interactions/cause of ADHD behaviors)
 - The result of genetic and/or environmental factors that appear to cause AD/HD behaviors



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Introduction: Causes (Genetics)

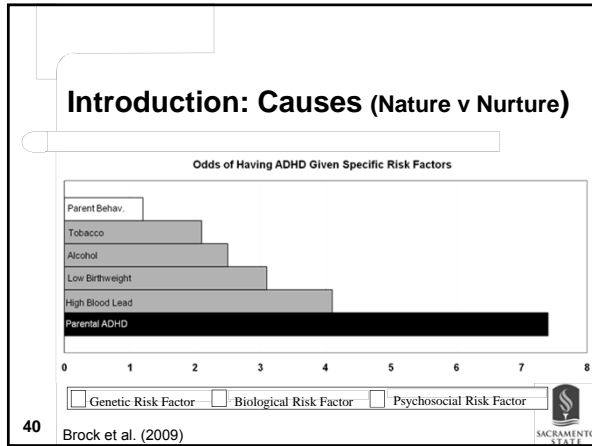
- Twin studies reveal that AD/HD is highly heritable.
- Spencer et al.'s (2002) review suggests a heritability of 0.75.
 - 0 means there is no genetic input.
 - 1 means the disorder is completely determined by genetics.
- In other words, approximately 75% of the etiologic contribution of AD/HD is genetic!
 - Nikolas & Burt (2010) obtained similar findings for both AD/HD subtypes
- Thus, a family history of AD/HD is an important variable to consider when diagnosing this disorder.

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Introduction: Causes (Environment)

- Birth weight
- Prematurity
- Psychosocial Stressors
- Environmental Toxins
- Neurological Injury

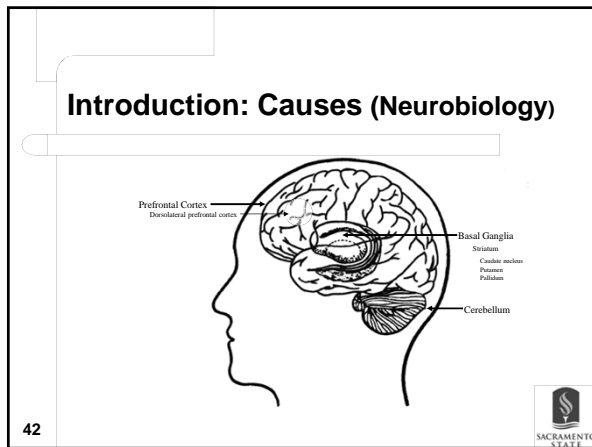
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Introduction: Causes (Combined Factors)

- A number of risk factors have now been associated with AD/HD, no factor or any combination is sufficiently explanatory to account for all AD/HD cases.
- In fact, many children suffer similar difficulties are exposed to comparable levels of such risk factors and do not develop AD/HD.
- It may require a combination of some trauma, toxic exposure, or subtle form of brain insult, coupled with a certain pattern of susceptibility genes, for AD/HD to emerge.

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Introduction: Causes (Neurobiology)

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Introduction: Causes (Neurobiology)


- Neurochemistry
 - From the response of children with AD/HD to medications that increase the availability of dopamine and norepinephrine, neurochemical explanations for AD/HD have also been proposed.
 - Methylphenidate (Ritalin®), pemoline (Cylert®), and dextroamphetamine (Dexedrine®) increase the release and inhibit the reuptake of dopamine.
 - Atomoxetine (Strattera®), is a norepinephrine reuptake inhibitor.



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Introduction: Causes (Neurobiology)

- Neurochemistry
 - Further evidence supporting the neurochemical basis of AD/HD include:
 - Decreased brain dopamine in the cerebral spinal fluid of children with AD/HD.
 - Animal studies have suggested that methylphenidate increases norepinephrine and dopamine out flow within the prefrontal cortex.
 - The genes implicated in AD/HD are known to regulate brain chemicals.




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Workshop Outline

- Background Information
- Special Education Eligibility
 - SLD
 - OHI
 - ED
- Clinical Diagnosis
- Psycho-educational Evaluation
- Psychosocial Treatment Recommendations


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Special Education Eligibility: SLD

- Is the ADHD considered a processing disorder?
 - The predominately inattentive type has been show to affect reading comprehension even in the absence of a reading disability (Brock & Knapp, 1996).


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Special Education Eligibility: OHI

- Is the ADHD considered a chronic health problem?


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Special Education Eligibility: ED

- Is the ADHD considered an emotional disturbance?


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Workshop Outline

- Background Information
- Special Education Eligibility
- Clinical Diagnosis
 - DSM-IV-TR Criteria
 - Age Specific Features
 - Differential Diagnosis
 - Recommended Procedures
- Psycho-educational Evaluation
- Psychosocial Treatment Recommendations


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Diagnosis


- According to Pelham, Gabiano, and Massetti (2005):
 - "Because the definition of AD/HD is currently a behavioral one based on the individual's functioning in daily life (APA, 1994), assessment procedures must focus on the observable behavior as reported by adults or otherwise measured in natural (home and classroom) and laboratory (clinic, analogue classroom) settings" (p. 451).

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Diagnosis

- American Academy of Pediatrics (2011)
 - ADHD: Clinical Practice Guideline for the Diagnosis, Evaluation, and Treatment of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents.
- American Academy of Child and Adolescent Psychiatry (2007)
 - Practice Parameters for the Assessment and Treatment of Children, Adolescents, and Adults with Attention-Deficit/Hyperactivity Disorder.

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Diagnosis

- "... tests are not sufficiently sensitive or specific to serve as diagnostic indices" (p. 61).
- "No biological marker is diagnostic for ADHD" (p. 61).

53 APA (2013) 


Diagnosis: DSM-5 Criteria

- Symptom Impairment Onset
 - Age 12
- Developmental Level
 - Inconsistent with...
- Symptom Duration
 - 6 months.

