



Executive Functioning

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OT in schools & OT and Executive Functioning

- Support a student's ability to participate in daily school activities or "occupations"
- Conduct activity and environmental analysis and making recommendations for greater access, progress, and participation in school activities

- OTs address executive functioning skills as these skills are needed by students of all ages to fulfill their role aka "occupation" as students
- May be addressed directly through OT sessions pulled out of class, within class, on a consultative basis with teachers and/or parents
- Provide resources to staff to support EF needs in the classroom

Executive Functioning & School Psychology

- Provide strategies to assist teachers and parents in implementing specific interventions to improve executive function (possibly through I&RS)
- Provide support for emotional regulation either in consultation with teachers/parents and/or providing direct counseling for students that have counseling mandated by IEP
- May consult with guidance counselor on classroom meets/sessions regarding emotional regulation and/or executive function needs
- Consult with guidance counselor on identifying executive function needs in specific students

Does this sound familiar?

- I have to tell him the same thing 10 times before he does what I ask?
- We are always running late, no matter how much time I give her to get ready to leave?
- I tell her to get started on homework, it looks like she started but when I come back to check, nothing is done?
- She has major meltdowns when frustrated or when I ask her to do something she does not want to do?



What is executive functioning?

- Brain based skills that are required for humans to **execute** or perform tasks
- Needed for even the most basic tasks
- Frontal brain system (frontal and prefrontal cortex and surrounding connections to adjacent areas of the brain) are where EF structures are housed

Executive functioning development

- Infant research tells us that the areas of response inhibition, working memory, emotional control and attention all develop early, in the first 6-12 months of life
- Evidence of development of planning begins when a child finds a way to obtain a desired object
- Flexibility and the child's ability to adapt to change can be seen developing between 12-24 months
- Task initiation, organization, time management, and goal directed persistence come later ranging from preschool to early elementary school

Pre adolescence and executive functioning

- Brain growth spurt prior to adolescence occurs primarily in the frontal lobes (around ages 11-12)
- Brain preparing itself for the demands on these skills during adolescence that dramatically increase
- Development of these skills is uneven and unpredictable at this time



- Need MORE encouragement, guidance, and support rather than less

Areas of executive functioning

- Executive functions involve two primary functions: *thinking* (cognition) and *doing* (behavior)
- The more you know about which areas of executive functioning your child may need support, the better you can determine if your child needs more support in thinking differently or behaving differently

Executive skills involving thinking (cognition)

- Working memory
- Planning/prioritization
- Organization
- Time management
- Metacognition

Executive skills involving doing (behavior)

- Response inhibition
- Emotional control
- Sustained attention
- Goal-directed persistence
- Flexibility
- Task initiation

Where to start?





Organization

- The ability to create and maintain systems to keep track of information or materials

Examples:

- A young child, can with reminders, put toys in a designated place
- A teenager can keep track of binders needed for classes

Supporting organization

- **Organization of materials/belongings**
 - Labeled systems for organizing belongings at home (color coded, picture labels)
 - Consistency in where items are kept and in daily routines
 - Ex: shoes always go on shoe rack
 - Support for putting away and taking out supplies and belongings as needed at home
 - Utilize check lists to track items needed for specific activities
 - Get ready for school checklist (backpack, lunch box, chromebook, coat, etc.)
 - Support child with weekly backpack, binder, or folder “clean outs”

Organization for homework assignment tracking

- Support/encourage planner use for younger students
 - Encourage checking off assignments when complete
- Electronic planner systems for older students - expand on Google classroom
 - Utilize Google Calendar
 - [Create electronic planner on a Google doc](#)
 - Google tasks - checklist extension for Google chrome
 - [Google keep](#) - electronic post it notes

Time management

- The capacity to estimate how much time one has, how to allocate it, and how to stay within time limits
- Involves a sense that time is important

- A young child completing a short job within a time limit set by an adult
- A teenager can establish a schedule to get homework assignments completed on time

Developing time management

- “Beat the clock”
 - Visual timers
 - Children’s countdown timer (free phone app timer)
 - <https://www.timetimer.com/>
- Predictable routines at home
 - Same bed time, same wake up time
- Support and encourage analog clock use when developmentally appropriate
- Talk about time frequently
- Estimating time to complete tasks
- Use time as a natural consequence
- Identify time robbers vs time savers
- Middle school = **demands on time increase just as we tend to cut back on monitoring and supervision **

