

**INTERVENTIONS FOR EXECUTIVE  
FUNCTION DIFFICULTIES IN  
CHILDREN**

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**Common Problems Described by  
Parents**

- ☐ Lazy; can't get started; procrastinates
- ☐ Jumps from one thing to another; never finishes anything
- ☐ No sense of time; always late; last minute
- ☐ Forgetful; absent minded; never remembers what he's studied

**Common Problems Described by  
Parents**

- ☐ Careless; never learns; makes same mistakes over and over
- ☐ Disorganized; can't find anything; slob
- ☐ Gets stuck; Can't let go
- ☐ Avoids; lies

**What Are Executive Functions?**

- ☐ Dawson & Guare (2004)  
"Human beings have a built in capacity to meet challenges and accomplish goals through the use of high-level cognitive functions called executive skills. These are skills that help us decide what activities or tasks we will pay attention to and which ones we will choose to do..."

**What Are Executive Functions?**

...Executive skills allow us to organize our behavior over time and override immediate demands in favor of longer-term goals. Through the use of these skills we can plan and organize activities, sustain attention, and persist to complete a task. Executive skills enable us to manage our emotions and monitor our thoughts in order to work more efficiently & effectively."

**What Are Executive Functions?**

- ☐ Response Inhibition – the ability to think before acting. Allows time to evaluate the situation and how our behavior might impact on the situation

### What Are Executive Functions?

- ▣ Working Memory – the ability to hold information in mind while performing complex tasks. Also includes the ability to draw on past experience to apply to the situation at hand, or to project problem solving strategies into the future.

### What Are Executive Functions?

- ▣ Self-Regulation of Affect (emotion) – ability to manage emotions in order to achieve goals, complete tasks, or control and direct our behavior

### What Are Executive Functions?

- ▣ Task Initiation – the ability to begin a task without undue procrastination

### What Are Executive Functions?

- ▣ Organization – the ability to arrange or place things according to a system

### What Are Executive Functions?

- ▣ Flexibility – ability to revise plans in the face of obstacles, setbacks, new information, and mistakes

### What Are Executive Functions?

- ▣ Planning – the ability to develop a roadmap in order to reach a goal or complete a task. Includes decision making about what to focus on and what to ignore

### What Are Executive Functions?

- ▣ Time Management - the ability to estimate how much time one has; how to allocate time; how to stay within time limits; having a sense that time is important

### What Are Executive Functions?

- ▣ Metacognition - the ability to stand back and take a "birds eye view" of oneself in a situation. Involves self-awareness, self-monitoring, and self-evaluation.

### What Are Executive Functions?

- ▣ Goal Directed Persistence - the capacity or drive to follow through to completion of a goal, and not to be put off by other demands or competing interests

### Summary of Common Executive Functions

- ▣ Decision Making (DM)
- ▣ Flexibility (F)
- ▣ Goal Directed Persistence (GDP)
- ▣ Judgment (J)
- ▣ Organization (O)
- ▣ Planning (PL)
- ▣ Prioritizing (PR)

### Summary of Common Executive Functions

- ▣ Problem Solving (PS)
- ▣ Response Inhibition (RI)
- ▣ Self-Monitor (SM)
- ▣ Self-Regulation of Affect (SA)
- ▣ Shift (S)
- ▣ Sustained Attention (SA)

### Summary of Common Executive Functions

- ▣ Task Initiation (TI)
- ▣ Time Management (TM)
- ▣ Metacognition MC)
- ▣ Working Memory (WM)

## Executive Function Problems

- ▣ Groups of children who often experience problems with executive functions include those with TBI/neurological conditions, ADHD, some with LD (especially NLD), Asperger's Syndrome, Autistic Spectrum Disorder, and sensory integration disorder

## Intervention: Assessment of Executive Functions

- ▣ Record Review
- ▣ Parent and Teacher Questionnaires
- ▣ Self-Report Questionnaires
- ▣ Parent Interview
- ▣ Client Interview

