ADHD

- A neurobiological disorder characterized by developmentally inappropriate degrees of: *inattention, impulsivity,* and sometimes *hyperactivity.*
Types (Presentations) of ADHD

1. Predominantly inattentive
2. Predominantly hyperactive & impulsive
3. Combined

ADHD

- ADHD is now recognized as a disorder in the development of *executive functions* – a person’s self-regulatory abilities (the underlying problem).
ADHD Research Indicates

- The frontal lobes (particularly the prefrontal cortex and extended neural networks) are the primary center of executive functions.
- This region of the brain has been found to be underactive and less mature in children and teens with ADHD.

ADHD Research Indicates

- Not enough neurotransmitters in all the brain circuits.
- These brain chemicals are not being released and reloaded effectively.
What are Executive Functions?

- Management functions (overseer) of brain
- Self-directed actions we use to accomplish goals and solve problems
- Range of central control processes and essential self-regulating skills

Executive Functions

- Behavioral inhibition
- Working memory (mental desktop for holding info active while working on it)
- Organizing, planning, and prioritizing
- Time awareness & management
- Arousal & Activation (initiation)
Executive Functions

- Sustaining focus, alertness, and effort
- Goal-directed persistence
- Self-regulation & control of emotions
- Shifting/flexibility
- Self-monitoring, metacognition

Metacognition

Self-Awareness
Self-Monitoring
Self-Assessment
Executive Function Analogy

By Thomas E. Brown, Ph.D.

- EF is the conductor’s role in orchestra (integrate, control)
- EF deficiency = a poor or absent conductor

ADHD

- Approximate 30% delay in development of executive functions
Common School Performance Difficulties for Students with ADHD

- Organization & planning
- Time awareness and management
- Study skills and test-taking
- On-task behavior and work production
- Following rules and directions
- Behavioral & social
- Academic (reading, math, written language)

Also be aware…with ADHD

- Variability of performance & production
- Unable to sustain effort for long-term goals
- High rate of coexisting conditions (comorbidity)
## ADHD & Coexisting Conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning disabilities (LD)</td>
<td>25-50%</td>
</tr>
<tr>
<td>Oppositional Defiant Disorder</td>
<td>40-65%</td>
</tr>
<tr>
<td>Anxiety Disorder</td>
<td>25%-35%</td>
</tr>
<tr>
<td>Conduct Disorder</td>
<td>10%-25% of children; 25%-50% of teens</td>
</tr>
<tr>
<td>Depression</td>
<td>10%-47%</td>
</tr>
<tr>
<td>Bipolar</td>
<td>1%-20%</td>
</tr>
<tr>
<td>Tourette’s</td>
<td>7% (but 60% of those with Tourette’s also have ADHD)</td>
</tr>
</tbody>
</table>

Some Key Factors for School Success

- Proactive classroom management... *problem prevention* (e.g., environmental engineering)
- High rate and frequency of reinforcement
- Engaging instruction and motivating lessons
- Scaffolds/supports/ accommodations
- Teacher flexibility and willingness to put forth the extra time & effort
- Communication, collaboration, teamwork
- Realistic expectations that take into account EF delays
- Explicit teaching of EF skills
Strengthen EF Skills

- Organization strategies
- Time management strategies
- Planning strategies
- Managing emotions
- Problem-solving strategies
- Metacognitive strategies

Collaborative Efforts

- In the evaluation process
- Developing an intervention plan
- Monitoring & follow-through
- Providing reinforcement
- COMMUNICATION
ADHD Research Indicates

• Heredity is number 1 cause of ADHD.

• Multiple genes are involved in ADHD (e.g., dopamine receptor, dopamine transporter).

Research-Validated Treatments for ADHD

1. Medication therapy
2. Behavioral therapy
Behavioral Treatment & Management of ADHD

- Increased frequency and amount of feedback and reinforcement
- Behavior modification techniques (home and school-based)
- Individualized interventions (e.g., daily report cards/home-school notes, contracts, token economy system, self-monitoring and self-regulation strategies)

Treatment Components

- Education re. ADHD
- Medical
- Psychosocial (behavioral)
- School Supports/Accommodations
Attention Grabbers

- Visual and auditory signals
- Call/response (e.g., Whole Brain Teaching’s “Class, Class”... “Yes, Yes”)
- Liven it up (props, visual aids, music, sound effects)
- Novelty
- Enthusiastic and animated style

Attention, Activation, On-Task Strategies

- Directions: brief, read together, students repeat before beginning task
- Accessible materials
- Color, underline, circle important parts of task
- Get them started, or reward starting right away
- Frequent “check-ins”
- Instruction in short segments (e.g., teach, they teach, teach)
- Assign well-focused buddies/partners.
Attention, Activation, On-task Strategies

- Providing a task card/checklist
- Set mini-goals & rewards
- Break the task down into smaller segments, checked after completion of each part.