54 APA (2013) 


Diagnosis: DSM-5 Criteria

- Symptom Display
 - Two or more settings.
- Clinical Significance
 - Clear evidence that symptoms interfere with, or reduce the quality of, social, academic or occupational functioning.

55 APA (2013) 


Diagnosis: Age Specific Features

- Preschoolers
 - Difficult to diagnose.
 - High levels of hyperactive/impulsive behavior do not indicate a problem or disorder if the behavior does not impair functioning.
 - Those with AD/HD will be extremely active and impulsive, will need constant supervision to avoid injury, and will be difficult to contain.
 - This constant activity can be very stressful to adults who may not have the energy or patience to tolerate such behavior.
 - It has been suggested that task persistence is a feature of preschool AD/HD.
 - While the preschooler without AD/HD can stick with a task for at least 10 minutes, the preschooler with AD/HD is ready to change activities every few minutes.

56 APA (2013) 


Diagnosis: Age Specific Features

- Elementary School Students
 - Symptoms most prominent.
 - Activity may be high in play situations.
 - Impulsive behaviors may occur especially in peer pressure situations.
 - Inattention often interferes with class work and academic functioning.
 - Impulsivity often result in the breaking of social, familial, and school rules.
 - Independent seat work tasks can be especially challenging.
 - On-task behavior and task completion are poor.
 - Do not have good organizational habits.

57 APA (2013) 


Diagnosis: Age Specific Features

- Late childhood and early adolescence
 - Symptoms of excessive hyperactivity become less common, and may be replaced by an internal sense of restlessness.
 - However, the increased work demands of these school years, combined with poor organizational habits, results in excessively poor task completion and very negative attitudes toward school.

58 APA (2013) 


Diagnosis: Age Specific Features

- Adulthood
 - About 1/3 of children diagnosed with AD/HD will continue to meet diagnostic criteria into adulthood
 - About 1/3 demonstrate sub-threshold symptoms.
 - Restlessness associated with AD/HD may result in avoidance of activities that offer limited opportunities for spontaneous movement, such as desk jobs.
 - Social dysfunction may also be noted.

59 APA (2013) 


Diagnosis: Differential Dx

- Medical Conditions
 - Impairment of vision and/or hearing
 - Medication side effect(s)
 - Asthma (or reaction to asthma medications)
 - Allergic rhinitis (or reaction to antihistamine)
 - Incontinence of urine or feces
 - Malnutrition (vitamin or metabolic deficiency)
 - Thyroid disorder
 - Lead toxicity

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Diagnosis: Differential Dx

- Neurologic and Psychiatric Conditions
 - Learning disabilities
 - Tic disorder
 - Seizure disorder (or effect of antiepileptic)
 - Mental retardation or intellectual precocity
 - Low developmental level.
 - Brain damage or injury
 - Sleep disorders (including sleep apnea and insomnia)
 - Oppositional Defiance and Conduct Disorders
 - Substance abuse
 - Anxiety
 - Depression (or Bipolar Disorder)
 - Obsessive-compulsive Disorder
 - Posttraumatic Stress Disorder

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Diagnosis: Differential Dx

- Environmental Conditions
 - Improper or poor learning environment
 - Mismatched curriculum and child
 - Dysfunctional or stressful home
 - Poor parenting (inconsistent, punitive)
 - Neglect or abuse
 - Parental psychopathology
 - Low motivation.

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Diagnosis: Recommended Procedures

- A variety of different procedures were identified.
- Most could be classified into one of six categories.
- Behavior rating scales, diagnostic interviews, behavioral observations, and laboratory/psychoeducational testing are the most frequently recommended.
- Medical evaluations and school record review were also recommended.

63 Brock & Clinton (2007) 


Diagnosis: Recommended Procedures

- Rating Scales
 - Cited in 100% of the papers reviewed.
 - Strengths:
 - Quick and cost effective way to document the presence of AD/HD symptoms.
 - Provide a normative frame of reference.
 - Useful in assessing treatment effectiveness.
 - Allow for assessment of behavior in specific settings.
 - Weaknesses:
 - Many false positives.
 - Rater bias.
 - Unrepresentative samples.
 - Recommendations:
 - Raters must have observed the child for at least six weeks.
 - Symptom specific and broad band rating scales are recommended.

64 Brock & Clinton (2007) 





Diagnosis: Recommended Procedures

- Broad Band Rating Scales
 - Include items that span the range of child psychopathologies.
 - By themselves are not currently recommended for the diagnosis of AD/HD in clinical practice (Pelham et al., 2005).
 - Useful as a tool for considering comorbid or competing diagnoses.

65 Brock & Clinton (2007) 

Diagnosis: Recommended Procedures

- Broad Band Rating Scales
 - Examples:
 - Behavior Assessment System for Children (Kamphaus & Reynolds, 2007)
 - Conners Comprehensive Behavior Rating Scales (Conners, 2008)
 - Child Behavior Checklist (Achenbach et al., 2004)
 - Teacher Report form (Achenbach et al., 2004)


   

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Diagnosis: Recommended Procedures

- Broad Band Rating Scales
 - ADHD vs Pediatric Bipolar Disorder
 - Child Behavior Checklist ($T \geq 70$)
 - Attention Problems
 - Aggression
 - Anxious/Depressed


67 Faraone et al. (2005); Mick et al. (2003)



Diagnosis: Recommended Procedures

- Symptom Specific Rating Scales (Available via Internet)
 - SNAP-IV
 - <http://vrosario.bol.ucla.edu/forms/snapIV.pdf>
 - Parent / Teacher DBD Rating Scale
 - http://ccf.buffalo.edu/pdf/DBD_rating_scale.pdf
 - Vanderbilt ADHD Diagnostic Parent Rating Scale
 - <http://concordchildrensclinic.com/forms/VanderbiltADHDDiagnosticParentRatingScale.pdf>
 - Vanderbilt ADHD Diagnostic Teacher Rating Scale
 - <http://www.brightfutures.org/mentalhealth/pdf/professionals/bridges/adhd.pdf>


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Diagnosis: Recommended Procedures

