Teaching Reading to Students with ADHD and Reading Difficulties

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Agenda

- Current scientific understanding of ADHD
- Treatment of ADHD
- ADHD and reading difficulties (RD)
- Effective reading intervention for students with ADHD and RD
- Supporting students with reading difficulties and ADHD

What is ADHD?

- ADHD is a neurologically-based condition.
- It is heavily influenced by genes
- It is not caused by bad parenting.

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Three Types of Attention-Deficit/Hyperactivity Disorder

- Primarily Inattentive Type
- Primarily Hyperactive/Impulsive Type
- Combined Type

- Most children present symptoms of inattention, hyperactivity, *and* impulsiveness, but some may not meet clinical levels.
- Hyperactivity tends to decrease with age.

Formal Definition of ADHD

- "A persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development"
- Identified with a checklist of symptoms/behaviors
- Several symptoms present before age 12
- Symptoms are present in two or more settings
- "Symptoms clearly interfere with, or reduce the quality of, social, academic, or occupational functioning"

Diagnostic and Statistical Manual of Mental Disorders: 5th Edition

Prevalence

- 4-10% of population diagnosed with ADHD

Severity

- ADHD can be mild, moderate, or severe.
- Depends on symptoms and functioning.

Is ADHD Over-Diagnosed?

- Studies indicate that this is *not* the case
- But…it is sometimes *mis*diagnosed.
- Children in these groups tend to be *under*-diagnosed:
  - Girls
  - Inattentive students who do not have hyperactivity
  - Children from minority backgrounds
  - Children who live in poverty
  - Children who are smart and/or likable

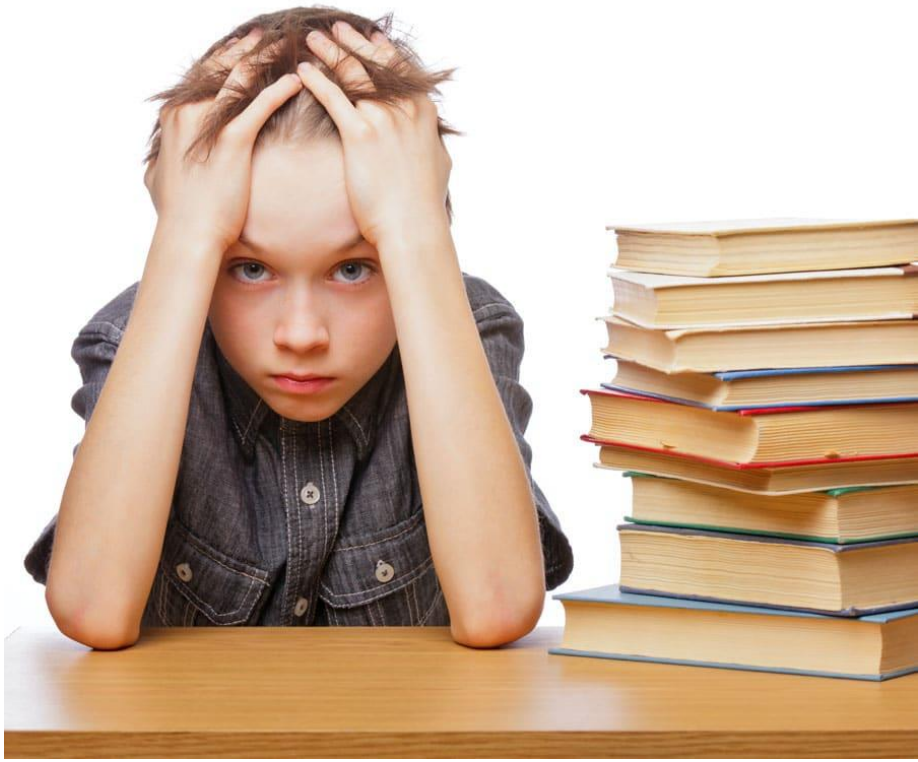
Characteristics of Persons with ADHD

Persons with ADHD have significant differences in the size and function of brain areas that play a role in a set of important executive functions, including:

