

Decoding Dyslexia

Research Based Executive Functioning Interventions

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- **What is ADHD:**
 - Executive Functions vs IQ
 - What are the Executive Functions?
 - ADHD types: Hyper Impulsive, Inattentive (Sluggish Cognitive Tempo) & Combined Type
- **Assessment:**
 - Interview and paper/pencil
 - Neuropsych does not have Dr. Barkley's support
- **Medications:**
 - **Psychostimulants**
 - methylphenidate (Ritalin, Concerta)
 - amphetamine (Adderall, Dexedrine)
 - drugs that increase both dopamine and norepinephrine
 - **Dopamine** (decreased dopamine activity)
 - Major function in reward and motivation (inattention)
 - Most rewards increase dopamine
 - Involved in motor control (impulsive/hyper)
 - problems with eregulating attention (**attentional control**), inhibiting behaviors (**inhibitory control**), and forgetting things or missing details (**working memory**).
 - **Norepinephrine**
 - (Guanfacine, Clonidine. Strattera; dopamine is the precursor)
 - substantial evidence - "biomarkers" of altered norepinephrine processing
 - It mobilizes the brain and body to action when stressed/endangered (so they seek STRESS)
 - increases arousal and alertness, promotes vigilance, enhances formation and retrieval of memory, and focuses attention

Summary of Stephanie Sarkis' Ph.D. talk on Nonmedication Treatments for ADHD. She also has a book out with the same title.

Nonmedication Treatments

- **Any treatment that requires a contract Red Flag!**
- **Very little data on supplements working at all.**
- ADHD **is a disorder of motivation.**
- **YOU MUST MOVE AROUND NO MATTER WHAT!**
- **CBT** (Solanto) **YES**
 - Self Talk:
 - They think they are not smart →release cortisol.
 - **Talking positively releases dopamine, serotonin, and norepinephrine**
 - Group therapy → find out they aren't alone.
 - CBT Homework:
 - They are more likely to apply positive group pressure to do homework.
 - Homework is correlated with success
 - 53% got better with CBT vs 23% relaxation and education.
- **Coaching** **YES**
 - Careful because it is not certified or licensed by a state board (only their own organizations)
 - Eric Tivers, LCSW
 - **CHADD has a list of people**
 - **ADD Consults.com**
 - Reframe the coach as a *personal assistant*
 - Skilled at:

- setting up structure
 - College -**accountability**
 - Plays on people's need to be socially appropriate
 - novelty
 - Accommodations are very effective for college students.
- **Exercise YES**
 - Very effective
 - **15 minutes increases dopamine** (the more you exercise the more dopamine you get)
 - Do it first thing because it helps the sleep- wake cycle and gives you dopamine during the day.
 - **All styles of martial arts 1) increase dopamine and EF which includes 2) positive social pressure**
 - Judo is great because it also does meditation
 - Kata is a bite size piece
 - detailed choreographed patterns of movements practised either solo or in pairs
 - **Positive reinforcement to encourage exercise**
 - **Movement in a classroom → turns on your cerebellum**
 - The **cerebellum** (Latin for "little brain") role in motor control/coordination/précising, timing, attention, and language. Also regulates fear and pleasure responses
 - Chiropractic does not work.
- **Brain Games NO**
 - They do not work because they **do not generalize.**
 - No improvement with inhibition
 - Alternatives: Simon and Memory
- **Interactive Metronome YES, Listening Programs NO, Physiotherapy NO**
 - 12 weeks showed 2 years of improvement...but very limited data
 - The goal is to speed up SCT by developing CNS processing
 - **Use a concentrated distraction like a metronome is useful.**
 - Using a regular metronome is just as good
 - Try Metranome Beats
 - The idea with SCT is that it is inattentive with sensory processing (and possibly mood)
 - Listening Therapy: data against
 - Physiotherapy: data against
- **Mindfulness Meditation YES**
 - Paying attention to present experience. (You do not need to sit still to do this.)
 - 78% improved - 30% had symptom reduction
 - Walking Mindfulness may be good for that.
- **Neurofeedback LIKELY NOT**
 - FDA approved
 - goal to decrease theta waves and increase beta waves
 - Animation on a screen. Only on when beta waves are more active.
 - **Good only while you are doing it.**
 - It is very expensive.
 - Very limited data. **Double blind showed no benefit.**
 - **Brain Gym does not work.**
- **Omega 3 6 9 YES**
 - Omega is usually low in ADHDers
 - **Small but significant effect on ADHD symptoms**
 - Vitamins did not make a difference....Omega did
- **Diet Changes Kinda**
 - **Higher food allergies and sensitivities**
 - Gluten free – not effective.
 - Feingold diet - not effective
 - Having said all that it may help with other issue that are Impacting attention
 - Food dyes – no clear support
 - More protein - not supported
 - Fatty Acids – small effect size
 - If meds **aren't working, it may be smart** to do an elimination diet

Turning Intentions Into Actions - ADHD as an Implementation Problem & Treatment Implications

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PENN Adult ADHD Treatment & Research Program

CHADD 2016

Book: [Cognitive Behavioral Therapy for Adults with ADHD](#)

