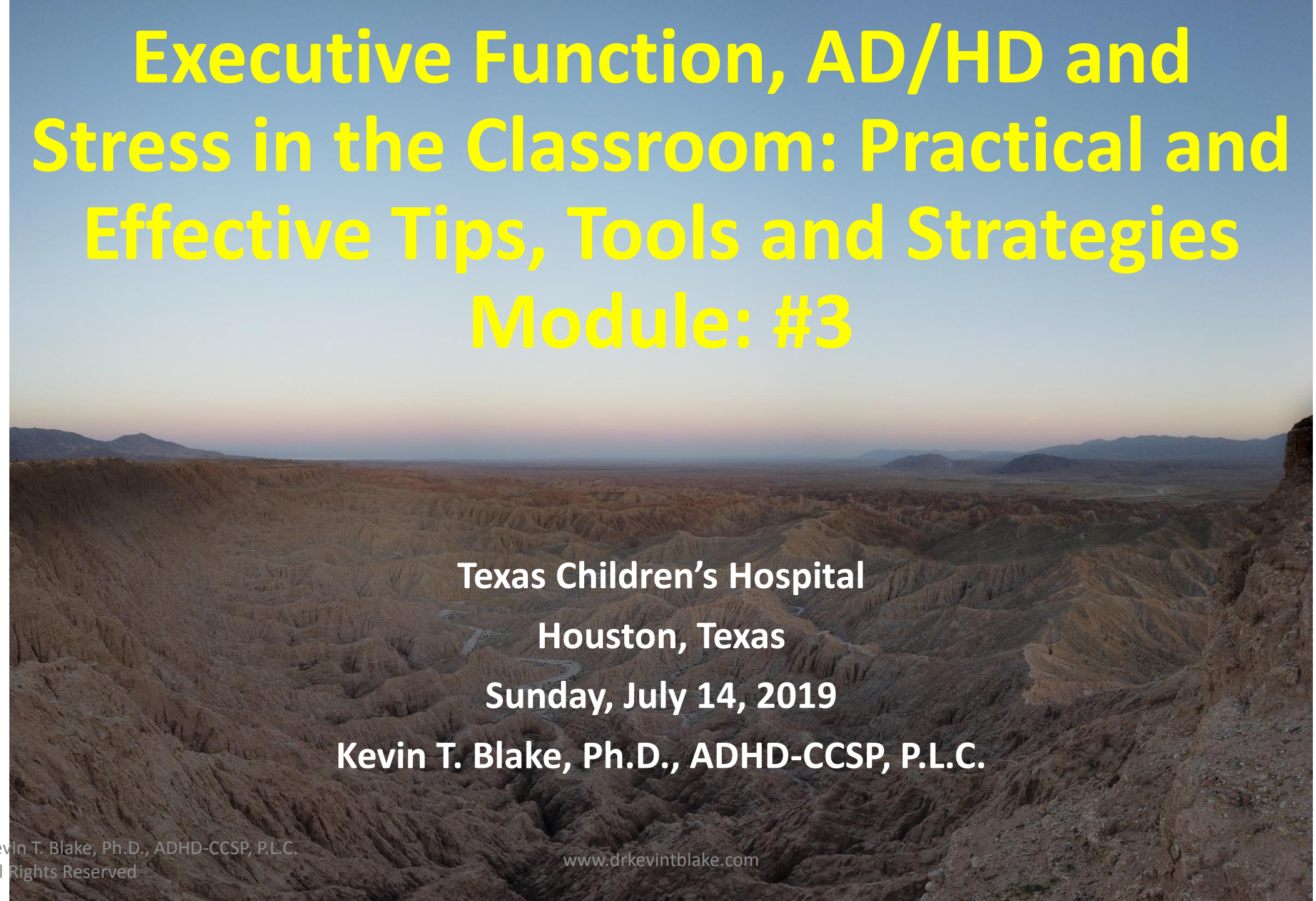
Executive Function, AD/HD and Stress in the Classroom: Practical and Effective Tips, Tools and Strategies Module: #3



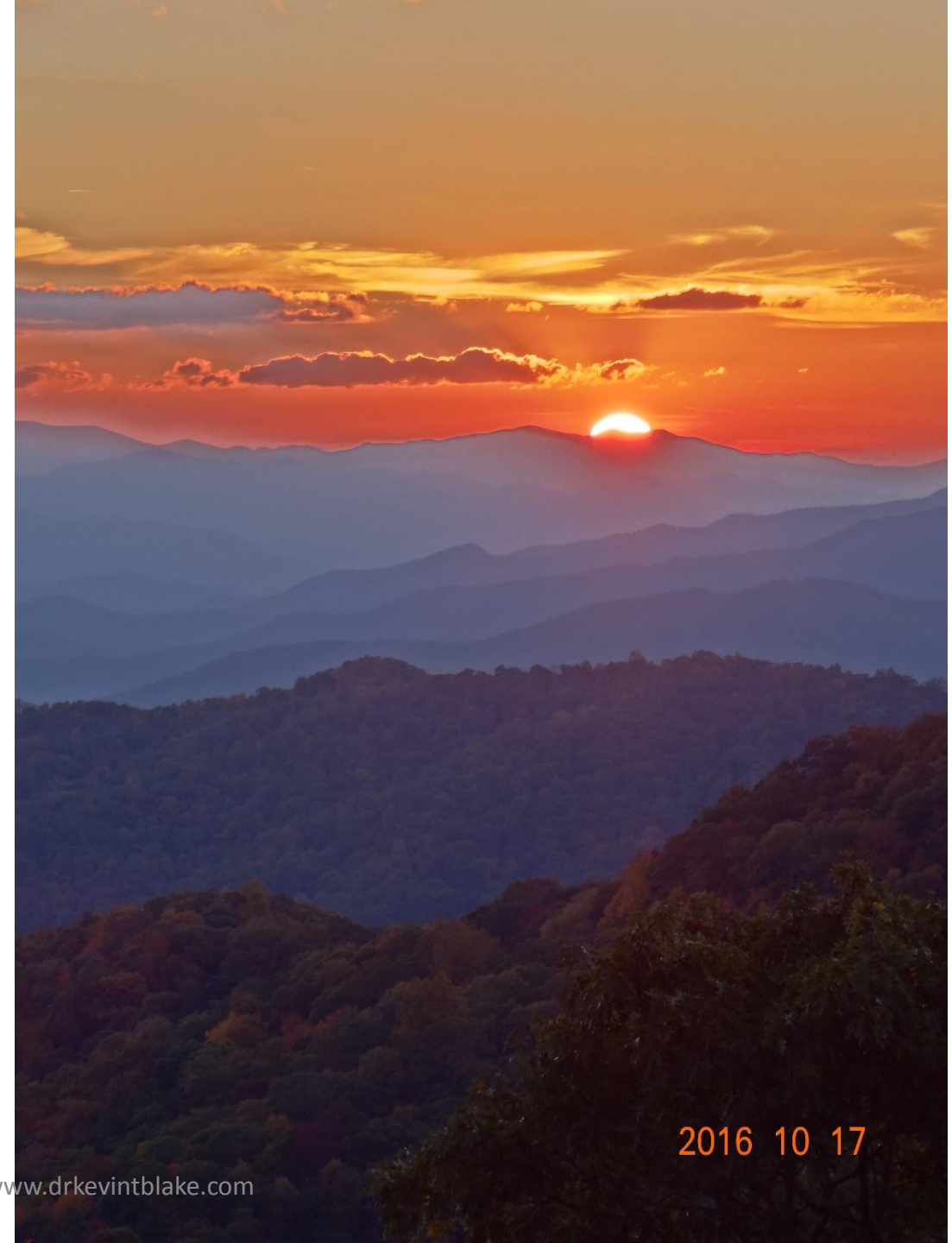
Texas Children's Hospital

Houston, Texas

Sunday, July 14, 2019

Kevin T. Blake, Ph.D., ADHD-CCSP, P.L.C.

Announcements, Disclosures and Paperwork



Disclaimer

“Materials that are included in this course may include interventions and modalities that are beyond the authorized practice of mental health professionals. As a licensed professional, you are responsible for reviewing the scope of practice, including activities that are defined in law as beyond the boundaries of practice in accordance with and in compliance with your profession’s standards.“

Disclaimer

- None of the techniques described in this seminar will work for all children with AD/HD. Every child with AD/HD is different.
- There are no absolutes.
- All treatments have negative side effects. Some more than others. The presenter will do his best to cover the most common ones.
- The theories described in this seminar do not have the same amount of empirical evidence supporting each one of them. The presenter will do his best to describe the pros and cons of each.
- If you are concerned about a treatment technique described in this seminar ask the presenter about it.