Strategies for Engagement

- Multisensory, multimedia (tech tools)
- Variety of instructional formats
- Active learning
- High response opportunities (e.g., response cards)
Attention & On-task Strategies

- Cueing/prompting for attention
- Discrete redirection to task
- Incentives (e.g., middle school math example)
- Beat the clock challenges

“Beat the Clock”

Goal: Working efficiently for a 20-minute period of time.

Set timer in two 10-minute sessions (or four 5 min)
Attention and On-Task Strategies

- Self-monitor number of redirects or reminders to pay attention and stay on-task.

Combat “Attention-Busters”

- Distractions
  - Boredom
  - Fatigue
Strategies & Tools to Aid Focus

- **Reading** (e.g., whisperphone, marker, post-its)
- **Math computation** (highlight processing signs)
- **Writing** (graphic organizers, rubrics, checklists)

Working Memory Difficulties

- Trouble with multi-step directions
- Not remembering instructions (may look like noncompliance)
- Incomplete work
- Forgets to record assignments and bring required materials
- Forgets what he or she wants to say
Working Memory Difficulties

- Poor reading comprehension skills
- Frequently needs to re-read
- Struggles with the writing process
- Forgets steps in a process (of academic tasks and classroom procedures)
- Many math computation and problem solving errors
- Poor note-taking skills

Working Memory Supports

- Minimize WM demands and overload.
- Externalize information the student needs to remember or use.
Working Memory Supports

• Provide auditory and visual reminders and instructions.
• Post assignments and other important information in a consistent location.
• Post schedules and refer to them frequently.

Working Memory Supports

• Use “to do” lists, checklists and task cards.
• Practice procedures and routines until automatic.
• Teach mnemonics.
• Provide memory aids (anchor charts, word walls, multiplication chart/table, number lines)
• Provide visual reminders of expectations.
**Before Leaving Class**

- Work turned in
- Papers in notebook
- Homework recorded
- Pack needed books & supplies

**Working Memory Supports**

Use technology to compensate:
- Self-reminder messages
  - (on smartphone or other device)
- Email in homework
- Cell phone alarms or vibrating watch alarms
- Snapshots
Prevent Problems: Alter the Antecedents

- Differentiate instruction and provide many opportunities for student choice to boost interest.
- Instruction that is meaningful, interesting, & engaging
- Address skill deficits.
- Make effortful tasks less daunting and/or more appealing.

Prevent Problems: Alter the Antecedents

- Close monitoring & supervision
- Increased cueing and prompts
- Clear rules and consequences
- Automatic procedures and routines
- Increase opportunity for movement and active participation
- Provide environmental supports and accommodations.
Environmental Accommodations

• Preferential Seating
• Standing work stations
• Office area/study carrel, 2-desks
• Providing adaptive supports
• Auditory cues and prompts
• Visual/non-verbal cues & prompts

Post-It Note Cues/Communication

- This is a friendly warning.
- Watch your choices.
- On-task, please.
- Do you want help?
- Thanks for your cooperation.
Class Incentive Systems

• Earning tokens (points, tickets, class $, links on chain, marbles, beads) for class rewards
• Earning minutes/time for desired activities
• Mystery motivator
• Behavior Bingo
• Chart moves

Response Costs

• Start with x tokens (minutes, points, class currency) and lose for specified behaviors.
Reverse the “praise deficit”.
It takes changing the interactions:

4:1
(minimally)

Recognition, Acknowledgement, and Specific Praise

“I really appreciate how you ______.”
“I appreciate the self-control you are using.”
“I noticed how hard you were working on ____.”
“I see the effort you are showing.”
“Thank you for the good choice you just made.”
Inhibition & Self-Regulation Strategies

- Immediate feedback and reinforcement (www.classdojo.com)
- Exercise, movement breaks
- Cue cards on desk and private signals
- Transition warnings and supports

Cue and reinforce at “point of performance” in all school settings
Have student repeat directions, restate in own words before beginning tasks.
Self-Regulation Strategies

- Self-talk
- Breathing
- Mindfulness/yoga
- Counting
- Visualization
- Fidget toys
- Self-monitoring

To Aid Calming

- Physical activities
- Assign a silent or calm activity.
- Offer a cool down break and pass.
- Calming area (low stimulation, non-punitive)
- Private signal for take a break
- Watch for warning signs and intervene.
With “Challenging” Kids

Remember **Q-TIP**
- Quit
- Taking
- It
- Personally

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**Behavior Support Websites**

*See handout Sandra’s Recommended Websites and Other Resources under:*

Resources for Managing Behavior and Self-Regulation Interventions
Homework Steps

- Know what the assignment is
- Record the assignment
- Bring the required materials home
- Do the homework
- Return the homework to their backpack
- Turn in the homework

Organization & Homework Support

- Require backpack and 3-ring binder (with tabbed dividers & pencil pouch for small supplies).
- Provide handouts already 3-hole punched.
- Use of simple pocket folder for younger students
Organization & Homework Support

- Allow alternative of accordion file.
- Consistent use of planner/agenda, calendar, or assignment sheet.
- Use a month-at-a-glance calendar to track long-term assignments.