Day: _____

- Appointments/activities
- Assign a Time for HW, Chores, Exercise
- Chill/creative
- Extras (shift gears, drive time, goes with/maybe)

Physical Activity: _____

Homework: _____

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Helpful tool to actually see how much time they may or may not have

Make the most of their time

How to use down time

Avoid time paralysis

Google calendar for organization and time management

- Track long term assignments and exams with use of banner feature
 - Assignment tracks over 2 weeks, set date range to see banner across the two weeks
- Color code and emoji use
- Add after school activities (extra help, sports, clubs) / homework time / chill time / family time
- Be specific with event durations to assist with visualizing time

Response Inhibition

- The capacity to think before you act
- The ability to resist the urge to say something or do something without thinking/evaluating the situation
- A young child can wait before directions before using presented materials
- A child can wait to be called on rather than blurting out an answer in class
- A teenager can remain calm when a referee makes a call they disagree with when playing a sport

Strategies to support response inhibition

Stop and Think

Taking 5 breathes- anything to delay response

Cognitive Behavioral Strategies- Count to 5 and then respond

Older Children- If, then, Discussion on Cause and Effect

Games- Freeze Dance, Red Light Green Light and Simon Says

Use of waiting periods and delayed gratification (positive reinforcement for how long they are able to wait)

Working memory

- The ability to hold information in memory while performing complex tasks
 - Child's capacity to hold information in mind for the purpose of completing a task, encoding information or generating goals, plans and steps to achieve a goal.
 - Attention affects working memory- To encode information, you must attend to the information. Encode- Storage-Retrieval
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- A young child can recall one to two step directions
 - A middle school student can remember the expectations of multiple teachers

Improving working memory

- Make sure child is looking when providing verbal directions
- Ask your child to restate the directions before he begins to complete the task
- Use of visual prompts- pictures, words or both to provide instructions
- Minimize external distractions for full attention
- Provide 2 step directions, max- depending on the age of the student and the level of need in working memory
- Reward / positive praise for recall of important information

Sustained attention

- The capacity to keep paying attention to a situation or task in spite of distractibility, fatigue, or boredom
- A young child may complete a familiar 5 minute chore with supervision
- A teenager may complete homework for 1-2 hours at a time with short breaks

Strengthening sustained attention

- Closer supervision (ex: seating in room, physical proximity)
- Make it gradual process (build to paying attention for longer periods of time)
- Visually present time during tasks
- Praise for on task behavior
- Reduce environmental distractions as much as possible
- Breaking down task into smaller chunks
 - 5 minutes of work time, 1 minute break, cont. vs. work for 30 minutes straight
- Thinking of attention like a gas tank
 - End of the day
- Sensory supports: “heavy work”, gum chewing, crunchy snack, alerting smell, drinking through a straw