Disclaimer

- **Speaker Disclosure:**
- **Financial: Kevin Blake maintains a private practice. He is a stockholder in Johnson & Johnson, Inc. and Amgen, Inc. Dr. Blake receives a speaking honorarium from PESI, Inc.**
- **Non-financial: Kevin Blake is a member of the Children and Adults with Attention Deficit Disorders (CHADD), International Dyslexia Association (Orton Oak), Learning Disabilities Association of America, and American Psychological Association, Institute of Certified ADHD Professionals, Pet Partners of Arizona.**

AD/HD Medication Research Summary

AD/HD Medication Research Summary

- **Medication plus behavioral techniques work significantly better long-term than medication, or behavioral techniques alone.**

- **Jensen, R. et al. (February, 2001). Findings From The NIMH Multimodal Treatment Study (MTA): Implications and Applications for Primary Care Providers. Journal of Developmental Pediatrics, 22(1), 60-73.**
- **Molina, B.S.G. et al. (May, 2009). The MTA Study at 8 Years: Prospective Follow-up of Children Treated for Combined Type ADHD in a multisite Study. Journal of the American Academic of Child and Adolescent Psychiatry, 48(5), 484-500.**
- **Hinshaw, S.P., and Arnold, L.E. (January, 2015). ADHD, Multimodal Treatment and Longitudinal Outcome, Paradox, and Challenge. Wiley Interdisciplinary Review of Cognitive Science (WIRE), 6(1), 39-52.**
- **Dopfner, M. et al. (2004). Effectiveness of an adaptive multimodal treatment in children with Attention-Deficit Hyperactivity Disorder—Global outcome. European Society of Child and Adolescent Psychiatry, 13 (Suppliment 1), 117-129.**
- **Dopfner, M. et al. (July, 2016). Long-Term Course After Adaptive Multimodal Treatment for Children with AD/HD: and 8 year follow-up. Journal of Attention Disorders. DOI: 10.1177/1087054716659138.**

AD/HD Response Rate to Stimulant Titration

- **Titration using all three stimulants there is a 90% response rate**
- **Patients improve 70 to 90 percent of the time and normalize 50 to 60 percent of those while on a therapeutic dose.**
- **"When the discussion is specifically reserved to symptom relief and impairment reduction for ADHD, this series of articles adds to an impressive body of scientific literature…**

"…demonstrating that medication treatment, in the case of methylphenidate, is cost efficient and may be all that is needed for good responders." (p. 3)

Mahoney, W. (2002). The Use of Stimulant Medication in the Treatment of Attention Deficit Hyperactivity Disorder. Pediatrics & Child Health, 7 (1), pp. 693-696.

Barkley, R.A. (2018). Advances in The Management of ADHD: Evidence-Based Medications and Psychosocial Treatments. Seminar presented by PESI, Inc., Eau Clare, WI.

Barkley, R.A. (2012). Executive Functions: What They Are, How They Work, and Why They Evolved. New York, NY: Guilford.

Goldstein, S. (December, 2004). Do Children with ADHD Benefit from Psychosocial Intervention, ADHD Report, 12 (6), 1-3.

AD/HD Medication Research Summary

Behavioral Benefits of Stimulants:

- **Increased concentration and persistence**
- **Decreased hyperactivity and Impulsivity**
- **Increased productivity**
- **Decreased absences**
- **Better reading achievement by 18 years**
- **Less likely held back a year**
- **Better emotional control**
- **Less defiance, aggression & antisocial behavior**
- **Lowers chances of substance abuse and smoking**
- **Better compliance**
- **Better internalized speech and Working Memory**
- **Better motor control and handwriting**

AD/HD Medication Research Summary

- Better self-esteem
- Decreased punishment
- Better game awareness in sports
- Improved attention
- Better reaction time in driving- better drivers
- Improves academic production
- Long term treatment possible better annual achievement test scores
- Stimulants are neuroprotective:
  - Accelerates brain growth in basal ganglia & cerebellum
  - Shown in 32 studies
  - In Children and Adults
- Methylphenidate may reduce the reduce the chances of stress fractures in those with AD/HD long term.

Barkley, R.A. (2018). Advances in The Management of ADHD: Evidence-Based Medications and Psychosocial Treatments. Seminar presented by PESI, Inc., Eau Clare, WI.

Shermann, H. et al. (March, 2019). Lower risk of stress fractures in young adults with ADHD under chronic treatment with methylphenidate. DOI: 10.1016/j.bone.2018.09.023.

Long-Term Medication Treatment and Adult AD/HD

Researchers found that adults with AD/HD between the ages of 18 and 54 have structural changes in their cool executive functioning network. It is thought to demonstrate an improvement in this type of executive functioning. This appears to be due to long-term treatment with stimulant medication. Hence, this is another study that demonstrates that stimulant treatment for AD/HD in neuroprotective.

Moreno-Alcazar, A. et al. (August 30, 2016). Brain abnormalities in adults with Attention Deficit. Hyperactivity Disorder revealed by voxel-based morphometry. Psychiatry Research. DOI: 10.1016/j.pscychresns.2016.06.002.

GeneSight for AD/HD, & Mood Disorder

Developed through research at the Mayo and Cleveland Clinics. Swab inside of your cheek for DNA. Sample sent to GeneSight lab. Within 36 hours doctor gets report. Can choose appropriate medication and dose by your genes.

- **www.genesight.com**
- **http://mayoresearch.mayo.edu/center-for-individualized-medicine/drug-gene-testing.asp**
- **GenoMind: http://genomind.com**

Common Stimulant Side Effects

- **Decreased appetite:**
  - Dose after meals, encourage frequent snacks, drug holidays, decrease dose
- **Behavioral rebound:**
  - Try a sustained-release stimulant, add reduced dose in late afternoon
- **Irritability/dysphoria:**
  - Try another stimulant medication, consider coexisting conditions (eg, depression) or medications (eg, antidepressants)
- **Sleep problems:**
  - Institute a bedtime routine, reduce or eliminate afternoon dose, reduce overall dose, restrict or eliminate caffeine
- **Edginess:**
  - Change preparation, change class of stimulant, consider adding low-dose β blocker
- **Dry mouth:**
  - Proactive dental hygiene, encourage sips of water through the day, use of Biotene or equivalent, avoid sugared candies

Rare Stimulant Side Effects

- **Exacerbation of tics:**
  - **Observe, try another stimulant or class of attention-deficit/hyperactivity disorder medication (eg, α-adrenergic drugs)**
- **Psychosis/euphoria/mania/depression:**
  - **Stop treatment with stimulants, refer to mental health specialist**

Stevens, J.R. et al. (March 28, 2013). Using Stimulants for Attention-Deficit/Hyperactivity Disorder: Clinical Approaches and Challenges. Primary Care Companion for CNS Disorders. DOI: 10.4088/PCC.12f01472.

Something New: Trigeminal Nerve Stimulation for AD/HD

- **On April 19, 2019 the FDA announced marketing permits were granted to NeuroSigma to sell its Monarch eTNS units for children between the ages of 7 and 12. The machine, about the size of a cell phone is attached to the child's TN while sleeping. Company claims it may work as well as medication. Side effects: headache, teeth clinching, trouble sleeping, fatigue. Must have doctor's prescription to obtain. Company wants to get approval to treat PTSD, Depression, Epilepsy, & Lennox Gasteat Syndrome.**

Author (April 19, 2019). FDA permits marketing of first medical device for treatment of ADHD. FDA News Release. From website: https://www.fda.gov/news-events/press-announcements/fda-permits-marketing-first-medical-device-treatment-adhd.

McGough, J.J. et al. (April, 2019). Double-Blind, Sham-Controlled, Pilot Study of Trigeminal Nerve Stimulation for Attention-Deficit/Hyperactivity Disorder. Journal of the American Academy of Child Psychiatry. DOI: 10.1016/j.jaac.2018.11.013.

Executive Function & Phineas Gage

Phineas Gage

- Vermont, 1848 was 25 year old railroad working tamping gun powder in a drilled hole in rock excavation.
- Explosion forced 3 foot iron rod through his left cheek and out the top of his skull.
- Lost his left eye, but not consciousness; no focal neurological deficits; left facial weakness.
- Massive personality change:
  - Prior to accident was, "the most efficient and capable foreman"
  - After accident was childish, obstinate, could not control his desires, his friends did not consider him to be Phineas Gage.
  - He had problems with short-term memory, motor attention and inhibitory control.

O'Driscoll, K., and Leach, J.P. (December 19, 1998). "No Longer Gage": An Iron Bar Through The Head -- Early observations of personality change after injury to the prefrontal cortex. British Medical Journal, 317(7174), 1673-1674. From website: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1114479/.