## BRIEF

- ▣ Behavioral Regulation Index
  - Shift
  - Emotional Control
  - Inhibit

## BRIEF

- ▣ Megacognitive Index
  - Initiate
  - Working Memory
  - Plan/Organize
  - Organize of Materials
  - Monitor

## Assessment of Executive Functions

- ▣ Delis-Kaplan Executive Function System
  - Verbal Fluency
  - Design Fluency
  - Color Word Identification
  - Trailmaking
  - Word Context
  - Twenty Questions
  - Tower Test
  - Proverbs

## STRATEGIES FOR INTERVENTION

- ▣ What is the role of medication?
  - Stimulant medicines
  - SSRI medication
  - Mood regulation medications
  - Anti-psychotic medications

### **STRATEGIES FOR INTERVENTION**

- ▣ Environmental Modifications
- ▣ Behavior Modification
- ▣ Skill Development
- ▣ Compensatory Strategies
- ▣ Direct Intervention

### **Strategies for Intervention**

- ▣ Feedback & Report
- ▣ Goal Setting
- ▣ Program Planning
- ▣ Begin to Develop "Operators Manual"

### **Strategies for Intervention**

- ▣ Important Factors for Optimizing Success
  - Managing Expectations
  - Parent Involvement - direct involvement varies depending on the age of the child
  - Rapport
  - Problem focus; personally meaningful objectives
  - Developmentally Focused

**EXECUTIVE FUNCTIONS:  
HELPFUL HINTS FOR INTERVENTION.**

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## Agenda

Dr. Stefani

- ▣ Neuropsychological testing
- ▣ Executive functions

Robin

- ▣ Case studies
- ▣ Group discussion
- ▣ Resources

Coaching: Main Goal

**Increase self-  
awareness**



**Increase self-  
monitoring**

## CASE EXAMPLES

**PROBLEM**

### Homework Schedule

DETERMINED TIME AND  
PLACE FOR HOMEWORK

**Have the child estimate how  
long it may take to do the  
assignment before starting.**

Give breaks between assignments

## Timing Homework

- ☐ Assignment Name \_\_\_\_\_
- ☐ How long do you think it will take to complete this work? \_\_\_\_\_
- ☐ Write your guess here \_\_\_\_\_
- ☐ Time your homework \_\_\_\_\_
- ☐ Write the time here \_\_\_\_\_
- ☐ How close was your guess?
- ☐ Did the HW take > or < time than you thought?
- ☐ Why do you think this happened?

(Practice improves estimating)

From, The "Putting on the Brakes" Activity Book for young people with ADHD, pg 57

## From "Putting On the Brakes" Activity

### TEST PLANNER

Fill in the information about the test you will take. Be sure to include the date, time, and location of the test.

1. Subject: \_\_\_\_\_

2. Date: \_\_\_\_\_

3. Time: \_\_\_\_\_

4. Location: \_\_\_\_\_

5. How long will the test last? \_\_\_\_\_

6. How many questions will there be? \_\_\_\_\_

7. How many questions will you answer? \_\_\_\_\_

8. How many questions will you miss? \_\_\_\_\_

9. How many questions will you get right? \_\_\_\_\_

10. How many questions will you get wrong? \_\_\_\_\_

11. How many questions will you get right? \_\_\_\_\_

12. How many questions will you get wrong? \_\_\_\_\_

13. How many questions will you get right? \_\_\_\_\_

14. How many questions will you get wrong? \_\_\_\_\_

15. How many questions will you get right? \_\_\_\_\_

16. How many questions will you get wrong? \_\_\_\_\_

17. How many questions will you get right? \_\_\_\_\_

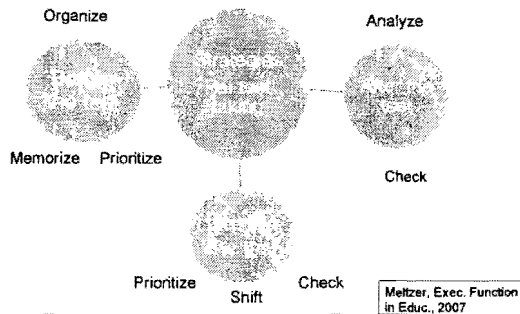
18. How many questions will you get wrong? \_\_\_\_\_

19. How many questions will you get right? \_\_\_\_\_

20. How many questions will you get wrong? \_\_\_\_\_

Remember to check your answers carefully before you turn in the test.