Emotional Control/Regulation

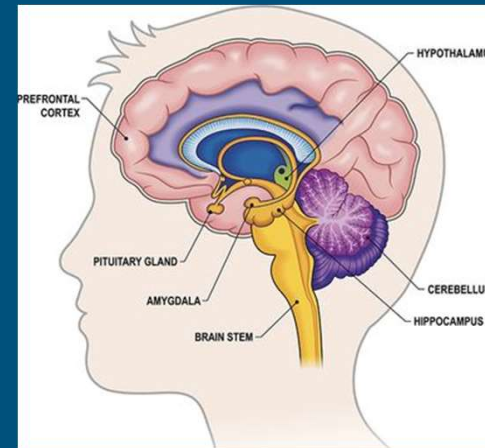
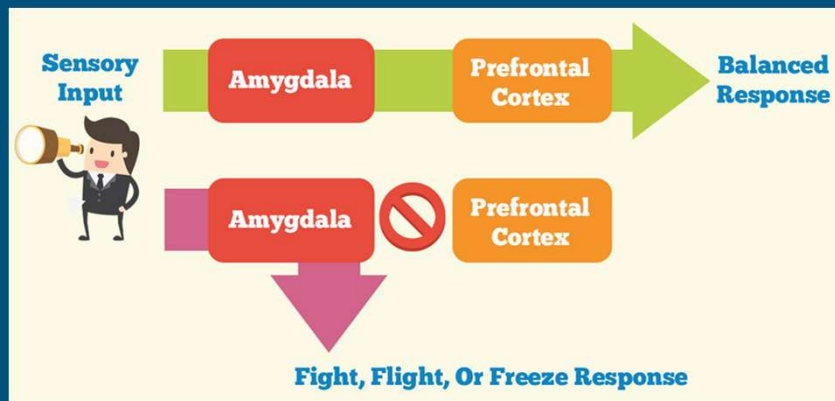
- How we manage and respond to emotional experiences in the environment.
- All about perspective- what is a big deal to your child, may not seem like a big deal to you (Think- teens and toddlers)
- Many factors can impact emotional control (sleep, skill deficits, learning needs, social issues, etc)
- Every child is different- levels of frustration tolerance vary from child to child, situation to situation, day to day
- Reduce stress, if possible
 - A young child may be able to emotionally regulate if he is told no to ice cream or asked to share a toy.
 - An older child may be able to handle having his phone removed temporarily

Strengthening Emotional Control

The amygdala is the emotional control center of the brain.

A child takes in environmental stimuli through his senses and the amygdala interprets these signals.

It can alert the rest of the brain that a threat is present and trigger a fear or emotional response. PFC is doesn't fully develop until adulthood.



Improving Emotional Control

- Assess basic needs- emotional regulation is sensitive to fatigue, hunger, dehydration and safety
- Begin teaching awareness- children need support for this, be their mirror (“I notice when you_____”) - Identify triggers
- Expand feelings vocabulary - putting words to those feelings (list these in the house)
- Use assertive communication skills to express feelings including “I messages”, draw a picture, complete a feelings check in (with words or pictures)
- Implement a coping strategy to lessen feelings- next slide.

Coping Strategies

- Mindfulness, Grounding, Yoga, Journaling, Breathing, Progressive Muscle Relaxation
 - Visualization- Challenge these thoughts (hot air balloon)- helps compartmentalize
Worry Jar- Write down your worry, put it in a jar and then you are ready to move on
 - Relaxation Station/Calming Corner- carpet, bean bag chair, post strategies to calm with visuals
 - Rocket ship/Emotional **Thermometer**- provides a visual for students to identify the intensity of their emotions
 - Coping Strategies- may be different for each student- taking a walk, doing a dot to dot, putting a worry in the worry jar, 5 minute “check in” time, etc.
- Think- Coping Strategy Tool Box or Emotional Bank Account- need options for coping strategies*