- Damage to right & left prefrontal lobes = Problems with rational decisions and processing emotion.

Damasio, H., et al. (August 26, 1994). The return of Phineas Gage: clues about the brain from the skull of a famous patient. Science, 264(5162), 1102-1105. From website: http://www.ncbi.nlm.nih.gov/pubmed/8178168.

What is Executive Function (EF)?

Executive Function Defined

Denckla defined executive functions as, "…the proactive elements of interference control, effortful and flexible organization, and strategic planning—that is, anticipatory, goal-oriented 'preparedness to act.' Executive function also may be construed to include working memory…, highlighting as it does the elements of delay between stimulus and response or maintenance of internal representations to guide actions" (p. 117-118).

Denckla, M.B. (1994). Measurement of Executive Function. In G. R. Lyon (Ed.), Frames of Reference for the Assessment of Learning Disabilities: New Views on Measurement Issues. Baltimore, MD: Brookes.

When You Have to Use EF

- Those that involve planning or decision making.
- Those that involve error correction or troubleshooting.
- Situations when responses are not well rehearsed or contain novel sequences of actions.
- Dangerous or technically difficult situations.
- Situations that require the overcoming of a strong habitual response or resisting temptation.

Goldstein, S. (November 9, 2017). Understanding and Evaluating Executive Functioning in ADHD Across the Life Span. Paper presented at the CHADD International Conference, Atlanta, GE, Pre-Conference Institutes, Session TA-01, November 9, 2017.

Theory of Executive Function

Baddeley's Executive Function Theory

"The term working memory refers to a brain system that provides temporary storage and manipulation of the information necessary for such complex cognitive tasks as language comprehension, learning, and reasoning. This definition has evolved from the concept of a unitary short-term memory system. Working memory has been found to require the simultaneous storage and processing of information. It can be divided into the following three subcomponents…" (p. 556).

Baddeley's Executive Function Theory (Cont'd)

Central Executive: "The central executive, which is assumed to be an attentional-controlling system, is important in skills such as chess playing and is particularly susceptible to the effects of Alzheimer's disease; and two slave systems, namely…" (p. 556).

- **Phonological Loop: "The phonological loop, which stores and rehearses speech-based information and is necessary for the acquisition of both native and second-language vocabulary" (p. 556).**
- **Visual-Spatial Sketchpad: "…which manipulates visual images" (p. 556).**

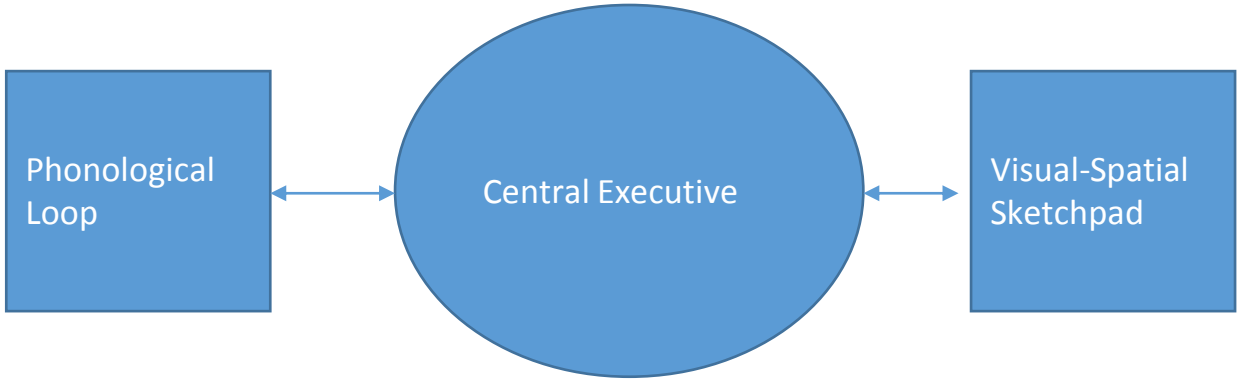
Baddeley, A. (January 31, 1992). Working Memory. Science, 255(5044), 556-559. DOI: 10.1126/science.1736359.

Baddeley's Executive Function Theory (Cont'd)

These systems, "…allow humans to comprehend and mentally represent their immediate environment, to retain information about their immediate past, to support the acquisition of new knowledge, to solve problems, and to formulate, relate, and act on current goals"(p. 28).

Baddeley, A. (January 31, 1992). Working Memory. Science, 255(5044), 556-559. DOI: 10.1126/science.1736359.

Baddeley's Executive Function Theory (Cont'd)



Baddeley, A. (January 31, 1992). Working Memory. Science, 255(5044), 556-559. DOI: 10.1126/science.1736359.

Definitions of Executive Function

Executive Function Defined

“Executive functioning is a higher level psychological process responsible for cuing, directing and coordinating multiple aspects of perception, cognition, emotion, and behavior during purposeful, goal directed, problem solving behavior” (p. 29).

Dehn, M.J. (2014). Essentials of Processing Assessment, Second Edition. Hoboken, NJ: Wiley.

Naglieri & Goldstein's Definition of Executive Function

"Executive Function is how efficiently you decide what to do."

Goldstein, S. (November 9, 2017). Understanding and Evaluating Executive Functioning in ADHD Across the Life Span. Paper presented at the CHADD International Conference, Atlanta, GE, Pre-Conference Institutes, Session TA-01, November 9, 2017.

"Executive Function"

- 1. Set goal; 2. gather info; 3. rate routes; 4.select route; 5. monitor; 6. change route; 7. solution

Naglieri, J.A. et al. (2014). Handbook of Executive Function. New York, NY: Springer.

- Those that involve planning or decision making.
- Those that involve error correction or troubleshooting.
- Situations when responses are not well rehearsed or contain novel sequences of actions.
- Dangerous or technically difficult situations.
- Situations that require the overcoming of a strong habitual response or resisting temptation.

Goldstein, S. (November 9, 2017). Understanding and Evaluating Executive Functioning in ADHD Across the Life Span. Paper presented at the CHADD International Conference, Atlanta, GE, Pre-Conference Institutes, Session TA-01, November 9, 2017.

Brain Areas Involved in EF

Brain Areas Involved in EF

- Prefrontal Cortex
- Basal Ganglia
- Amygdala
- Limbic System
- Cerebellum

Barkley, R.A. (2012). Executive Functions: What They Are, How They Work, and Why They Evolved. New York, NY: Guilford.

- Prefrontal, subcortical and brain stem
  - Dorsolateral Prefrontal Cortex – Integrates behavior and cognition
  - Anterior cingulate cortex -- emotional drives decision making and inhibition
  - Orbital prefrontal cortex-maintenance of set, monitor of behavior for appropriateness

Goldstein, S. (November 9, 2017). Understanding and Evaluating Executive Functioning in ADHD Across the Life Span. Paper presented at the CHADD International Conference, Atlanta, GE, Pre-Conference Institutes, Session TA-01, November 9, 2017.

Negative Influences On Executive Function

Negative Influences of Executive Function

- **"People with ADHD, depression, learning disabilities, and autism often have difficulties with executive function. Alzheimer's disease or brain damage (for example from concussion or stroke) can also affect executive function. Some research has found an association between OCD and problems with executive function.**
- **People with no executive function impairment can experience temporary problems. For example, being overly stressed, sad, or sleep-deprived can hinder a person's executive function ability".***

Author (January 19, 2017).* Executive Function of the Brain: Key to Organizing, Managing Time and More. American Psychiatric Association, Washington, DC from Website: https://www.psychiatry.org/news-room/apa-blogs/apa-blog/2017/01/executive-function-of-the-brain-key-to-organizing-managing-time-and-more.

Diamond, A. (September 27, 2012). Executive Functions. Annual Review of Psychology. DOI: 10.1146/annurev-psych-113011-143750.

Diamond's Literature Review of EF

- Good EF in childhood-Typically will have it through life
- EF can be taught throughout life and practice can improve it
- Predicts: achievement, quality of life, physical and financial health
- Fluid Intelligence (decision making/problem solving) can be taught and practice can improve it
- Interference Control (selective attention/inhibition) may be the part of EF that protects what is in working memory
- Sleepiness, loneliness, and lack of fitness can hurt executive function

Diamond, A. (September 27, 2012). Executive Functions. Annual Review of Psychology. DOI: 10.1146/annurev-psych-113011-143750.

Interventions for Executive Functions

Teaching Executive Function

Goldstein (2017) states, "Children can be taught to be more strategic." Or, more efficient with executive function. He went on to say this is also true throughout the lifespan.

Goldstein, S. (November 9, 2017). Understanding and Evaluating Executive Functioning in ADHD Across the Life Span. Paper presented at the CHADD International Conference, Atlanta, GE, Pre-Conference Institutes, Session TA-01, November 9, 2017.