- Rating Scales
 - These measures are ...
 - Reliable, however, cross-informant reliabilities are low ranging from .14 to .59
 - Effective at discriminating between clinical and nonclinical groups and among ADHD subgroups.
 - Have a long history of use as treatment outcome measures
 - Are sensitive to both behavioral and pharmacological treatment effects


69 Pelham et al. (2005)



Diagnosis: Recommended Procedures

- Interviews
 - Cited in 98% of the papers reviewed.
 - Help to answer the following questions:
 - Are AD/HD symptoms present?
 - When did symptoms begin to present problems?
 - How long have symptoms been problematic?
 - Is there a family history of AD/HD?
 - Is the developmental history suggestive of AD/HD?
 - Are there learning disabilities?
 - Are there interpersonal difficulties?
 - Interview Types:
 - Structured, semistructured, and unstructured interview
 - Parent, teacher, and student interviews


70 Brock & Clinton (2007)



Diagnosis: Recommended Procedures

- Structured and semi-structured interviews
 - *Strengths:* allow for normative comparison.
 - *Weaknesses:* cumbersome, don't facilitate school interventions, false positives.
 - Examples (Structured):
 - Diagnostic Interview for Children and Adolescents – Revised
 - Diagnostic Interview Schedule for Children
 - Example (Semistructured)
 - Kiddie Schedule for Affective Disorders and Schizophrenia
 - Available: <http://www.psychiatry.pitt.edu/research/tools-research/ksads-pl>
 - Child and Adolescent Psychiatric Assessment
- Unstructured interview
 - *Strengths:* flexible, interviewee focused, facilitate collection of psychosocial data.
 - *Weaknesses:* Lack reliability.


71 Brock & Clinton (2007)



Diagnosis: Recommended Procedures

- Parent interviews
 - *Strengths:* Identifies historical data (e.g., family, developmental, and school histories).
 - *Weaknesses:* Lacks reliability.
- Teacher interviews
 - *Strengths:* Informant has knowledge of developmental expectations. Has frequent observations. Helps to identify behavioral contingencies. Provides academic data.
 - *Weaknesses:* May lack objectivity. Under utilized. If parent report is positive for AD/HD, there is a 90% probability that the teacher report will be positive.
- Student interviews
 - *Strengths:* May facilitate behavioral observations and helps in the identification of psychopathology.
 - *Weaknesses:* AD/HD symptoms may not be displayed during the interview. AD/HD symptoms may not be recognized by the student.


72 Brock & Clinton (2007)



Diagnosis: Recommended Procedures

- Psychological Testing
 - Cited in 90% of the papers reviewed.
 - Strength:
 - Assists in differential diagnosis.
 - Weakness:
 - Ability to directly assess AD/HD.
 - Recommendations:
 - Psychoeducational tests are best used to rule in or out competing explanations for AD/HD symptoms (e.g., learning disabilities).
 - Continuous performance tests appear to be the most useful for AD/HD diagnosis.

73 Brock & Clinton (2007)



Diagnosis: Recommended Procedures


Continuous-Performance Testing

Instructions: Cross this out (right to left) when all every time you see one, as fast as you can (do not raise a hand).

989	982	988	981	991	994	983	991	989	986
984	986	992	999	982	994	991	982	998	992
999	998	983	984	991	998	982	984	989	998
983	998	994	989	981	998	992	999	992	984
981	994	991	982	998	998	981	989	998	994
994	992	983	989	994	984	994	999	981	989
989	982	989	999	998	988	991	984	999	992
983	998	981	983	991	986	989	998	982	988
982	998	994	984	992	988	999	992	998	991
998	986	992	999	982	994	984	982	983	998
984	988	989	998	994	989	994	981	999	982
998	992	989	991	984	982	994	998	994	991
981	988	984	982	992	998	983	992	984	982
989	998	998	994	981	988	991	994	981	988

Age	Mean Score		Time Sequence	
	Mean	S.D.	Mean	S.D.
6-10	2	1	200.76	21.31
11-15	2	1	198.00	19.75
16-18	2	2	201.00	19.50
19-24	2	2	201.00	19.75


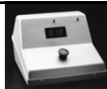
74




Diagnosis: Recommended Procedures

- Continuous Performance Testing
 - The most frequently studied laboratory test for AD/HD.
 - Examples include the Gordon Diagnostic System and the Conners Continuous Performance Test.
 - Require the student to listen to or look at a series of numbers or letters, and to respond in some way.
 - Scores are typically based upon number of correct responses, errors of omissions, and errors of commission.
 - Should not be used as the only data source when making an AD/HD diagnosis.


75

Diagnosis: Recommended Procedures




76



Diagnosis: Recommended Procedures

- Test Taking Behavior
 - Observations of children taking CPTs may be as sensitive to discriminating AD/HD children from other diagnostic groups as CPT scores themselves.
 - During testing students with AD/HD typically make more careless and impulsive errors. In addition, they may find it difficult to sit still, may display sustained concentration difficulties, and be distracted by events outside of the testing room.
 - Test performance often characterized by omissions or insertions, or misinterpretation of easy items when motivated to do well (not just when completing task that are not intrinsically valued).


77



Diagnosis: Recommended Procedures


- Intelligence Testing Profiles
 - WISC
 - "If a child's lowest index is WMI or PSI, ADHD should be considered and needs to be ruled in or out with a comprehensive evaluation" (p. 247).
 - "If a child's lowest index is not WMI or PSI, ADHD is unlikely because all children with ADHD in our study scored lowest on WMI or PSI" (p. 247).
 - See Brock et al. (2009) for additional IQ test profiles

78 Mayes & Calhoun (2007)



Diagnosis: Recommended Procedures


- Executive Functioning
 - Behavior Rating Inventory of Executive Function (BRIEF)
 1. Parent report on the **Behavior Regulation Index** scale differentiates ADHD-Combined Type from the ADHD-Inattentive Type and Non-ADHD groups
 2. **Metacognitive Index** most useful in differentiating ADHD from the non-ADHD group.
 3. **Working Memory** also differentiates ADHD from the non-ADHD group



79 McCandless & Laughlin (2007)

Diagnosis: Recommended Procedures


- Behavioral Observations
 - Cited in 60% of the papers reviewed.
 - Strengths:
 - Confirm rating scale and interview data.
 - May be more valid than test data.
 - Weaknesses:
 - Cost.
 - Requires extensive training.
 - Lack of normative data.
 - Low frequency behaviors may not be seen.