- Working Memory
- Planning and Problem-Solving
- Self-Regulation

Working Memory

- The ability to hold information in the brain while using it in some process
- “The brain’s worktable”
- Used in many processes, including sounding out words and reading comprehension



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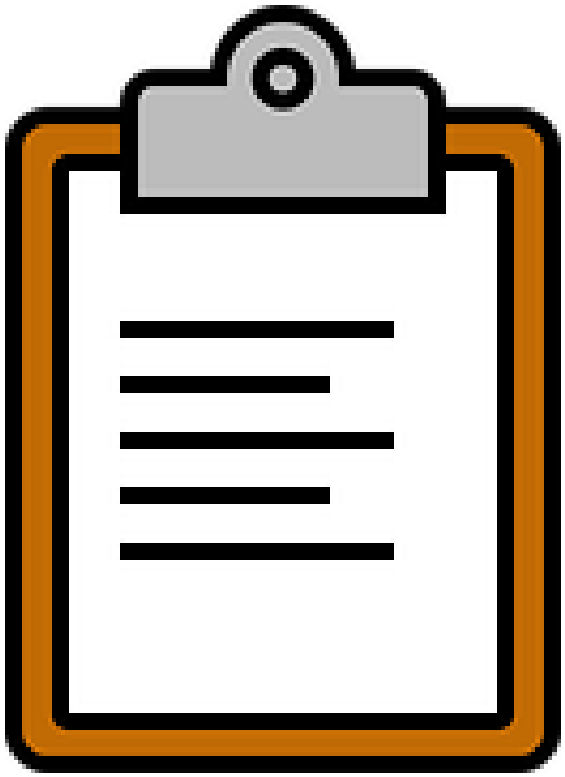
Planning and Problem Solving

- Dr. Russell Barkley calls ADHD "Time Blindness"
- Difficulty organizing behaviors across time to work toward a goal.
- Difficulty using lessons from the past to plan for the future.
- They are governed by the "now".

Planning and Problem Solving

- Difficulty selecting an appropriate strategy or plan
- Difficulty following a multi-step strategy to reach a goal



Self-Regulation: The ability to…

…Change course when needed; stop or start doing something in response to feedback

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Self-Regulation: The ability to…

…Control one's own emotions; calm yourself down when upset; restrain yourself from lashing out when you perceive you have been attacked

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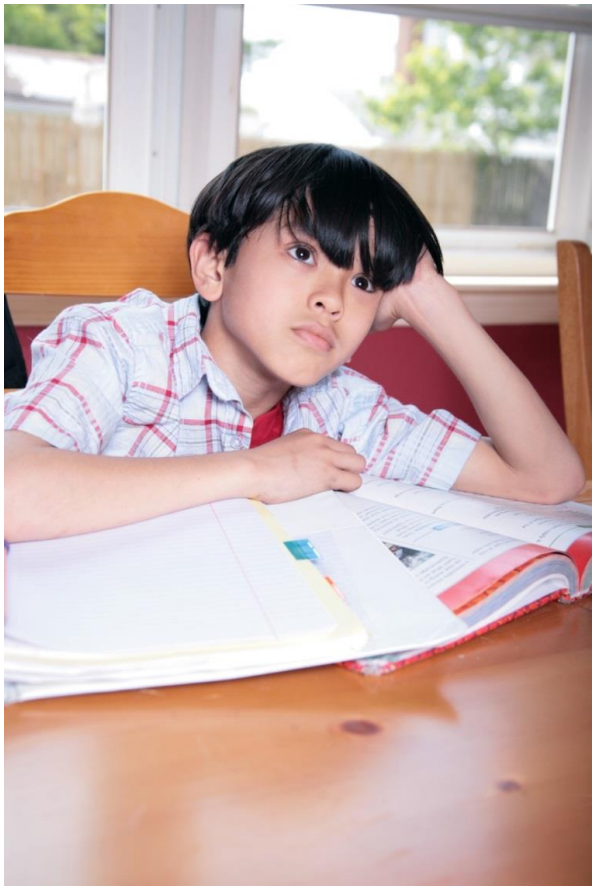
Self-Regulation: The ability to…