STRATS paradigm  
(Test taking strategies: before, during & after taking a test)



## Memory Strategies

- ☐ Association
  - Relate new info to s/t you already know
- ☐ Repetition
  - Repeat info over and over out loud
- ☐ Grouping
  - Group items by what they have in common
- ☐ Visualization
  - Picture what you want to remember in your mind
- ☐ Writing
  - Write it down in a place you will look again

John

► What are some possible EF reasons?



## Executive Functions and associated issues

- |                                   |                                   |
|-----------------------------------|-----------------------------------|
| ☐ Decision Making (DM)            | ☐ Self Monitor (SM)               |
| ☐ Flexibility (F)                 | ☐ Self-Regulation of Affect (SRA) |
| ☐ Goal-Directed Persistence (GDP) | ☐ Shift (S)                       |
| ☐ Judgment (J)                    | ☐ Sustained Attention (SA)        |
| ☐ Organization (O)                | ☐ Task Initiation (TI)            |
| ☐ Planning (Pl)                   | ☐ Time Management (TM)            |
| ☐ Prioritizing (Pr)               | ☐ Metacognition (Meta)            |
| ☐ Problem Solving (PS)            | ☐ Working Memory (WM)             |
| ☐ Response Inhibition (RI)        |                                   |

Student with impulsivity issues

## MANAGING YOUR TIME

- DON'T rush through your work
- DO slow down and work carefully
- DON'T try to do an assignment/job all at once
- DO break down into smaller parts
- DON'T leave everything until the last minute
- DO make a schedule

From, The "Putting on the Brakes" Activity Book for young people with ADHD, pg 56

## Behavior intervention

- ▣ When a child with ADHD or Asperger's... feels overly challenged, they often become distressed and anxious which may cause them to shut down completely.
- ▣ These emotional issues then have a negative impact on the child's ability to do homework that they actually have the capability to do.
- ▣ It is helpful to have a social worker or therapist help work on emotional regulation issues with the child.

## Surrogate Frontal Lobe

- ▣ "Who" is the best surrogate\* frontal lobe for your child? This could be more than one person.

\*Guare, Richard

## Group participation



## Executive Functions and associated issues

- |                                   |                                   |
|-----------------------------------|-----------------------------------|
| ▣ Decision Making (DM)            | ▣ Self Monitor (SM)               |
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| ▣ Organization (O)                | ▣ Task Initiation (TI)            |
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| ▣ Prioritizing (Pr)               | ▣ Metacognition (Meta)            |
| ▣ Problem Solving (PS)            | ▣ Working Memory (WM)             |
| ▣ Response Inhibition (RI)        |                                   |

## Teaching Executive Skills

- 1) Identify specific problem behaviors
- 2) Choose an identified behavior
- 3) Discuss in length
- 4) Discuss steps that need to be followed and potential obstacles.
- 5) Set an ultimate goal with a couple of short term goals
- 6) Monitor closely while coaching
- 7) Fade coaching

## Training Your brain: Ultimate Goal

- ▣ Cognitive Effort → Automatic Processing
- ▣ Repetition, experience, practice → information then becomes more familiar and simple → performance becomes effortless.

Brain Center of America 2008.

## Computer Based Interventions

- ▣ BRAIN FITNESS PROGRAMS
- ▣ Neuroactive Program (Complete Training)
  - Designed by university-affiliated physicians
  - Train 16 essential brain functions (SelAtt, ProSp, VisSpa, WM, EpiMem, AttShift, Plan, WordNam, CogControl, VisSP, BhvInhib, arith,...)
  - Increases memory and brain processing speed
  - Neuroplasticity: brain structure modifications (new neurons, additional synapses, development of stronger neural networks)

## Training Your brain

- ▣ The 16 Essential Brain Functions exercised by the NeuroActive Program®
  - ▣ The NeuroActive Program® offers you cognitive training adapted to your needs. The following list presents a brief description of the main cognitive functions exercised by the program.
- 1- Speed Processing of Information**
    - ▣ Speed at which the brain analyzes information and produces responses.
  - 2- Working Memory**
    - ▣ Ability to maintain active and process the information stored in memory in order to complete an action.