80 Brock & Clinton (2007)

Diagnosis: Recommended Procedures

- Behavioral Observation Recommendations:
 - Should conduct several observations in different settings given that symptoms may vary across situations and times.
 - Should include the setting(s) where in the student is reported to have his/her greatest difficulty.
 - Classroom observations are particularly important.
 - Both anecdotal and systematic observations should be used.



81 Brock & Clinton (2007)

Diagnosis: Recommended Procedures

Behavioral Contingency Assessment (Time)

Student Name: _____ Date: _____
 Observer(s): _____
 Behavior being observed: _____

Behaviors observed
 Behaviors observed
 Behaviors observed
 Behaviors observed
 Behaviors observed
 Behaviors observed
 Behaviors observed

Time	Date				
7:30					
7:45					
8:00					
8:15					
8:30					
8:45					
9:00					
9:15					
9:30					
9:45					
10:00					

82

Diagnosis: Recommended Procedures

Behavioral Contingency Assessment (Activity)

Student Name: _____ Date: _____
 Observer(s): _____
 Behaviors being observed: _____

Behaviors observed
 Behaviors observed
 Behaviors observed
 Behaviors observed
 Behaviors observed
 Behaviors observed
 Behaviors observed

Behaviors	Transit out	Large Group/Lecture	Small Group	Independent work	Preparation task	Workshop/Workbook	Read/Lead	Recitation	Handwritten memo	Other

83

Diagnosis: Recommended Procedures

Interval Time Sample of On-task Behaviors


Student Name: _____ Date: _____ Time: _____
 Teacher Name: _____ Observer Name: _____

Code	T = On-task	P = Passive off-task	V = Verbal off-task	M = Motor off-task
Time	Target	Companion	Class Scan	Setting, Task, and Anecdotal Notes

84


Diagnosis: Recommended Procedures

- ADHD School Observation Code (ADHD SOC)
 - <http://www.checkmateplus.com/product/adhd-soc.htm>
- Behavioral Observation of Students in Schools (BOSS)

85 


Diagnosis: Recommended Procedures

- Medical Examination
 - Cited in 34% of the papers reviewed.
 - Includes the medical interview and the physical examination.
 - From this examination the need for diagnostic medical testing can be determined.
 - By itself is inadequate to diagnosis AD/HD.

86 Brock & Clinton (2007) 

Diagnosis: Recommended Procedures


- Medical Examination
 - Critical for children with a seizure disorder and/or asthma.
 - Purposes of . . .
 1. Identify conditions that may have caused symptoms.
 2. Identify medical conditions associated with the symptoms that may require treatment.
 3. Identify medical conditions that would contraindicate treatment with stimulant medications.

87 

Diagnosis: Recommended Procedures

- School Record Review
 - Cited in 24% of the papers reviewed.
 - Cumulative folders (report cards).
 - Document symptom onset and duration.
 - Document symptom changes over time.


88 Brock & Clinton (2007)



Diagnosis

- Conclusion
 - Diagnosis is as much an art as it is a science.
 - There is no single psychological or medical test.
 - There are a number of conditions that generate AD/HD-like symptoms.
 - Requires a multidisciplinary team, accessing multiple data sources, and using multiple assessment procedures.


89 Brock & Clinton (2007)



Diagnosis vs. Psycho-educational Assessment


- Diagnostic vs. Psycho-educational evaluation.
 - *While diagnosis will focus on the presence or absence of relevant symptoms, the psycho-educational assessment should operationalize specific problem behaviors, evaluate establishing operations and immediate antecedents, and consider the environmental consequences that may exacerbate, precipitate, and maintain the behavior (Pelham, 2005).*

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Workshop Outline

- Introduction
- Special Education Eligibility
- Clinical Diagnosis
- Psycho-educational Evaluation
 - Testing Accommodations & Modifications
 - Developmental and Health History
 - Behavioral Observations & Functional Assessment
 - Specific Measures
- Psychosocial Treatment Recommendations

91 


Psycho-ed. Evaluation: Testing Accommodations & Modifications

- Allow for frequent test session breaks
- Allow for physical movement
- Minimize distractions
- Make use of powerful external rewards
- Provide clear test taking rules
- Carefully pre-select task difficulty
- Allow the student to pace him- or herself.
- Schedule the testing session early in the day
- Provide structure and organization.
- Modify test administration and allow nonstandard responses

92 


Psycho-ed. Eval: Developmental and Health History

- Attention-deficit/Hyperactivity Disorder Diagnostic Evaluation Health, Family, Developmental, & Behavioral History Interview Form

93 Brock et al. (2009) 


Psycho-ed. Eval: Behavioral Observations & Functional Assessment

- Students with AD/HD are a very heterogeneous group.
- Observation of the student with AD/HD in typical environments, such as the classroom, will also facilitate the evaluation of test taking behavior.
- From such observations judgments regarding how typical the students test taking behaviors were can be made and the validity of the obtained test results assessed.
- A specific tool for evaluating the test session behavior, suggested to be valid and reliable, is the *Guide to the Assessment of Test Session Behavior* (Glutting & Oakland, 1993).
- Parent and teacher interviews will also be important to understanding the student's behavior and are key elements of a functional behavioral assessment.

94 


Psycho-ed. Eval: Specific Measures

- Should be evaluated in all areas of suspected disability.
 - This means that the evaluation should include measures designed to help determine eligibility for special education services under the learning disabled, other health impaired, and emotionally disturbed criteria.
 - The evaluation will typically include measures of cognitive functioning, adaptive behavior, basic psychological processes, academic achievement, emotional functioning, and language functioning.