…Regulate attention and sustain engagement with a task; make yourself keep paying attention even when a task is boring or difficult; persevere in the face of difficulty

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Self-Regulation Includes

- Self-Talk
- Self-Motivation
- Self-Monitoring

Oppositional Defiant Disorder (ODD)

About 40% of children with ADHD and up to 65% of teenagers with ADHD have been found to have significant ODD behaviors

- Noncompliant with authority
- Poor temper control
- Argumentative

Stop and Think

- Do these descriptions "ring true" for any children/youth you are working with?

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Treating ADHD

- No “cure”
- Goal is to improve symptoms and functioning
- Two evidence-based approaches
  - Medication
  - Behavioral intervention
- American Academy of Child and Adolescent Psychiatry (2027) recommends combining the two approaches.

ADHD Medications

- Very well-supported by scientific research
- Must be carefully prescribed
- Must be carefully monitored: functioning and side effects
  - Information from parents
  - Information from teachers/school personnel
- Doctors can change the dosage, change the medication, or remove the child from medication based on data

Behavioral Interventions

- Purposeful changes, approaches, or activities implemented to bring about improvement in students' social, behavioral, and academic outcomes.
- Implemented in school, home, or both

Behavioral Interventions (Examples)

- **Modify the classroom environment** (increase structure, make rules visual and concrete; allow movement when appropriate)
- **Modify instructional approaches** (teach in small groups, increase active involvement)
- **Home-school communication and collaboration**

Behavioral Interventions (Examples)

- **Positive reinforcement** (*immediate* rewards for the desired behavior)*****
- **Response-Cost** (clear, *immediate* consequences for undesired behavior)
- **ALWAYS tell them WHY** they are being rewarded or having negative consequence.
- **Time Out** from Reinforcement
  - Time out with a task?

“Zoom In; Zoom Out”

- TEACH the student to:
  - “Zoom In” to pay attention to the task at hand.
  - “Zoom Out” to consider the long-term goal when they are too tied up in one activity
- Clearly explain and model the procedure
- Have the student *practice* zooming in and out
- *Cue the student* to zoom in and zoom out when appropriate.

Let’s Practice!

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ADHD and Reading

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Executive Functions

Working Memory

Planning and Problem Solving, Use of Time

Self-Regulation: Actions, Impulses

Self-Regulation: Thoughts, Attention, Motivation

Self-Regulation: Emotions

Turn and Talk

- How might executive function limitations affect reading performance and growth?

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Word-Level Difficulties in Students with ADHD

- Problems with word recognition, decoding, and encoding in the primary grades
- Older students may still struggle with decoding unknown words and may not be able to apply strategies for decoding multi-syllable words.
- Impulsiveness leads to haphazard word identification based on first letters or context.
  - More feedback! ***
- Frequent difficulties with self-monitoring

Fluency Difficulties in Students with ADHD

- Frequently impaired in reading fluency
- Usually due to word reading difficulties
- May also be due to problems with sustained attention, processing speed, and working memory

Comprehension Difficulties in Students with ADHD

- Reading for understanding requires sustained and flexible attention
- Have difficulty learning and using strategies
- Long texts present problems with sustained attention.

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Comprehension Difficulties: Flexible Attention

- Must *integrate* information from
  - The part of the text currently read
  - What was previously read
  - Background knowledge
- Monitoring meaning requires comparing these sources of information and recognizing when they do not align!

Reading Instruction for Students with ADHD and RD

- Students with ADHD + RD benefit from **explicit, well-organized reading instruction**
- Instruction should be **quick-paced and include active student involvement**.
- Instruction should be delivered in **small groups.**
- Students will need **daily time spent reading text** with teacher support and feedback.