Brain Center of America 2008.

## Training Your brain

- 3- Episodic Memory**
  - ▣ Memory of personal events and the context related to them.
- 4- Temporal Order Memory**
  - ▣ Ability to remember the order in which items appeared.
- 5- Word Naming**
  - ▣ Ability to produce language and maintain conversation.
- 6- Arithmetic**
  - ▣ Ability to understand and perform mathematical operations.
- 7- Planning**
  - ▣ Ability to organize behaviors in a coherent sequence in order to achieve a goal.
- 8- Visuo-Spatial Skills**
  - ▣ Ability to analyze and understand space in 2 or 3 dimensions.

Brain Center of America 2008.

## Training Your brain

- 9- Hand-Eye Coordination**
  - ▣ Ability to produce specific hand movements based on visual commands.
- 10- Selective Attention**
  - ▣ Ability to detect specific targets.
- 11- Visual Scanning**
  - ▣ Ability to search for information in the field of vision.
- 12- Inhibition**
  - ▣ Ability to avoid making inappropriate responses or stop distracting stimuli.
- 13- Cognitive Control**
  - ▣ Ability to adjust our behavior according to the context in which we find ourselves.
- 14- Behavioral Flexibility**
  - ▣ Ability to change our attentional focus and modify our behaviors based on changes in the environment.
- 15- Temporal Perception**
  - ▣ Ability to determine how long events last.
- 16- Semantic Categorization**
  - ▣ Ability to create groups based on the similarity of concepts.

Brain Center of America 2008.

## Training Your brain

- ▣ Neuroplasticity or Brain Plasticity
  - The brain's ability to reorganize itself by forming new neural connections (brain reorganization)
  - It allows the neurons in the brain to compensate for injury...weakness...
  - Axonal sprouting → forms new neural pathways → accomplish a needed function
  - The brain compensates for damage by reorganizing and forming new connections between intact neurons.

-Example: It is like a one lane road becoming a large intersection where there is more access and information can flow more quickly and freely.

Medicine Net.com

## Computer Based Interventions

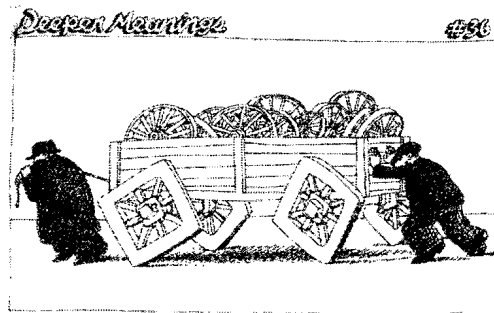
- ▣ Neuroactive Learning
  - Designed for ages 11-18
  - To enhance memory and learning
  - Enhance comprehension
  - Increase speed reading
  - Quickly boost memory
  - Expand problem solving skills

## Internet Options

- ▣ [www.cozi.com](http://www.cozi.com): free on line organizer
  - Calander...grocery list...color coded schedules for each child...text or email reminders to you or your child's phone.(TM, O, PI, Pr, SM.)
- ▣ [www.collegeboard.com](http://www.collegeboard.com)
  - For students, parents, and professionals
  - Planning and preparation tools (action plan to prepare for college for each high school grade, SAT question of the day, organizing applications, packing list...

## Conclusions

- ▣ Many of these kids have the intelligence and knowledge of what to do.
- ▣ They need to stop and slow down and think about how they're doing it.
- ▣ Coaching is key!!!



## Getting Started Today

"Education has opened many, many doors. However, there are still innumerable doors shut tight—unopened yet. These are the doors of the future. Perhaps one of my children will open one of these doors—I shall help give him the key."

-Unknown

Q&A