95 


Psycho-ed. Eval: Specific Measures

- Cognitive Functioning
 - To establish the student's developmental level.
 - Students with AD/HD score an average of nine points lower than their age peers.
 - Students with AD/HD often score lower on tasks that assess executive functions.

96 


Psycho-ed. Eval: Specific Measures

- Adaptive behavior
 - Score lower on measures of adaptive behavior.
 - Relative to other clinical groups, discrepancy between IQ test and adaptive behavior scale scores is often larger among students with AD/HD.
 - IQ standard scores higher than adaptive behavior scores.
 - Measures such as the Vineland Adaptive Behavior Scales should be administered.
 - Serve as a measure of the functional impairments.
 - Can be used to establish a baseline for, and evaluate attainment of, IEP objectives.

97 


Psycho-ed. Eval: Specific Measures

- Psychological processes
 - AD/HD frequently comorbid with reading disabilities
 - Thus, phonological processing tests should always be considered.
 - AD/HD associated with impaired executive functioning
 - The NEPSY differentiates individuals with the inattentive type of AD/HD from those with the combined type.
 - The BRIEF parent and teacher rating scales have promise in identifying intervention targets, and to account for a significant amount of academic achievement and adaptive behavior variance among students with AD/HD.
 - AD/HD associated with motor coordination problems and poor graphomotor ability.
 - Among the measures that could be used to assess this ability is the *Developmental Test of Visual-Motor Integration*.

98 

Psycho-ed. Eval: Specific Measures


- Psychological processes
 - Executive functioning differentiates children with ADHD from a normal control group
 - Phonological awareness differentiates children with a reading disability from a normal control group

99 Marzocchi et al. (2008) 

Psycho-ed. Eval: Specific Measures

- Psychological processes
 - While ADHD symptom severity predicted both social and school functioning, impaired executive functioning predicted only school functioning.
 - With high levels of inattention, impaired executive functioning indicated a greater need for special education.
 - With high levels of hyperactivity/impulsivity, impaired executive functioning predicted higher levels of physical aggression.
 - Girls with poor executive functioning were less accepted by peers as compared to similarly impaired boys.


100 Diamantopoulou, Rydell, Thorell, & Bohlin (2007)



Psycho-ed. Eval: Specific Measures

- Academic achievement
 - AD/HD is typically associated with significant deficits in academic achievement.
 - Measures such as the *WJ III: ACH* and the *WIAT* should be administered.
 - Can be used to establish a baseline for, and evaluate attainment of, IEP objectives.
 - Even in the absence of a comorbid learning disability, students with AD/HD may have relative academic achievement deficits.
 - Example: AD/HD students without learning disabilities still have lower reading comprehension test scores.


101



Psycho-ed. Eval: Specific Measures

- Emotional functioning
 - ¾ or more of students with AD/HD will develop a comorbid psychiatric disorder.
 - It will also be important to evaluate the student's emotional/behavioral status.
 - Measures such as the *BASC-2* would be appropriate as a general purpose screening tool.
 - More specific measures such as The *Children's Depression Inventory* and the *Revised Children's Manifest Anxiety Scale* would be appropriate for assessing more specific presenting concerns.


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103

Psycho-ed. Eval: Specific Measures


- Language functioning
 - One of the least problematic areas.
 - Children with AD/HD do not appear to have higher rates of serious or generalized language delays.
 - However, language impairment are not uncommon.
 - Language comprehension/communication are rated problematic 3 times more often than expressive language.
 - More likely to have specific speech development challenges.
 - Given these observations, referral to a speech and language pathologist may be a common supplement to the psycho-educational evaluation.



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Workshop Outline


- Introduction
- Special Education Eligibility
- Clinical Diagnosis
- Psycho-educational Evaluation
- Psychosocial Treatment Recommendations
 - Setting the Student up for Success
 - Encouraging Adaptive Behavior
 - Connecting Diagnosis to Treatment



105

A Note About Medication


- Relative to children (age 9 to 15 years) who have never been medicated, age peers with a history of having been medicated (but not currently on medication) appear to have better executive and academic functioning (Semrud-Clikeman et al. (2008).
- Meta-analysis supports positive effects of psychopharmacological interventions on academic success in children with ADHD. The findings Drug treatment improves the school experience for children both in terms of their classroom behavior and their academic performance (Prasad et al., 2013)



A Note About Medication

- American Academy of Pediatrics (AAP) guidelines (2011) state that behavior therapy is the recommended first line treatment for ADHD in young children, and should be tried before medication is prescribed.

106



Treatment

ADHD Treatments For Preschoolers (ages 4-5)

Be sure they get what's best!

- Preschoolers

Where we have been: (Treatment practices, 2009-2010)
Almost 1 in 2 preschool children with ADHD got no behavioral therapy. About 1 in 4 were treated only with medication.

Where we need to go: (Treatment guidelines, 2011)
Provide behavioral therapy first before medication.

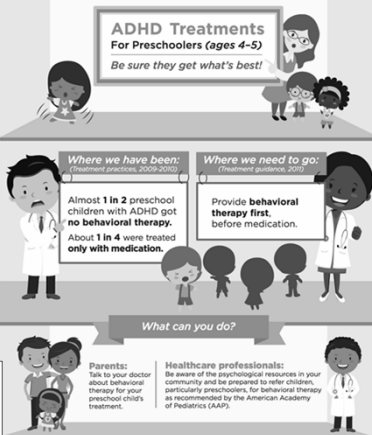
What can you do?

Parents: Talk to your doctor about behavioral therapy for your preschool child's treatment.

Healthcare professionals: Be aware of the psychological resources in your community and be prepared to refer children, particularly preschoolers, for behavioral therapy as recommended by the American Academy of Pediatrics (AAP).