Explicit Instruction

- Clearly *explain* or *show* students what you want them to learn
- Don't require that students figure out what they should learn

Students who are easily confused are more likely to be successful with explicit instruction.

Explicit Instruction Routine

Model and teach ("My turn!")

Show students the correct way.
Provide clear explanations.

Guided practice ("Do it with me.")

Students do it with teacher support.

(*Teacher corrects all errors*.)

Independent practice ("You do it")

Students practice ***alone*** as teacher observes *and provides scaffolding and feedback.*

Cumulative practice

Students practice new items along with items already learned.

Please…

- Tell me how it works.
- Show me how to do it.
- Watch me do it and tell me if I'm doing it right.
- Help me practice until it gets easier.

…Sometimes you might have to show me again.

Students with Both ADHD and Reading Disabilities (Including Dyslexia)

- Comorbidity between Reading Disability and ADHD typically ranges from 25% to 40%. Faraone, Biederman, Weber, & Russell, 1998; Willcutt, Pennington, Olson, Chhabildas, & Hulslander, 2005
- As a rule of thumb, about 25% of students with reading disabilities also have ADHD, and vice versa.

As a group, children with *both* ADHD and Reading Disabilities (RD) have…

- More severe reading difficulties than with children with RD alone
- More severe attention difficulties than children with ADHD alone
- More severe academic failure and lower grades
- More severe social impairment than those with ADHD alone
- Weaker response to reading interventions
- More severe and pervasive neurocognitive impairment
- Poorer long-term social and occupational outcomes

Seidman, 2001; Willcutt et al., 2007, 2010

Treatments for ADHD & RD

Well-validated interventions exist for each.

- ADHD: medication + behavioral therapy
- RD: explicit, systematic reading instruction

Does ADHD Treatment Improve Reading Outcomes?

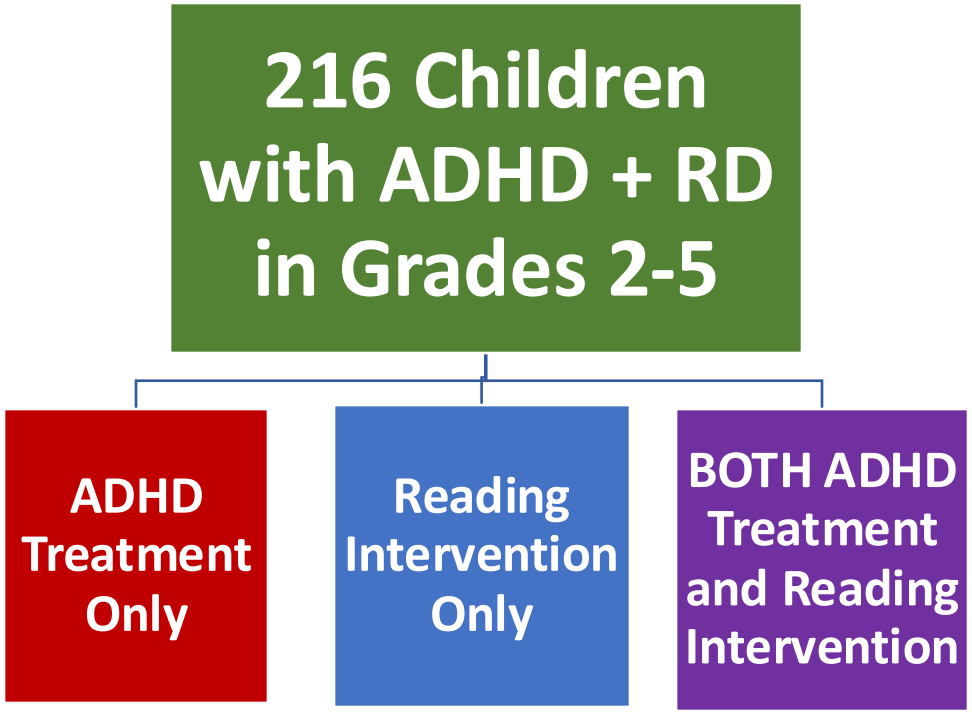
For a student with both reading disabilities and ADHD:

- If you just treat the ADHD, will reading improve?
- If you just provide intensive reading intervention, will ADHD symptoms improve?