Interventions for Executive Functions

- **Teach Self-Monitoring and Self-Talk**
- **COGMED**
- **Teach Metacognitive Strategies, Planning and Decision Making**
- **Teach Multisensory Memory**
- **Associate things to remember with familiar place-Loci**

Dehn, M.J. (2014). Essentials of Processing Assessment, Second Edition. Hoboken, NJ: Wiley.

Coaching and Executive Functioning

- **Coaching can work to relieve executive function difficulties in adolescents.**
- **Coaching is more directive than counseling/talk therapy.**

Goldstein, S. (November 9, 2017). Understanding and Evaluating Executive Functioning in ADHD Across the Life Span. Paper presented at the CHADD International Conference, Atlanta, GE, Pre-Conference Institutes, Session TA-01, November 9, 2017.

Helping with Executive Function Difficulties

- **Cognitive Behavioral Therapy (CBT): "Stop, Look, Listen"**
- **Must teach at the point of performance.**
- **"A strategy is a procedure that a learner uses to perform a task."**
- **It is thinking, "how do I accomplish what I want to do."**
- **Practice, practice, practice…until it is automatic**
- **Teach "Metacognition", "Thinking about thinking", this works with everyone.**

Goldstein, S. (November 9, 2017). Understanding and Evaluating Executive Functioning in ADHD Across the Life Span. Paper presented at the CHADD International Conference, Atlanta, GE, Pre-Conference Institutes, Session TA-01, November 9, 2017.

Interventions for Executive Dysfunction

- **Guiding Principals:**
  - Automatize new behaviors-habits
  - Self-Awareness-strengths & weaknesses
  - Teach goal setting, planning and review
- **Organization & Planning:**
  - One master schedule (or, 1 @ home, 1 @ work/school) (paper/digital)
  - Keep all notes in one place
- **Clutter Control:**
  - Everything has a “home”
  - Rules for how long you keep things
  - “Touch it once”
  - Schedule organization times
- **Financial Organization:**
  - ID problem areas
  - Set short, mid, and long-term $ goals
  - Learn where $ is going and keep track of it

Interventions for Executive Dysfunction

- Automatic payments, etc.
- Make "habit"

- **Time Management:**
  - Learn how long you can work without distraction
  - Set goal of time you will work without distraction
  - ID distractors in work environment & get rid of them

- **Getting Projects Done:**
  - **Set goal;**
    - Use S.M.A.R.T. (Specific, Measurable, Attainable, Relevant & Timely) create "to do list", to understand task and required outcome.
  - **Process:**
    - Write down all steps
    - Determine realistic amount of time needed for each step
    - Set priorities and schedule time for each step
    - Start working plan and monitor progress

Interventions for Executive Dysfunction

- **Healthy Living:**
  - Good sleep every night
  - Good diet; no excesses
  - Weekly exercise plan-possibly develop with physician's help
  - Allow for rest and relaxation-learn relaxation technique (automatize)
  - Monitor mood; if bad 2 weeks get help
- **Adaptive Thinking:**
  - Monitor & chart negative and positive self-talk
  - Learn to counter negative self-talk with positive
  - Practice relaxation technique
  - Automatize

Jennings, A., and Nguyen, C. (September 5, 2014). STRATEGIES FOR IMPROVING EXECUTIVE FUNCTIONING SKILLS: A MODEL FOR THERAPEUTIC INTERVENTION. Paper presented at the 3rd Annual Conference on ADHD and Executive Function, Sheraton Station Square, Pittsburg, PA, September 5th, 2014.

Memory Difficulties

Memory Problems Everyone Has

- **Transience: problems accessing memory over time**
- **Absent-mindedness: lapses in attention**
- **Blocking: tip of the tongue experience**
- **Suggestibility: the incorporation of misinformation into memory**
- **Bias: altering memory to fit beliefs**
- **Misattribution: believing you heard something you didn't.**

Murray, B. (October, 2003). Convention Award-Winner Daniel Schacter Explained the Ways Memory Tricks Us. Monitor On Psychology, 34 (9), pp. 28-29.

Schacter, D. (2001). The Seven Sins of Memory: How the Mind Forgets and Remembers. New York, NY: Houghton Mifflin.

Two General Memory Systems

- ***Declarative Memory***: **Remembering the what, i.e. Facts and Events**
- ***Procedural Memory:*** **Knowing how to do something**
- **Proficient Reading is a skill and is a product of procedural memory.**
- **With procedural memory robust gains in knowledge are made after training is terminated.**
- **Train until the person's new behavior plateaus, stop training then allow to sleep. The next day they will have improved behavior and less errors.**

Two Memory Systems (Continued)

- **This will not happen if the person is not allowed to sleep and/or if they are then taught a competing task.**
- **If the training situation is considered novel, learning will continue to increase.**

Karni, A. (November 3, 2004). Brain Basis of Skill Acquisition and Learning: How do They Relate to Reading? Paper presented during the Neural Basis of Reading and Other Forms of Skills Acquisition Symposium of the 55th Annual International Dyslexia Association Conference, Philadelphia, PA, Session W-1.

Karni, A., Tanne, D., Rubenstein, B.S., Askensay, JJ., and Saji, D. (1994). Dependence on REM Sleep of Overnight Improvement of A Perceptual Skill. Science, 265 (5172), pp. 679682.

Sleep and Memory

- "…sleep allows us to process and retain new memories and skills." (p. 58)
- Deprive sleep/block training improvement in skill
- "Evidence for sleep's effect on declarative memory is much weaker than its effect on procedural memory." (p. 59)
- Good sleep creates better procedural memory.

Stickgold, R. (2005). Sleep-Dependent Memory Consolidation. Nature, 437 (7063), pp. 1272-1278.

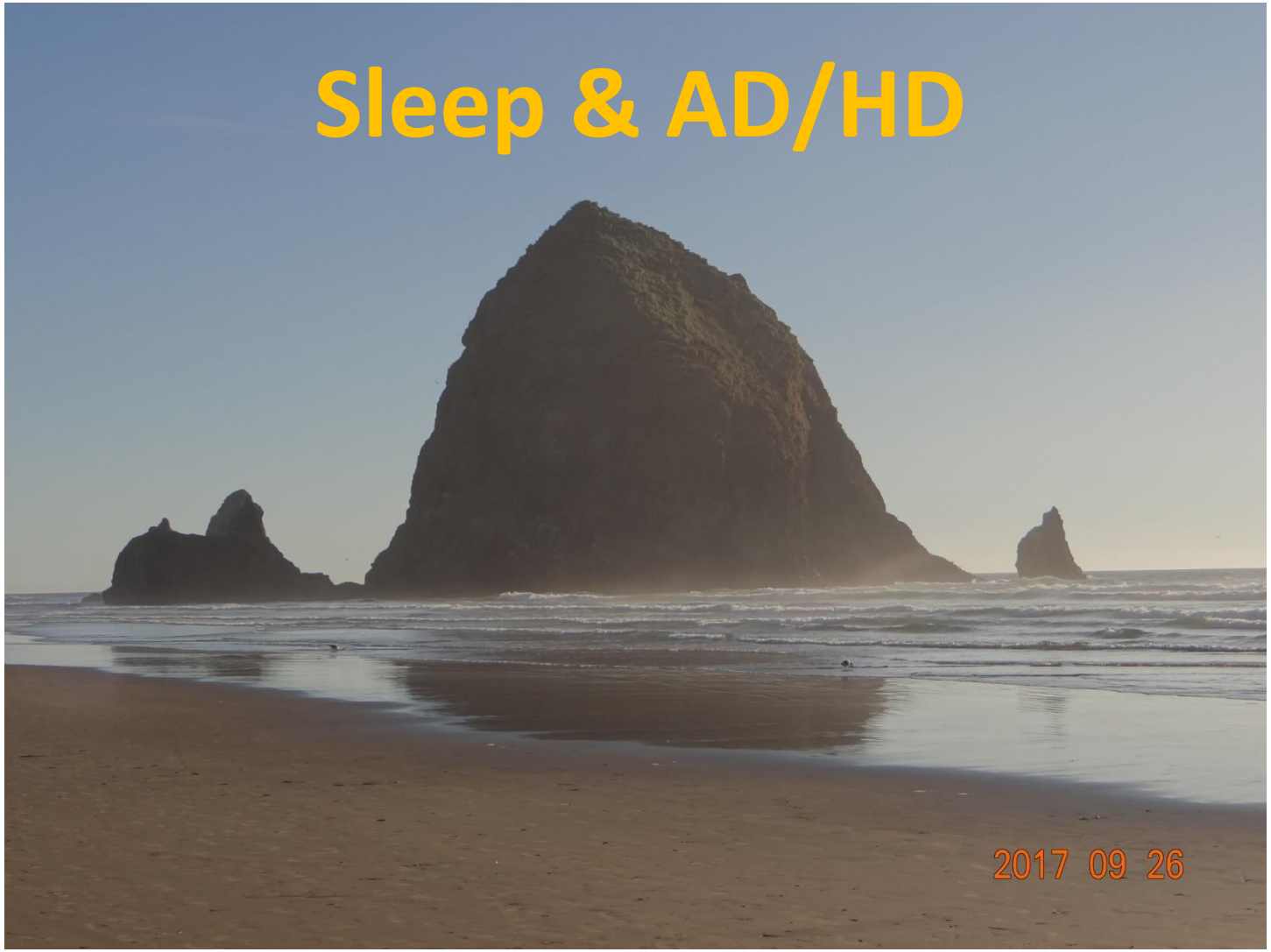
Winerman, L. (January, 2006). Let's Sleep On It. Monitor On Psycholoy, 37 (1), pp. 58-60.