Infographic available from: <https://www.cdc.gov/nchsddd/adhd/guidelines.html>
FOR MORE INFORMATION: www.cdc.gov/adhd
Twitter: @CDC_NCHDDD


107



A Note About Medication

- To understand treatment patterns for children ages 2-5 years receiving clinical care for ADHD, healthcare claims for psychological services and ADHD medication were compared for patients covered by MarketScan commercial employer-sponsored insurance (ESI, 2008–2014) or by Medicaid (2008–2011).
 - In both populations, percentage of children 2–5 years receiving clinical care for ADHD increased over time.
 - In both populations, about 3 in 4 children ages 2–5 years with ADHD received ADHD medicine, and only about half any form of psychological services.
 - During 2008–2011, 2–5 year-olds covered by Medicaid were twice as likely to receive clinical care for ADHD compared with similar-aged children covered by ESI.
 - Among 2–5 year-old children with ESI, the percentage in clinical care for ADHD that received psychological services did not increase after 2011 release of AAP guidelines.

108



Treatment

- School aged youth

ADHD Treatments
For Children and Teens (ages 6-17)
Be sure they get what's best!

Where we have been:
(Treatment practices, 2009-2010)
Less than 1 in 3 children with ADHD in this age group got both behavioral therapy and medication.

Where we need to go:
(Treatment guidance, 2012)
Provide both behavioral therapy and medication.

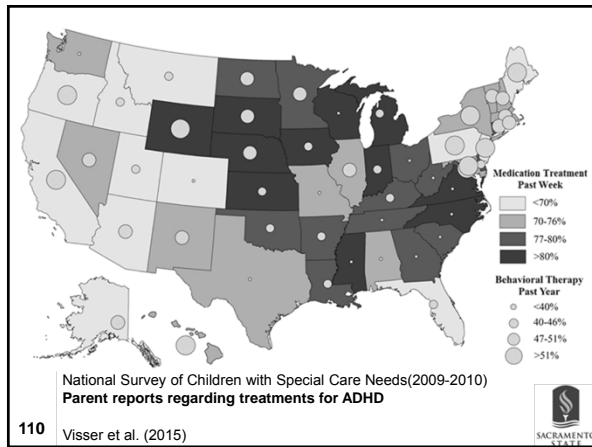
What can you do?

Parents:
Talk to your doctor about the recommendations for ADHD treatment and about what's best for your child.

Healthcare professionals:
Be aware of the psychological resources in your community and be prepared to refer children for behavioral therapy as recommended by the American Academy of Pediatrics (AAP).

Infographic available from:
<https://www.cdc.gov/nchs/ncbddd/adhd/infographic-treatments-children-teens.html>
FOR MORE INFORMATION:
www.cdc.gov/adhd
Twitter: @CDC_NCBDDD

109



Psychosocial Treatment Recommendations


- *Nonpharmacological Treatments for ADHD: A Meta-Analytic Review*
 - Behavior modification could be recommended as an effective intervention for the treatment of ADHD in children.
 - Claims within the literature that neurofeedback is a promising intervention for treatment of ADHD received support.
 - Neurofeedback treatment resulted in statistically significant improvement in *DSM-IV* symptoms, neuropsychological test performance, and behavior.

111 Hodgson et al. (2014)

Psychosocial Treatment Recommendations

- *Nonpharmacological Treatments for ADHD: A Meta-Analytic Review*
 - In general, psychological treatments for ADHD were found to be more efficacious when used with girls than with boys, in the included studies.
 - Psychological interventions had the least benefit for children with the combined-type ADHD diagnosis.


112 Hodgson et al. (2014)



Psychosocial Treatment Recommendations

- *Psychosocial Treatments for ADHD: A Systematic Appraisal of the Evidence*
 - “The general conclusion that resonates across this series of reviews is that psychosocial treatments can have some positive impact for children with ADHD beyond the impact of pharmacologic treatment alone” (p. 8).


113 Watson et al. (2015)



Psychosocial Treatment Recommendations

- **Setting the Student up for Success**
 - Modify the Academic Environment
 - Eliminate irrelevant cues or distractions from the work area
 - Engaging/irrelevant visual stimuli (toys, cartoons)
 - Conversations during complex thinking tasks
 - Auditory distractions during individual seatwork
 - Highlight relevant information
 - Bold important elements of written directions
 - Provide examples or models when giving directions
 - Ask students to repeat instructions and recount
 - Use color, animation, or verbal cues to improve attention to academic tasks. (e.g., brightly colored spelling words).


114 Zentall (2005)



Psychosocial Treatment Recommendations

- Challenging Horizons Program–after school version
 - The results of this study suggest that the CHP interventions provided for approximately 5 hr per week may be an effective treatment for the academic impairment associated with adolescents with ADHD.


115 Evans et al. (2015, p. 1)



Psychosocial Treatment Recommendations

- Setting the Student up for Success
 - Modify the Academic Environment
 - Add music or sound during academic tasks.
 - AD/HD students have been found to be more productive and accurate when music was playing in the background.
 - Increase the novelty of lessons.
 - AD/HD students have shown improved attention when presented with novel tasks (films, free time, tests) when compared to routine lectures and seat work.


116 Zentall (2005)



Psychosocial Treatment Recommendations


- Setting the Student up for Success
 - Modify Instruction
 - Increase opportunities for child-initiated movement during class lessons.
 - Activities requiring movement (games, drills, calculator use, filing) improve the student’s ability to attend to class lessons.
 - Allow students to move around between lessons or tasks.

117 Zentall (2005)




Psychosocial Treatment Recommendations

- **Setting the Student up for Success**
 - Adjust Task Difficulty
 - Match task difficulty to instructional level
 - Begin with easier tasks
 - Progress to more complex assignments after a period of practice.
 - Avoid tasks that are too easy or difficult
 - AD/HD students often give up or become bored with tasks that appear too difficult or too easy.
 - Encourage students to set goals relative to their own work- not that of other students.