The ICARD Study: Interventions for Children with ADHD and Reading Difficulties

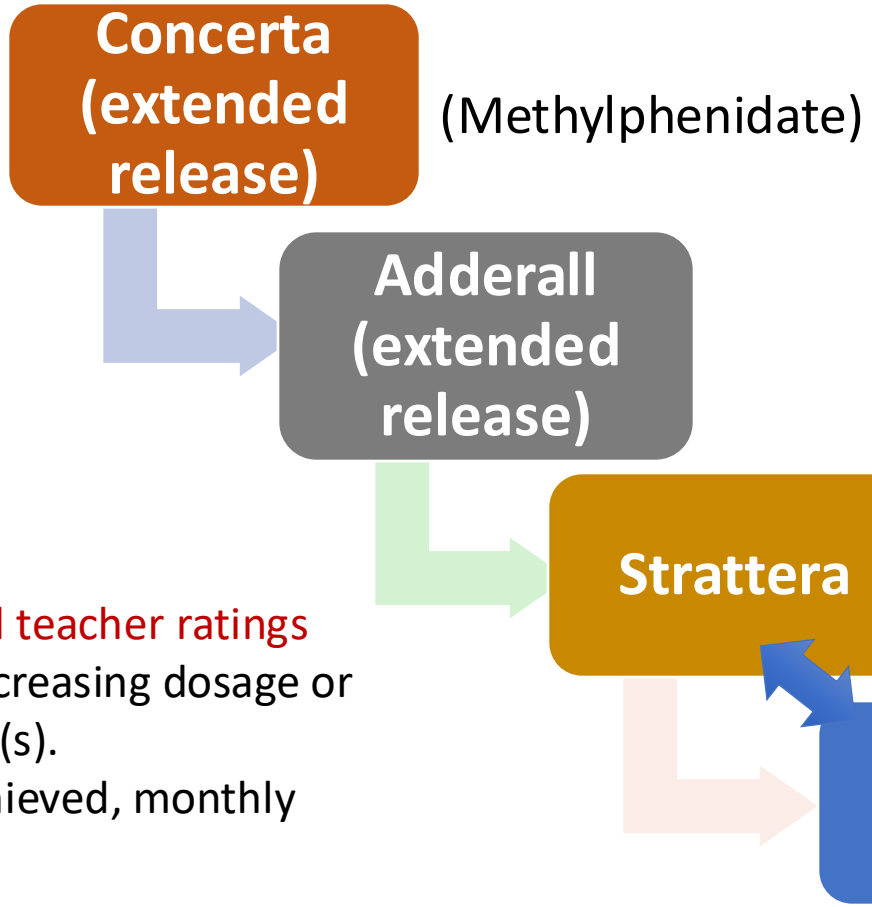
- Funded by the National Institute of Child Health and Human Development, National Institutes of Health
- 2010-2016, Houston and Cincinnati-Area Schools
- Denton, Tamm, Schatschneider, & Epstein, 2019; Tamm, Denton, et al., 2017.

Children Were Randomly Assigned to 1 of 3 Groups



16 Weeks (not counting school holidays)

ADHD Treatment: Carefully Managed Medication



- Start low dose.
- Use weekly parent and teacher ratings to determine either increasing dosage or alternative medication(s).
- Once optimal dose achieved, monthly maintenance visits

I-CARD ADHD Treatment: Behavioral Parent Training

9 group meetings delivered by a psychologist

- Review of ADHD and Introduction to Treatment
- Behavior Modification Principles
- Compliance Training
- Token Economies/Point Systems
- Daily Report Cards (School-Home Reward System)
- Response Cost
- Time Out
- Managing Homework
- Review and Generalization