Nguyem, N.D. et al. (July 1, 2013). Overnight Sleep Enhances Hippocampus-Dependent Aspects of Spatial Memory

Sleep. 36(7), 1051-1057. DOI: https://doi.org/10.5665/sleep.2808.

Schonauer, M. (January 2014). Strengthening Procedural Memories by Reactivation in Sleep. Journal of Cognitive Neuroscience, 26(1), 143-153. DOI: 10.1162/jocn_a_0047.

Sleep & AD/HD



AD/HD & Sleep

- Children with AD/HD:
  - Up to 39% sleep walk
  - 56% have trouble going to sleep
  - Have fewer sleep hours than non-AD/HD children
  - Have more movement during sleep
  - Have more periods of sleepiness during the day

- Stimulant medications can lengthen sleep onset
- Sleep problems may exacerbate academic/work problems, but if academic/work problems not caused by sleep problem, better sleep may not translate to fewer waking problems.

Barkley, R.A. (2012). ADHD: Cutting Edge Understanding and Management. Seminar sponsored by J&K Seminars, L.L.C., 1861 Wickersham Lane, Lancaster, PA 17603-2327, p.1.

Craig, S.G., et al. (January 16, 2017). The Functional Impact of Sleep Disorders in Children With ADHD. Journal of Attention Disorders. DOI: 10.1177/1087054716685840.

AD/HD & Sleep

"These problems could be reduced to three general factors: (1) dyssomnias (bedtime resistance, sleep onset problems, or difficulty arising), (2) sleep-related involuntary movements (teeth grinding, sleeptalking, restless sleep, etc.), and (3) parasomnias (sleepwalking, night wakings, sleep terrors). Dyssomnias were primarily related to comorbid ODD or treatment with stimulant medication, while parasomnias were not significantly different from the control group. However, involuntary movements were significantly elevated in children with the Combined Type of ADHD."

Barkley, R.A. (January 25, 2013). ADHD: Nature, Course, Outcomes, and Comorbidity. CotinuingEdCourses.Net. From website: http://www.continuingedcourses.net/active/courses/course003.php.

Sleep & AD/HD

- Depriving children of sleep significantly reduces their performance on math tasks, and their ability to control this emotions.
- Such children are more apt to have comorbid AD/HD and/or depression.

Caprenter, S. (October, 2001). How Does the Brain Catch Up? Monitor On Psychology, 32 (9), p. 46.

Sleeping EEG studies have shown increase emotional memory bias in children without AD/HD when compared children with AD/HD. The later group appears to be significantly worse at consolidating emotional memories and this appears to explain their difficulties with emotional control somewhat.

Prehn-Kristensen, et al. (2013) Sleep Promotes Consolidation of Emotional Memory in Healthy Children but Not in Children with Attention-Deficit Hyperactivity Disorder. PLoS ONE, 8(5): e65098. doi:10.1371/journal.pone.0065098

Sleep, Anxiety, and Children

- Children 6 to 13 years old need between 9 and 11 hours sleep a night.
- Glowing screens and caffeine can cause bedtime resistance, difficulty going to sleep, nightmares, and fewer sleep hours.
- Less sleep can cause significant mood swings.
- Tips for better sleep in this age range:
  - No Caffeine
  - No glowing screens in bedroom
  - Teach sleep hygiene
  - Regular and consistent sleep schedule
  - Keep room at bedtime cool, dark and quiet

(Author) (No Date). Children and Sleep. National Sleep Foundation: Arlington, VA. From website: https://sleepfoundation.org/sleep-topics/children-and-sleep.

Sleep, Obesity & AD/HD

Too little sleep can lead to glucose metabolism changes, a bigger appetite, and a decrease calories burned. Too little sleep is a risk factor in obesity and diabetes.

Knutson, K.L. et al. (June, 2007). The Metabolic Consequences of Sleep Deprivation. Sleep Medicine Review. 11(3), 163-176. DOI: 10.1016/j.smrv.2007.01.002.

"The recent generation of children with ADHD is 1.5 times more likely to be overweight, or obese…"

Barkley, R.A. (2015). Health Problems and Related Impairments in Children and Adolescents with ADHD. In R.A. Barkley (Ed.), Attention-Deficit Hyperactivity Disorder: A Handbook for Diagnosis & Treatment. New York, NY: Guilford, 298.

Dealing with Nightmares in Children

- Listen to & reassure child
- Do fun things in the dark
- Teach coping skills/how to be brave
- Nightlight
- "Secure" the room
- Relaxation training
- No scary TV/Movies
- Discuss child's fears and coping during the day
- Set limits…Don't reinforce the wrong behavior
- Have them sleep in their own bed
- Check on them predictably
- Token economy.

Mindell, J. (June 2015). Children and Bedtime Fears and Nightmares. National Sleep Foundation: Arlington, VA. From website: https://sleepfoundation.org/ask-the-expert/children-and-bedtime-fears-and-nightmares.

Exhaustion, Anxiety, and AD/HD

Roffman wrote, "One final ongoing issue that is worthy of mention for many with LD/ADHD is the problem of fatigue. The extra effort required to cope with the continued social and academic demands of schooling can be chronically exhausting." (p. 217)

Roffman, A.J. (2000). Meeting The Challenge of Learning Disabilities In Adulthood. Baltimore, MD: Brookes.

Roffman wrote, "Adults with LD/ADHD often experience pressure as they work to cope with their symptoms. Anxiety develops out of such day-to-day occurrences as the loss of yet another set of keys…" (p. 49)

Roffman, A.J. (2000). Meeting The Challenge of Learning Disabilities In Adulthood. Baltimore, MD: Brookes.

Sleep Extension & AD/HD

A recent pilot study suggested that sleep extension in children with AD/HD their improved inhibitory control by 13% compared to their non-impaired peers 10%.

Cemone-Caira, A. et al. (May 29, 2019). Effects of Sleep Extension on Inhibitory Control in Children With ADHD: A Pilot Study. Journal of Attention Disorders. DOI: 10.1177/1087054719851575.

Working Memory

Executive Function
Memory Problems

- **Working Memory:**
  - **"…denotes a person's information-processing capacity" (p. 4-5)**
  - **Is the "memory buffer in the brain."**
  - **It allows for "theory of mind."**
  - **"Remembering so as to do."(non-informational)**

Wechsler Adult Intelligence Scale- Third Edition, Wechsler Memory Scale-Third Edition (1997). Technical Manual. San Antonio, TX : Psychological Corporation.

Brown, T. E. (October 11, 2001). Assessment and Treatment of Complicated ADHD Across the Lifespan. Seminar Presented at the Arizona Association of School Psychologists 33rd Annual Conference, Mesa, AZ.

Frith, C. D. and Frith, U. (1999). Intersecting Minds-A Biological Basis. Science, 286, pp. 1692- 695.

Barkley, R.A. (2008). Advances in ADHD: Theory, Diagnosis and Management. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; www.jkseminars.com.

Possible Working Memory Computer Training Programs

Working Memory Training:

- Cogmed: www.cogmed.com
- Literature Review of Working Memory Training:

  It only works to train the person how to do better with the training program. It does not generalize.

Klingberg, T. (February, 2006). Training Working Memory. AD/HD Report, 14 (1), pp. 6-8.

Barkley, R. (February, 2006). Editorial Commentary Issues in Working Memory Training in ADHD. ADHD Report, 14 (1), pp. 9-11.