118 Zentall (2005) 


Psychosocial Treatment Recommendations

- **Setting the Student up for Success**
 - Adjust On-task Behavior Expectations
 - Reduce the quantity of items or amount of time required for class work in one sitting
 - Allow students to take breaks
 - Break large assignments up into small parts
 - Shorten task directions and use fewer words to explain assignments
 - Decrease repetitive tasks
 - Students with AD/HD are more likely to become off task when information is repetitive

119 Zentall (2005) 


Psychosocial Treatment Recommendations

- **Setting the Student up for Success**
 - Student Self-Monitoring
 - Teach students to use self-monitoring strategies before beginning tasks such as asking:
 - "What is my problem?"
 - "What is my plan?"
 - "Am I following my plan?"
 - "How did I do?"
 - This technique has been shown to improve selective attention, sustained attention, and language as well as reducing impulsivity.

120 Zentall (2005) 

Psychosocial Treatment Recommendations


- **Setting the Student up for Success**
 - Student Self-Monitoring
 - Provide cues (taped signals) for students to self-monitor their behavior.
 - Self monitoring provides immediate behavioral feedback and can help students to control their actions.
 - Mechanical devices such as PDAs can also be used to signal a child to attend to and record their behavioral or emotional state.
 - Having students self-reinforce (stickers, stars) or chart their performance has been shown to increase on-task attention and persistence.
 - Placing mirrors where the student can see him or herself has also been shown to increase persistence and productivity.

121 Zentall (1989; 2005) 

Psychosocial Treatment Recommendations


- **Example of a Self-Monitoring Chart:**

	Tone 1	Tone 2	Tone 3	Tone 4	Tone 5
My Rating					
Teacher Rating					
Teacher on-task rating	=				
My on-task rating	=				
Agreement	=				

122 Brock, Cummings, & Seiver (2004) 


Psychosocial Treatment Recommendations

- **Setting the Student up for Success**
 - Practice
 - Provide extra practice
 - Students with AD/HD benefit most from short repeated exposures to new material.
 - Provide "attention training" sessions
 - Direct instruction and practice on selectively attending to visual and auditory cues significantly improves ability to selectively attend to important material.

123 Zentall (2005) 


Psychosocial Treatment Recommendations

- **Setting the Student up for Success**
 - Feedback
 - Use Cross-Modal Response Options
 - Feedback that is delivered in a different mode than the task being performed (e.g., providing auditory feedback for visual math problems).
 - Response options are different from the task (e.g., problems presented orally, with answers presented visually).
 - Allow the student to ...
 - differentiate information they are taking in from information they are putting out.
 - differentiate information they are receiving about their performance.

124 Bennett, Zentall, Giorgetti-Borucki, & French (2005) 


Psychosocial Treatment Recommendations

- **Setting the Student up for Success**
 - Task Modifications
 - Visual vs. Auditory Presentation
 - Oral reading has been shown to produce more accurate reading comprehension than silent-reading.
 - Structure
 - Increased structure and predictability in class routines and activities is helpful for students.
 - Choice Making
 - Allowing AD/HD students to make choices about assignments (e.g., which book to read) improves on-task behavior.

125 Raggi & Chronis (2006) 


Psychosocial Treatment Recommendations

- **Setting the Student up for Success**
 - Social Skills Training
 - Mixed efficacy
 - Debate over skill deficit vs. performance deficit
 - Assertion skills are the most positively impacted area.
 - Results are improved when social skills groups are diagnostically heterogeneous
 - May be contraindicated for AD/HD- Inattentive type.
 - Inattentive type students show greater gains than combined type students.
 - This group is thought to lack knowledge about appropriate social skills, while combined type students typically have knowledge, but fail to use their skills.

126 Antshel & Remer (2003) 


Psychosocial Treatment Recommendations

- **Setting the Student up for Success**
 - Social Skills Training: Components of Effective Programs
 1. Brief introduction to the skill.
 2. Majority of session involves playing a supervised game or activity with prompting and coaching on using the skill.
 3. A short debriefing with feedback and reinforcement for demonstrating the skill.
 4. Skills taught should be generalized across settings.
 - Skills should be practiced at school and at home
 5. Students should be encouraged to set and monitor specific social skills goals;

127 Rief (2005) 


Psychosocial Treatment Recommendations

- **Setting the Student up for Success**
 - Peer Tutoring
 - Children with AD/HD are paired with a peer tutor to work an academic tasks.
 - Allows for one-to-one instruction tailored to the student's need and pace.
 - Frequent immediate feedback is provided by the tutor.

128 Raggi & Chronis (2006) 


Psychosocial Treatment Recommendations

- **Setting the Student up for Success**
 - Class-Wide Peer Tutoring (CWPT)
 - Increases in on-task behavior and accuracy
 - Students are trained in tutoring and randomly paired
 - Tutors are provided with a script of academic material (e.g., math problems).
 - Items are presented orally to the tutee.
 - Points are awarded for correct responses and feedback is given for incorrect responses.
 - The item list is repeated multiple times.
 - Students switch roles.
 - Teachers monitor the tutoring sessions and provide assistance as needed.

129 Raggi & Chronis (2006) 


Psychosocial Treatment Recommendations

- **Setting the Student up for Success**
 - Computer-Assisted Instruction (CAI)
 - Improves both academic performance and on-task behavior.
 - Targets specific instructional objectives using a computer program.
 - The most effective programs are presented in a game-like format, without animation, and offer an unlimited response time.
 - Math-based programs have been shown to be more effective than reading programs.
 - Easy to implement in the classroom.

130 Raggi & Chronis (2006) 


Psychosocial Treatment Recommendations

- **Setting the Student up for Success**
 - Strategy Training
 - Direct Note-Taking Activity (DNA)
 - DNA training shown to significantly increase on-task behavior, scores on assignments, and comprehension.
 - Students are explicitly taught strategies for effective note-taking. (e.g., dividing notes into main ideas and supporting details).
 - Prompting is gradually faded until students are able to take accurate effective notes.

131 Raggi & Chronis (2006) 

Psychosocial Treatment Recommendations


- **Setting the Student up for Success**
 - Strategy Training
 - Challenging Horizons Program (CHP)
 - Significant GPA improvements seen after two semesters.
 - Combination of psychosocial and educational interventions including DNA, study skills training, organizational skill training, and parent training.