Coping Strategy Tool Box



Deep Breathing



READ A BOOK



Play a video game



Coloring/Drawing



Exercise/activity



Talk to Someone



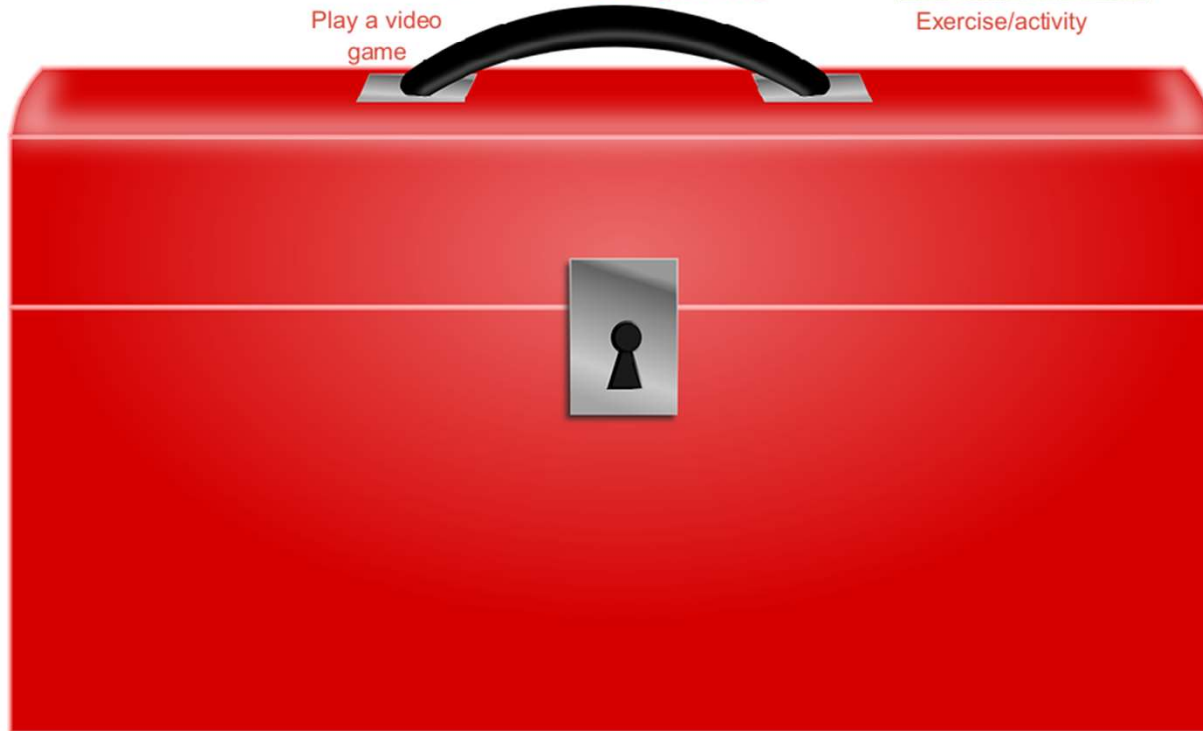
Grounding-what do I hear, smell, taste, feel, see



Progressive Muscle Relaxation



Listening to Music



Self Talk



Drawing Figure 8s

Flexibility

- The ability to adapt to changing conditions. The ability to shift between tasks.

A young child may be able to adapt to change in a daily routine.

An older child may be able to adapt with an unexpected delayed opening in school or a pop quiz.

Encouraging flexibility

- Introduce changes gradually
- Reduce the complexity of tasks if needed
- Walk through / rehearse situations that cause worry / frustration
- Identify and review strategies to handle situations where their inflexibility may cause an issue (younger children- can practice through play)
- Make small changes occasionally to increase tolerance to change- provide positive reinforcement when your child is able to demonstrate flexibility
- Anxiety may be a part of rigidity- refer to coping strategies to manage feelings of anxiety
- Book resource: What to Do When Your Brain Gets stuck by Dawn Huebner

Planning & prioritizing

- The ability to create a roadmap to reach a goal or to complete a task
- Being able to make decisions about what is important to focus on vs. what is not important to focus

- A young child, with coaching, can think of options to settle a conflict

Planning & prioritizing

- Create plans with your child when they are young, especially with motivating tasks
 - “I want to go to the playground!” -> “Let’s make a plan so we can go to the playground”
- Involve your child in the planning process after you have been modeling planning for a while
 - “What do you need to do first?”
- Planning becomes more critical in late childhood (ex: when projects and long term assignments begin to get assigned)
- Support in prioritizing homework assignments in order of importance
- Withholding of rewards / tasks until priority items are completed

Task initiation



- The ability to begin projects without undue procrastination in an efficient or timely fashion
- The ability of a child to begin an activity or task


- A young child may put away their shoes as soon as they are asked
- A teenager starts a long term project in advance of the due date

Increasing task initiation

- Provide positive, specific praise for starting tasks right away (“first time listening”)
- Use of games- Ready, set, go - “I’m going to time who can start cleaning their room in a minute or less”,
- Use a scaffolding approach with familiar tasks, backwards chaining approach
- Break down larger potentially “overwhelming” tasks into specific, smaller parts
- Have the child decide how they would like to be cued to begin a task (alarm, written note, etc.)
- Create a specific plan for when and how the task will get done (Get ready, do, done sheet)