Smith, G.E., et al. (2009). A Cognitive Training Program Based on Principles of Brain Plasticity: Results from the Improvement in Memory with Plasticity-based Adaptive Cognitive Training (IMPACT) Study. Journal of the American Geriatrics Society, 57, 594-603; from website: https://wiki.umn.edu/pub/LNPI/ExpertPanelPublications/G_Smith__A_cognitive_training_program_based_on_principles_of_brain_plasticity_results_from_the_Improvement_in_Memory_with_Plasticitybased_Adaptive_Cognitive_Training_study..pdf.

Shipstead, Z., Redick, T.S. and Randall, W.E. (2012). Is Working Memory Training Effective? Psychological Bulletin, DOI: 10.1037/a0027473.

Richard Abby on Working Memory

- **WM is the best predictor of academic success:**
  - **Reading Comprehension, Math Word Problems, Computation, Verbal Mediation, Complex Reasoning and Inhibition**

Abby, R. (November 12, 2014). What is Working Memory and What is the Role of Working Memory in Attention and Learning. Paper presented as part of the Understanding and Remediating Working Memory Deficits in Students With Dyslexia Symposium (W6 Symposium) At the 65th Annual International Conference of the International Dyslexia Association, San Diego, CA.

- **Rehearsal is best for temporary storage**
- **When item in WM is lost it cannot be recovered.**
- **80% with working memory problems have significant difficulty with reading, or math, or both**

Richard Abby on Working Memory

- **Things that disrupt Working Memory:**
  - Background noise
  - Distraction
  - Switching Attention
  - Too much information to encode by rote
  - Too much mental manipulation required to retain information
  - Never encoding it into Long-Term Memory

- **What helps Working Memory:**
  - Silent environment
  - White noise
  - Repeat over and over by rote
  - Associating it with something in Long-term memory
  - Rhyming, Mnemonics, chunking.

Abby, R. (November 12, 2014). What is Working Memory and What is the Role of Working Memory in Attention and Learning. . Paper presented as part of the Understanding and Remediating Working Memory Deficits in Students With Dyslexia Symposium (W6 Symposium) At the 65th Annual International Conference of the International Dyslexia Association, San Diego, CA.

Aids for Working Memory

Techniques that Help Memory

- **Periodically testing ones memory of things one wants to remember to weed out poor techniques.**

Alderson, R. et al. (May, 2013). Working memory deficits in adults with attention deficit/hyperactivity disorder (ADHD): An examination of central executive and storage/rehearsal processes. Journal of Abnormal Psychology, 122(2), May 2013, 532541. doi: 10.1037/a0031742.

- **"Self-Imagining" in a made up story of the content you want to remember (episodic memory).**

Grilli, M.D., and Glisk, E.L. (August 5, 2012). Imagining a Better Memory: Self-Imagination in Memory-Impaired Patients. Clinical Psychological Science, 20(10), 1-7. From website: http://cpx.sagepub.com/content/early/2012/10/02/2167702612456464.full.pdf+html.

Working Memory Interventions

- Teach
  - N-Back
  - Chunking
  - Rehearsal
  - How to ask for help
- Reduce Cognitive Load
  - Match amount of information to WM limit
  - Repetition, Repetition…
  - No multitasking
  - Provide memory prompts

- Reduce Cognitive Load
  - Self-paced learning
  - Allow extended time
  - Provide note taker/recorder
  - Stay on topic
  - Use only Key examples
  - Allow step by step directions on desk

Dehn, M.J. (2014). Essentials of Processing Assessment, Second Edition. Hoboken, NJ: Wiley.

Remember – Homework is for practice, not initial learning.

--C. Wilson Anderson, Jr., MAT

Treatments For Memory Disorders

- Mnemonics-memory tricks
- Diaries and Social Statements
- Check for sleep disorders.*
- Nootropic Medications
- www.doctormemory.com
- Doctor memory
- Lucas, J. and Lorayne, H. (1974). The Memory Book. New York, NY: Ballantine.

Nosek, K. (1997). Dyslexia in Adults: Taking Charge of Your Life. Dallas, TX: Taylor.

Smith, L. and Godfrey, H.D.P. (1995). Family Support Programs Rehabilitation: A Cognitive- Behavioral Approach to Traumatic Brain Injury. New York, NY: Plenum.

Barkley, R.A. (2008). Advances in ADHD: Theory, Diagnosis and Management. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; www.jkseminars.com.

Fawcett, A.J. (October 29, 2010). Dyslexia, Dysgraphia and Procedural Learning Deficit. Paper Presented at the 61st Annual International Dyslexia Association Conference, Phoenix, AZ (October 27-30, 2010), Session F5.

Goldstein, S. and Goldstein, M. (1997). Drugs Affecting Learning, Attention, and Memory. In S. Goldstein (Ed.), Managing Attention and Learning in Late Adolescence & Adulthood: A Guide for Practitioners. New York, NY: John Wiley & Sons, pp. 327-373.

Good Book for Memory Difficulties

Dornbush, M.P. and Pruitt, S.K. (2009). Tigers, Too: Executive Functions/Speed of Processing/Memory-Impact on Academic, Behavioral and Social Functioning of Students with ADHD, Tourette Syndrome and OCD: Modifications and Interventions. Atlanta, GA: Parkaire.

Coaching and Executive Functioning

- **Coaching can work to relieve executive function difficulties in adolescents.**
- **Coaching is more directive than counseling/talk therapy.**

Goldstein, S. (November 9, 2017). Understanding and Evaluating Executive Functioning in ADHD Across the Life Span. Paper presented at the CHADD International Conference, Atlanta, GE, Pre-Conference Institutes, Session TA-01, November 9, 2017.

Helping with Executive Function Difficulties

- Cognitive Behavioral Therapy (CBT): “Stop, Look, Listen”
- Must teach at the point of performance.
- “A strategy is a procedure that a learner uses to perform a task.”
- It is thinking, “how do I accomplish what I want to do.”
- Practice, practice, practice…until it is automatic
- Teach “Metacognition”, Thinking about thinking”, this works with everyone.

Goldstein, S. (November 9, 2017). Understanding and Evaluating Executive Functioning in ADHD Across the Life Span. Paper presented at the CHADD International Conference, Atlanta, GE, Pre-Conference Institutes, Session TA-01, November 9, 2017.

Classroom EF Strategies on the Net

- **Tools of the Mind: www.toolsofthemind.org**
- **ERIC Institute of Educational Sciences: www.eric.ed.gov**
- **National Dissemination Center for Children with Disabilities (NICHCY): www.nichcy.org**
- **The Power of Strategy Instruction: http://www.parentcenterhub.org/wp-content/uploads/repo_items/eestrategy.pdf**
- **Strategy Instruction Model: www. http://sim.kucrl.org/#1.**
- **EF in the Classroom.net: http://www.efintheclassroom.net/**

Technology for Memory Difficulties

- **Watchminder 2:**
  www.watchminder.com/
- **Record lectures with a digital device (smart phone, etc.)**
- **Time Management Organizer**
  www.FranklinCovey.com
- **Professional Organizer:**
  www.napo.org
- **California Closets:**
  www.californiaclosets.com
- **Rolodex Organizer:**
  www.franklin.com
- **Livescribe Smartpen:**
  www.livescribe.com
- **Brookstone Wireless Keyfinder:**
  www.brookstone.com/Wireless-Key-Finder.html
- **Get 168 hour desk blotter**

Professionals Who Can Help with Memory

- AD/HD Coaches: www.addbrain.com
- Professional Organizers: www.napo.net
- Psychiatrists: www.apa@psych.org
- Psychologists: www.apa.org
- Masters Level Counselors: www.nbcc.org
- Social Workers: www.naswdc.org
- Behavioral Neurologists: www.anpaonline.org
- Speech-Language Pathologists: www.professional.asha.org
- Physician (M.D./D.O.) Certified in Sleep Medicine: American Board of Sleep Medicine (www.absm.org); American Academy of Sleep Medicine (www.aasm.org)

Anxiety & Executive Function

Working Memory & Anxiety

- **"Acute stress can almost halve a person's mental capacity."**

  Klingberg, T. (2013). The Learning Brain: Memory and Brain Development in Children. New York, NY: Oxford University Press.

- **Anxiety can significantly reduce working memory capacity**
- **Verbal IQ can go down 20 points with anxiety**
- **Working Memory is connected to Impulse Control**
- **First grade anxiety predicts Fifth grade anxiety**
- **As anxiety goes up the ability to initiate new activities goes down.**

Minahan, J. (November 12, 2014). Theory Into Practice: Effective Intervention for Students with Anxiety. Paper Presented as part of The Impact of Stress and Anxiety on Cognition and Behavior in Students with Dyslexia: What to Know and What to Do Symposium (Symposium W3) of the 65th Annual International Dyslexia Association Conference, San Diego, CA.

What is Fear?