132 Raggi & Chronis (2006) 

Psychosocial Treatment Recommendations

- Setting the Student up for Success
 - Homework Interventions
 - Parent-Training Programs
 - Parents taught to ...
 - establish consistent homework routines
 - provide a quiet homework environment
 - help their children prioritize
 - break down large assignments
 - set goals


133 Raggi & Chronis (2006)



Psychosocial Treatment Recommendations

- Setting the Student up for Success
 - Homework Interventions
 - Home-School Communication
 - Shown to increase homework accuracy and completion rates.
 - Parents and teachers work together to address the students needs, set goals, and manage homework.


134 Raggi & Chronis (2006)



Psychosocial Treatment Recommendations


- Encouraging Adaptive Behavior
 - Increase the intensity of positive feedback
 - Increase the frequency of positive feedback to encourage practice of new skills.
 - Students performed better on rote tasks when there was a higher level of verbal praise and immediate reinforcement.
 - Increase the immediacy of feedback
 - Immediate feedback increases stimulation and helps sustain attention.
 - Students with AD/HD are more influenced by current rewards than history of past rewards.

135 Zentall (2005)




Psychosocial Treatment Recommendations

- Encouraging Adaptive Behavior
 - Immediate verbal praise should be delivered frequently.
 - Praise is most effective when it is specific and related to the desired behavior.
 - Praise is most effective when given immediately following appropriate behavior.
 - Praise should be increased in relation to negative feedback.

136 


Psychosocial Treatment Recommendations

- Encouraging Adaptive Behavior
 - Functional Assessment and Behavior Intervention Plans
 - Before a behavior intervention plan (BIP) is implemented, a functional assessment (or analysis) of behavior (FBA or FAA) should be conducted to evaluate the function of the student's behavior.
 - Once the function of the student's behavior is understood, a BIP should be implemented to make the target behavior irrelevant, ineffective, and inefficient.
 - The BIP should focus on providing the student with an appropriate means for obtaining the desired function of the target behavior.

137 

Psychosocial Treatment Recommendations

- Encouraging Adaptive Behavior
 - Beginning a BIP
 - Ensure the student understands expectations and procedures.
 - Behaviors to be rewarded are clearly operationally defined and understood.
 - Behaviors framed in positive language focusing on desired behavior.
 - Behavior contracts are a useful way of helping the student understand the goals and contingencies of the plan.

138 Brock, Cummings, & Seiver (2004) 

Psychosocial Treatment Recommendations

- Encouraging Adaptive Behavior
 - Contingency Management Options
 - Self-Monitoring
 - Token Economy Systems
 - Student earns points for appropriate behavior that can be used to "buy" desired rewards.
 - Response Cost Systems
 - If the "cost" is too frequent AD/HD students may become frustrated.
 - Must include the opportunity to earn points back.
 - Time Out
 - Use the least restrictive form.
 - Time out from attention.

139



Psychosocial Treatment Recommendations

- Encouraging Adaptive Behavior
 - Daily Mini-Conferences
 - One to two minute mini-conferences between the teacher and student should be scheduled several to discuss behavior.
 - The more conferences held the better, but it must be feasible for the teacher.
 - During conferences, teacher gives verbal praise for appropriate behavior in the last period.
 - Teachers can use a tally sheet to mark or place a sticker on the sheet and further reinforce behavior.
 - Encouragement of, and instruction on, behaviors not displayed is given.

140

Brock, Cummings, & Seiver (2004)



Psychosocial Treatment Recommendations

- Encouraging Adaptive Behavior
 - Example of a Mini-conference chart

Daily Tally Sheet								
Work Period	Begin work immediately	Work quietly	Remain seated	Ask good questions	Work carefully	Follow instructions	Complete Assignments	Total
My daily total								
My daily total goal for this week:								

141

Brock, Cummings, & Seiver (2004)



Psychosocial Treatment Recommendations

- Encouraging Adaptive Behavior
 - Daily Rewards
 - Before implementing a BIP, student and teacher should set a daily behavior goals.
 - The student can be encouraged to set own goals as appropriate.
 - However, the goal should be set low in the beginning to ensure success and gradually increased.
 - If the student reaches daily goal, he or she would be given rewards as specified by the behavior contract.

142

Brock, Cummings, & Seiver (2004)



Psychosocial Treatment Recommendations

- Encouraging Adaptive Behavior
 - Weekly Rewards
 - A weekly reward can be used.
 - Are typically of greater magnitude than daily goals.
 - Are most effective with older students.
 - Should not replace daily and immediate rewards.
 - Weekly progress can be graphed during a mini-conference.

143

Brock, Cummings, & Seiver (2004)



Psychosocial Treatment Recommendations

- Encouraging Adaptive Behavior
 - Example of a weekly rewards chart

WEEKLY CONTRACT					
Day	Monday	Tuesday	Wednesday	Thursday	Friday
Daily Total					

My weekly total goal is

This week's total

If I meet my weekly goal, I will earn _____

144


Brock, Cummings, & Seiver (2004)



Psychosocial Treatment Recommendations

- Encouraging Adaptive Behavior
 - Concluding Comments
 - It is important to select goals that are important to student learning.
 - Students should only be rewarded when they clearly deserve it.
 - As the student progresses, external rewards should be faded. The goal is to move the student from extrinsic motivation to intrinsic motivation as soon as possible.

145



Psychosocial Treatment Recommendations

- Connecting Diagnosis to Treatment

Student	Initial	Following 1	Following 2	Following 3	Following 4
Age					
Sex					
Race					
Ethnicity					
Religion					
Marital Status					
Occupation					
Education					

Additional Comments and Treatment Notes:


Date: _____ Psychologist _____

Date: _____ Psychologist _____

Date: _____ Psychologist _____

Date: _____ Psychologist _____


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A Note About Diet


- Free fatty acid supplementation produced small but significant reductions in **ADHD** symptoms even with probably blinded assessments, although the clinical significance of these effects remains to be determined.
- Artificial food color exclusion produced larger effects but often in individuals selected for food sensitivities.

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Assessment, Identification, & Treatment of ADHD at School

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