Get Ready, Do, Done - ** task initiation tool**

| Get Ready | Do | Done |
|--|--|---|
| <p>Organize my space?</p> <p>Materials/resources/ strategies?</p> <p>Plan my time ?</p> <p>Obstacles?</p> <p>Plan for handling Obstacles: If.....then.....</p> <p>Time Robbers Time Savers</p> | <p>What do I need to do to accomplish this task?</p> <p>How much time will it take?</p> <p>What is my time available?</p> | <p>What do I need to do to get Done?</p> <p>What will it look like?</p> <p>When is it due so I know my priorities? </p> <p>How will I feel when I am done?</p> |
| | | <p>Get Done</p> <p>How do I close out/ Get Done with the task? Now that I am done – how do I feel? </p> |





putting it all
TOGETHER

Teaching kids about executive functioning



<http://efs2therescue.com/file-xi-lexi-flexibility>

Awareness- The MOST IMPORTANT, FIRST STEP

Change cannot happen without:

1- Identification that there is a problem- Let's reset a habit!!

2- Awareness of the problem and how it impacts the person. Children are concrete and generally have difficulty with self-awareness- so be concrete and descriptive and be their mirror. No judgement.

("Have you noticed that...," "I see that when you....., this happens.")

3- Collaboration with your child on setting the goal and how to make that change happen- allow them to be an active participant in this discussion/decision making

4- Awareness does not end when the goal is set. The effect of awareness continues as the effectiveness of the intervention is progress monitored. Use of graphs, charts, sticker charts, etc. to track progress- allow the child to be a part of that tracking.

Parent and Child Relationship

You are a team!!!!

They are probably frustrated too!!

Don't forget empathy! Everyone wants to be heard and their feelings valued. They are kids...we shouldn't expect them to do this automatically. EF is taught and not automatic.

[Sentence starters to speak with empathy](#)

Compliance through teamwork. If a child feels a part of the discussion and problem solving, he is more apt to comply with the strategies!!

BUY-IN IS KEY!!



Thoughts on Interventions

- Routine and consistency is key!
- The more structured and predictable, the better. Don't give up after only a couple of attempts. It takes time to make change! Consistency is key!!
- Focus on the strengths, not just the weaknesses- "You are really good at _____," Positive praise is a wonderful reinforcer!
- Emotional regulation is an executive function- so be aware of your child's emotional state and provided support as needed
- Choose to work on ONE thing to work on at a time

More Thoughts...

- Visuals are great, the younger the student, the more colors, pictures maybe helpful to recall steps or understand the directives.
- Use of a goal setting plan- write one out, post it someplace you can see to refer to it!!
- Reinforcement- can be verbal praise or use of some behavioral modification system.
- Some reinforcement examples may include marbles in the jar, sticker chart, earn checks and then turn checks into a reward menu, earning more time with a preferred activity. Lots of ideas about positive reinforcement systems online.

EF and the Pandemic

Last year- more anxiety, children internalizing

This year- more externalizing behavior and social conflict AND difficulty with EF.

- Expectations are back up, but skills are down/delay in practice and development
- During the Pandemic- we had to RETHINK everything- how we complete tasks and how our kids learn
- NOW- Back to re-establishing our Executive Function, based on current demands, schedules, etc.
- Have patience- the pandemic has delayed development of some EF but it's coming back with direct instruction and goal setting.

Mindfulness in improving Executive Functions

Mindfulness is linked with improvement in awareness, self control and self regulation....all things you need to improve EF.

Remember: Emotional regulation is an executive function. Emotional state impacts all functioning. A dysregulated child has a very difficult time attending, following through on tasks, initiating, etc.

Many activities to improve mindfulness-

- Guided meditation, yoga, journaling, tech free time, reading
- Mindful moment/Grounding- what do you see, hear, feel, taste and touch in this moment
- Emotional check ins- prompting before activity to do a quick body scan and awareness of emotions.
- Mindfulness cards on Amazon - very cute, kid friendly exercises (my favorite is Mindful Kids- 50 Mindfulness Activities for Kind, Focus and Calm)

Resources

<https://goodsensorylearning.com/>

<https://www.efpractice.com/>

<https://www.smartbutscatteredkids.com/resources/print-articles/>

<https://www.thepathway2success.com/executive-functioning-resources/>

<https://developingchild.harvard.edu/resources/activities-guide-enhancing-and-practicing-executive-function-skills-with-children-from-infancy-to-adolescence/>

www.socialthinking.com