- ADHD is a disorder of implementation (meaning a challenge of turning intentions into actions)
- **Developmental Disorder of Self Regulation:**
 - Reward Deficiency Syndrome
 - Executive Function Disorder
 - Disorder of Emotion Regulation
- **Self Regulation:**
 - The interaction between the person's disposition and cues/consequences in the environment → adapting to the environment
 - **Structure of Self Regulation:**
 - Inhibition of behavior on command.
 - Behavioral control with an incentive (inhibit and direct)
 - Behavioral control with no incentive
 - brake: refrain from touching
 - accelerator: sustain repetitive tasks without reward
- **What are Executive Functions:**
 - EF usually emerges as a single factor: "How efficiently do you do what you set out to do?".
 - There are 5 domains related to daily functioning:
 - Self MANAGEMENT (including TIME)
 - Self ORGANIZATION and PROBLEM SOLVING
 - Self RESTRAINT (inhibition)
 - Self MOTIVATION
 - EMOTION REGULATION
- **Use EF or Lose EF:** (nonbiological cause)
 - You must use and practice your EF's to improve them. (e.g., *helicopter parenting is a problem*)
 - ADHD--> Primary EFD --> Poor Organization & Adaptive Functioning --> Reduced Practice with EF and Avoidance of EF Tasks → Secondary EFD
- **Emotional Regulation:** (these create norepinephrine)
 - low frustration tolerance
 - anger
 - emotional excitability
- **Evaluating Dopamine Reward Pathway in ADHD / Reward Deficiency Syndrome**
 - lower dopamine transporter availability in the reward system → they aren't rewarded neurologically
 - **Motivational Deficits commonly encountered:**
 - trouble activating (initiate)
 - easily bored (distracted/goal persistence)
 - need salient *and* interesting tasks (dopamine)
 - higher risk of addictive behaviors: novelty seeking, chemical dependency, non-chemical additions (e.g., internet, gaming, gambling) (dopamine)
- **CBT in ADHD:**
 - CBT & Meds → quicker benefit. CBT with no meds catches up later on. The determining factor is "When do you want to feel better, now or later?"
 - Brain scan changes are equivalent to what is found on a stimulant medication.
- **CBT Intervention Domains:**
 - cognitive modification
 - behavior modification
 - acceptance, mindfulness, persistence
 - implementation strategies (coaching, Skylar, book)
- **Cognitive Modifications:** (Beck)
 - Cognitive Distortions in procrastinations (which come from living with long term ADHD - not biology):
 - Magical Thinking (*It will get done somehow*)
 - Magnification (*too hard to start*) / Minimization (*I can do it in an hour.*)

- Comparative Thinking (*No one else has to work as hard as me.*)
 - Emotional Reasoning
 - Defense Attorney metaphor: “What argument would your defense attorney make on your behalf? How can you be more **adaptive** (not more positive)?”
 - Broadcast: “If you were broadcasting your life, what would you want to be different?”
- **Maladaptive Thoughts & Adult ADHD:**
 - Depression Spiral: negative experience --> negative outlook --> negative setup (spirals and creates depression)
 - Impulsively Negative: more intrusive and worrisome thoughts that are hard to get rid
 - Low Self Concept creates more severe ADHD --> meaning bad cognitions make your ADHD worse
 - **Perfectionism is the #1 cognitive distortion**
 - front end perfectionism: Everything has to be perfect for me to get started --> then you run out of time
 - The product has to be better than expected due to indebtedness for accommodations, etc.
- **Schema and Core Beliefs:** (tied to emotions)
 - Self Mistrust: “I can’t rely on myself.”
 - Failure: “I have not met expectations.”
 - Incompetence/Dependence: “cannot handle life.”
 - Worthless/Inadequacy
- **Behavioral Modification:**
 - Procrastivity: Self defeating - Avoiding a higher priority task by engaging in a lower priority task. (A task that takes less time, and is less urgent, *but productive*).
 - The self defeating task is rewarding because you can accomplish it.
 - How to improve procrastivity:
 - Create a clear sense of progress
 - Create a clear end point
 - Use an existing behavioral script
 - Create a launch sequence of smaller, achievable goals
 - Best if: time based, task based, terrain based
- **Interventions:**
 - **Learn to accept discomfort.**
 - Learn to commitment to a task.
 - Create a VERY SPECIFIC implementation plan.
 - Will not work: I will do my homework.
 - May work: Sit down at 7 for 30 minutes. --> Focus on the process, not the product. You have to get ENGAGED (dopamine).
 - You must reinforce partial progress

My favorite medication managers:

- Nicole Christiansen, MD (Psychiatry) NicoleChristiansenMD.com
- Carol Stark, MD (Psychiatry) LakeOswegoPsychiatric.com
- Rachel Rittman, MD (Psychiatry) 310.825.2467
- Donna Kirchoff, MD (Developmental Pediatrician – kids 0-10) 503.444.1745

Making an appointment with Dr. Arnold:

- Fill out the online appointment form. Appointments are made in the order this form is received. We are out of network (but do still bill) insurance companies. We have a billing company that takes care of payments/billing for you.
- NewLeavesClinic.com – 503.693.9153 – Our website is comprehensive and can answer most questions about scheduling and billing.