"… is the natural reaction to a threat that happens at a certain point in the stress response, when the sympathetic nervous system and the hypothalamic-pituitary-adrenal (HPA) axis shift into high gear…The physical symptoms range feeling tense, jittery, and short of breath to experiencing a racing heart, sweating, and in the case of full-blown panic attacks, severe chest pains."

Ratey, J.J. (2008). Spark: The Revolutionary New Science of Exercise and The Brain. Little, Brown, and Company: New York, NY, 87.

The emotional reaction to a real or imagined immediate threat. Fear involves escape behaviors, thoughts of avoiding immediate threats and autonomic arousal (Flight-or-Flight/Tend-and- Befriend).

Author (2013). Diagnostic and Statistical Manual of Mental Disorders, 5th Edition. American Psychiatric Association: Washington, DC.

Tend-and-Befriend

Taylor, S.E., Klein, L.C., Lewis, B.P., Gruenwald, T.L., Regan, A.R., Updegraff, J.A. (2000). Behavioral Response to Stress in Females: Tend-and-Befriend, not Flight-or- Flight. Psychological Review, 107(3), 411-429.

Fight-or-Flight/Tend-and-Befriend Vs Rage

"…the core emotion of RAGE evolved from the experience of being captured and held immobile by a predator. Stimulation of subcortical brain areas causes an animal to go into rage. RAGE gives the captured animal the explosive energy it needs to struggle violently and maybe shock a predator into loosening its grip enough that the captured animal can get away."

Grandin, T. , and Johnson, C. (2009). Animals Make Us Human: Creating the Best Life for Animals. New York, NY: Houghton Mifflin.

What is Anxiety?

The anticipation of a future danger is anxiety. It evolves avoidant/cautious behavior, vigilance, preparing for future threats, and muscle tension.

Author (2013). Diagnostic and Statistical Manual of Mental Disorders, 5th Edition. American Psychiatric Association: Washington, DC.

"Anxiety can be a normal reaction to stress".

Author (No Date). Anxiety Disorders in Children and Adolescents (Fact Sheet). Washington, DC: National Institute of Mental Health (NIMH). From website: http://www.nimh.nih.gov/health/publications/anxiety-disorders-in-children-and-adolescents/index.shtml.

Child and Adolescent Anxiety

- **A survey indicated 8% of teens between the ages of 13 and 18 have an anxiety disorder that typically emerges about age 6.**
- **Only 6% of these teens ever get treatment.**
- **Through brain imaging scientists have discovered the "anxiety" areas of the brain and have started to learn how they are affected by various anxiety disorders.**
- **Girls have more neurological risk of anxiety disorders than boys.**

Author (No Date). Anxiety Disorders in Children and Adolescents (Fact Sheet). Washington, DC: National Institute of Mental Health (NIMH). From website: http://www.nimh.nih.gov/health/publications/anxiety-disorders-in-children-and-adolescents/index.shtml.

Childhood Symptoms of Anxiety and Depression

- "Depressed or irritable mood
- Difficulty sleeping or concentrating
- Change in grades, getting into trouble at school, or refusing to go to school
- Change in eating habits
- Feeling angry or irritable
- Mood swings
- Feeling worthless or restless
- Frequent sadness or crying
- Withdrawing from friends and activities
- Loss of energy
- Low self-esteem
- Thoughts of death or suicide"

Author (2015). Anxiety and Depression in Children. Silver Spring, MD: Anxiety and Depression Association of America. From website: http://www.adaa.org/living-with-anxiety/children/anxiety-and-depression.

Changes in Diet that Can Reduce Anxiety

- Have some protein for breakfast
- Eat complex carbohydrates and whole grains
- Drink lots of water-dehydration can worsen anxiety
- Avoid caffeine
- Avoid food sensitivities
- Eat balanced meals
- Lots of fruits and vegetables
- As well as omega-3 fatty acids

Hall-Flavin, D.K. (March 6, 2014). Is it true that certain foods worsen anxiety and others have a calming effect? Rochester, MN: Mayo Clinic. From website: http://www.mayoclinic.org/diseases-conditions/generalized-anxiety-disorder/expert-answers/coping-with-anxiety/faq-20057987.

Anxiety + Depression

Almost half of those with depression are suffering from comorbid anxiety.

Author (2015). Facts and Statistics. Silver Spring, MD: Anxiety and Depression Association of America. From website: http://www.adaa.org/about-adaa/press-room/facts-statistics.

Large NIMH Treatment Studies of Child Anxiety

Child and Adolescent Multimodal Study (CAMS)

- Group 1: 12 weeks of Cognitive Behavioral Therapy (CBT)
- Group 2: Medication- Sertraline (SRT) aka. Zoloft a SSRI
- Group 3: Cognitive Behavioral Therapy + Sertraline
- Group 4: Placebo Pill
- Participants who received Sertraline were monitored by clinicians and administered questionnaires for suicidal ideation.
- ❖ All groups reassessed at 24 and 36 weeks

- All treatments were significantly better than placebo pill
- Co-therapy (CBT + Medication did best)
- Good news! Three potential treatments for child and adolescent anxiety – medication alone, CBT alone, or co-therapy
- More good news: Suicidal ideation is far less likely to be seen in children and adolescents administered SSRIs than in those with depression.

Child and Adolescent Multimodal Study (CAMS): Follow-Up

- 80% of responders at 24 and 36 weeks
- Group 3, CBT + Medication had significantly better results than CBT, or Medication alone
- There was no difference between the CBT alone group, and the medication alone group
- All the treatment groups did better than placebo
- At 48 weeks the children/adolescents who were in the placebo group received the combination therapy (CBT + Medication)
- Acute responders were more likely to be in remission 6 years after the study
- 48% of the responders had relapsed after 6 years
- The relapsers may have needed longer combined therapy

Piacentini, J., et al. (March, 2014). 24- and 36-Week Outcomes for the Child/Adolescent Anxiety Multimodal Study (CAMS). Child and Adolescent Psychiatry. 53(3), 297-310.

Ginsberg, G.S., et al. (March, 2014). Naturalistic follow-up of youths treated for pediatric anxiety disorders. JAMA Psychiatry, 71(3), 310-318.

Rynn, M.A., et al. (March, 2015). Child/Adolescent anxiety multimodal study: evaluating safety. Journal of the American Academy of Psychiatry, 54(3), 180-190.

Exercise and Anxiety

Exercise Is A First Line Treatment for Anxiety

"The majority of studies concluded that, as a treatment for elevated anxiety or anxiety disorders, exercise offers benefits comparable to established treatments, including medication or CBT, and better than those of placebo or waitlist control."

Stonerock, G. et al. (August, 2015). Exercise as Treatment for Anxiety: Systematic Review and Analysis. Annuals of Behavioral Medicine. DOI: 10.1007/s12160-014-9685-9.

Ratey, J.J. (2008). Spark: The Revolutionary New Science of Exercise and The Brain. New York, NY: Little, Brown.

Exercise as a Treatment for Anxiety/Fear

"As for the trait, the majority of studies show that aerobic exercise significantly alleviates symptoms of any anxiety disorder. But exercise also helps the average person reduce the feelings of anxiousness" (p. 92).

- **Exercise raises the Flight-or-Flight threshold and starts the cell recovery process.**

Ratey, J.J. (2008). Spark: The Revolutionary New Science of Exercise and The Brain. New York, NY: Little, Brown.

Often for those with clinically significant depression and anxiety more is needed like cognitive behavioral therapy and psychotropic medication. However, a regular regimen of aerobic exercise can lift mood, improve cardiovascular health and fitness among other things.

Dogs & Anxiety

Dogs, Children, and Anxiety

Centers for Disease Control and Prevention researchers found children with a dog in their home have a significantly lower probability of having anxiety.

Gadomski, A.M., et al. (November 25, 2015). Pet Dogs and Children's Health: Opportunities for Chronic Disease Prevention? Prevention Chronic Disease. DOI: 10.5888/pcd12.150204.

Canine Assisted Therapy and AD/HD

Researchers from California created a 12 week cognitive behavioral intervention to AD/HD children with and without canine assisted therapy. The children were randomly assigned to groups and their parents simultaneously attended weekly parenting groups. Both groups saw a significant decline in the AD/HD symptomatology, but the group that also received canine assisted therapy saw a more significant decline in symptom severity than that control group.

Schuck, SE et al. (February 19, 2015). Canine-assisted therapy for children with ADHD: preliminary findings from the positive assertive cooperative kids study. Journal of Attention Disorders. DOI: 10.1177/1087054713502080.

AD/HD + Anxiety

"Overall, our results indicate that children with ADHD + ANX (Anxiety, sic) do not appear to differ from children with ADHD in a systematic way on symptoms of ADHD and that children with ADHD + ANX do not appear to differ in a systematic way from children with pure anxiety. At the same time, we did find evidence that children with ADHD + ANX exhibited greater working memory deficits than children with ADHD…"

"…It appears that children with ADHD + ANX are a particularly impaired group of children in terms of cognitive function with additional deficits in working memory" (p. 3).