Organization & Homework Support

- Color code: schedule, books, notebooks, folders, unit sheets, handouts.
- Walk through the recording of assignments.
- Partners/teams provide organizational assistance and planner checks.
Organization & Homework Support

- Check and initial assignment calendar/planner, and have parents do so.
- Work-in-progress folder
- Keep teacher copy of student planner or assignment sheet filled out & accessible

Organization & Homework Support

- Post assignments, syllabus, project timelines, materials needed, etc. in classroom and on class website.
- Provide a second set of books for home.
- Be responsive to parent feedback and frustration about homework difficulties.
Organization & Homework Support

- Collect homework at start of class.
- Use a consistent system for collecting homework.
- Provide enough time for students to put materials away and get organized before dismissal.
- Schedule a time (e.g., weekly) for cleaning/organizing workspace and materials.
- Encourage locker organization

Organization & Homework Support

- Help student get started on homework assignments/projects at school.
- Teacher contacts parent/guardian if x number of assignments are missing.
- Allow student to email homework to you.
- Use a homework tracking sheet/monitoring form.
Homework & Time Management Support

- Chunk down long-range assignments (with interim due dates, heads up to certain parents).

Long-Term Projects: The EF Nightmare

- Planning
- Organizing
- Getting started
- Estimating time
- Self-monitoring
- Meeting deadlines
Time Awareness & Self-Monitoring

- Practice time estimation.
- Write begin/end time on paper.
- Student track length of time it takes to complete assignments.

Time Management Supports & Accommodations

- Provide extended time as needed.
- Consider more flexibility with regard to late work.
- Use of electronic devices with functions of calendars, alarms, to-do lists, reminder messages.
ADHD: Reading difficulties related to...

- Inattention/distractibility (e.g., reading silently)
- Poor working memory
- Poor self-monitoring & application of metacognitive strategies
- Have difficulty sustaining the mental effort, and fatigue/bore easily

Students with ADHD Often

- Have “spotty” comprehension
- Lose their place frequently
- Forget what they read
- Have difficulty staying focused reading
- Avoid reading (non-choice material)
- Have more significant reading problems (e.g., ADHD + dyslexia)
Math Strategies & Supports

- Use color for each step in process when working on board or projector.
- Increase amount of practice and review.
- Software, apps, or online programs for drill and practice of basic skills.
- Reduce number of problems assigned.

Math Strategies & Supports

- Provide more immediate correctness feedback.
- Provide time to let students work with each other solving problems, checking and re-teaching.
- List steps and procedures to multi-step problems.
- Keep sample problems on board & desk copies.
- Memory aids (anchor charts, x facts)
Why is Writing is Such a Struggle?

- Planning & Organization
- Memory
- Language
- Spelling
- Grapho-Motor Skills
- Editing
- Self-Monitoring
- Speed of Written Output & Production

Writing Accommodations

- Pre-Writing and Organizational Supports
- Editing Assistance
- Shortened/modified written assignments
- Use of scribe, note-taking assistance, pre-made notes
- Alternatives/Options to Writing Assignments
- Assistive technology
Pre-Writing Strategies

- Brainstorming
- Partner/Group Talk
- Recording ideas on audio recorder
- Writing Topic Collage Folders
- Charting or webbing words/ideas related to topic
- Planning forms and graphic organizers
- Software & apps (Inspiration, Mindjet, MindManager, Microsoft OneNote, Evernote)
- Prewriting mnemonics

BOTEC

Essay Express (Research ILD & FableVision, 2005) and adapted by Kaufman (2010)

Brainstorming
Organizing (or ordering)
Topic (or thesis)
Evidence (or examples)
Conclusion
More EF Supports & Strategies

- Self-monitoring (recording progress with charts, graphs, checklists); self-evaluation using rubrics

Keys to School Success: Teacher

- Knowledge and understanding of ADHD
- Developing and drawing upon students’ strengths
- Flexibility and willingness to support and accommodate
- Belief in the student...Doing what it takes
The content of this webinar and slides come from the following books & resources by Sandra:

**BOOKS published by Jossey-Bass:**

**DVDs produced by ERS** ([www.sandrarief.com](http://www.sandrarief.com))
- *ADHD & LD: Powerful Teaching Strategies & Accommodations (with RTI)*
- *Successful Schools: How to Raise Achievement & Support ‘At-Risk’ Students*

**LAMINATED CARDS published by National Professional Resources**
- *Section 504: Classroom Accommodations* (4-page laminated card)
- *ADHD & LD: Classroom Strategies At Your Fingertips* (6-page laminated card, also available in Spanish)
- *Executive Functions: Practical Applications in the Classroom* (4-page card)

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**Thank you!**

[www.sandrarief.com](http://www.sandrarief.com)