Jarrett, M.A. (August, 2013). Comorbidity of ADHD and Anxiety: From Basic to Applied Research. The ADHD Report, 21(5). 1-6.

The Relaxation Response

The Relaxation Response: Herbert Benson

- 1. Sit quietly in a comfortable chair.
- 2. Close your eyes.
- 3. Starting at your feet relax your muscles up to your face. Your thoughts will stop when you relax your tongue.
- 4. Monitor your breathing. Use a different word for inhales and exhales. Breath normally.
- 5.Practice 20 minutes a day. Occasionally open your eyes to check the time (Have a clock that is easily seen.).
- 6. This is not a competition. Maintain a passive attitude.
- 7. This is a skill and like with any skill practice makes perfect. Practice once or twice a day, but not within two hours of eating. The process of digestion interferes with the relaxation response.

Benson H. (2000). The Relaxation response: Updated and Expanded Edition (25th Anniversary Edition). New Your Avon.

Relaxation Tools

- Take a break
- Sit by self
- Talk to someone
- Stretch
- Deep breaths
- Exercise
- Sports
- "Creative Destruction"

  Taking out the trash

- Music
- Drawing
- Solitude Massage
- Reading
- Repetitive Action
- Sleep

Scapra, A., Reyes, N, and Attwood, T. (2013). Cognitive-Behavioral Therapy for Stress and Anger Management in Young Children with ASD. In A Scarpa, S.W. White, and T. Attwood (Eds.), CBT for Children and Adolescents with High-Functioning Autism Spectrum Disorders. New York, NY: Guilford.

Signs of Student Anxiety in The Classroom

- Worried about care givers
- Self-conscious, shy, will not participate in class
- Will not speak in some settings
- Constantly expressing worries, perfectionistic, overly concerned about grades
- Filled with unwanted distressing thoughts. Compulsive rituals such as hand washing, etc.
- Specific fears: Such as storms, rain, snakes, etc.
- Inattention caused by anxiety
- Many sick days and clingy
- Disruptive behavior – anxiety can cause aggression
- Do poorly in –Math, etc.
- When asked to answer questions the shrink away and cannot respond
- Frequent nurse trips
- Avoid people
- Forgetting homework

Ehmke, R. (April 13, 2015). Anxiety in The Classroom. New York, NY: Child Mind Institute. From website: http://www.childmind.org/en/posts/articles/2015-4-13-anxiety-classroom.

What to do With the Anxious Student

- These are serious concerns to the student
- Consult with School Counselor
- Be in regular contact with parents
- Reduce work expectations
- Watch for subject (math/test) anxiety
- Do not single them out in class:
  - i.e., read aloud, etc.
- Know Flight-or-Flight/Tend-and Befriend is in play
- Cued time-out
- Remind them of coping strategies
- Help with transitions and be consistent.

Author (No date). Tips for Teachers of Anxious Students. Burnaby, BC, Canada: AnxietyBC http://www.ocdsb.ca/com/Mental%20Health%20Docs/Tips%20for%20Teachers-%20Anxious%20Students.pdf.

School Based Anxiety Treatments

- Cool Kids Program: School Version
- BALTIMORE CHILD ANXIETY TREATMENT STUDY IN THE SCHOOLS
- COGNITIVE-BEHAVIORAL INTERVENTION FOR TRAUMA IN SCHOOLS
- SKILLS FOR ACADEMIC AND SOCIAL SUCCESS

- These are group based Cognitive Behavior Therapy (CBT) in schools.
- "Studies of school-based treatment programs for anxiety disorders in youth suggest promise for effectively delivering these evidence-based programs in schools".

Herzig-Anderson, K. et al. (July 21, 2012). School-Based Anxiety Treatments for Children and Adolescents. Child and Adolescent Psychiatric Clinics, 21(3), 655-688. DOI: 10.1016/j.chc.2012.05.006.

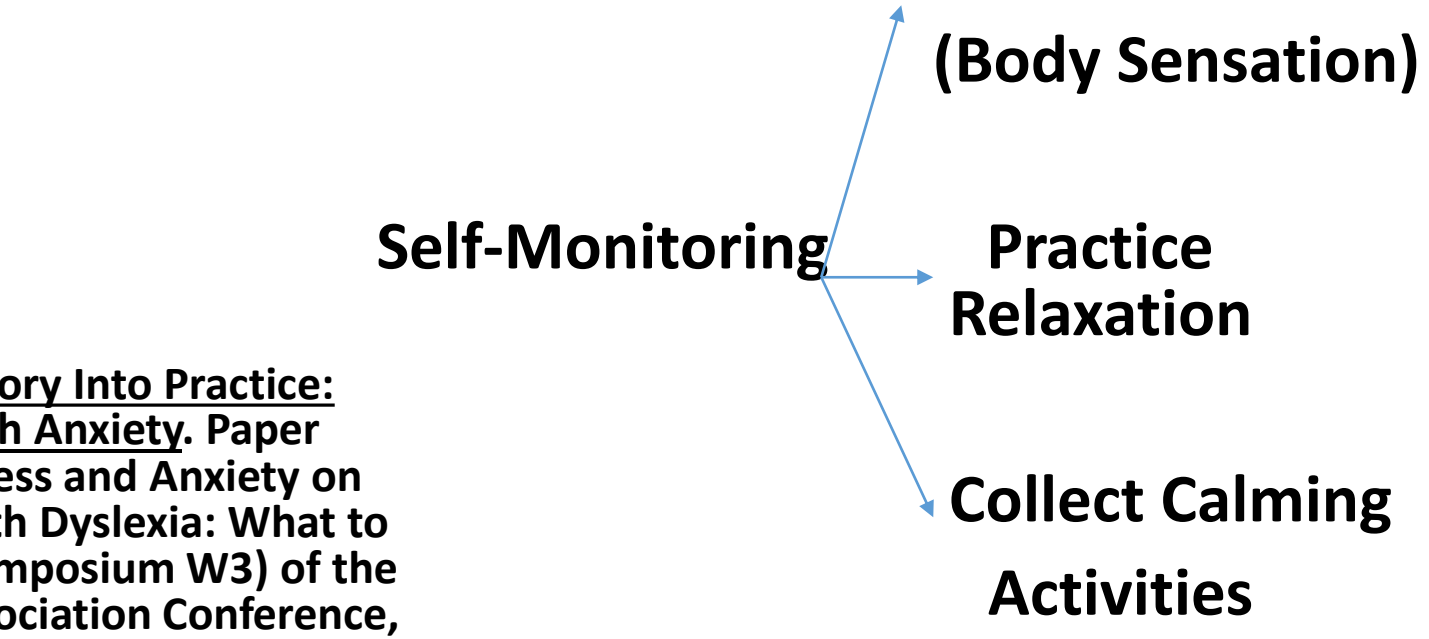
Working Memory & Anxiety

Problem Times for Anxious Students

- Unstructured Time
- Writing Tasks
- Transitions
- Unexpected Changes
- Social Demands

Minahan, J. (November 12, 2014). Theory Into Practice: Effective Intervention for Students with Anxiety. Paper Presented as part of The Impact of Stress and Anxiety on Cognition and Behaviorin Students with Dyslexia: What to Know and What to Do Symposium (Symposium W3) of the 65th Annual International Dyslexia Association Conference, San Diego, CA.

Teach



AD/HD & Diet

In-Born Errors of Metabolism

There may be some evidence that some people with AD/HD may have in-born errors of metabolism, which could cause a need for metabolic nutrients due to gastrointestinal inflammation and mitochondrial dysfunction. This may explain why through the years a small group of people with AD/HD appear to improve with special diets. Some with AD/HD may need to be treated with broad spectrum micronutrients.

Rucklidge, J.J. et al. (December 2016). The Role of Diet and Nutrient Supplementation in the Treatment of ADHD. The ADHD Report, 24(8), 1-8.

Diet & AD/HD

A recent review of double-blind placebo controlled studies of dietary treatment of AD/HD found poly-unsaturated fatty acid supplementation did not add to AD/HD treatment, there was not enough evidence to recommend artificial food color from diets, and food elimination diets may help children who do not respond to medication.

Pelsser, L.M. et al. (January 25, 2017). Diet and ADHD, Reviewing the Evidence: A Systematic Review of Meta-Analyses of Double-Blind Placebo-Controlled Trials Evaluating the Efficacy of Diet Interventions on the Behavior of Children with ADHD. PLOS One. DOI: 10.1371/journal.pone.0169277.

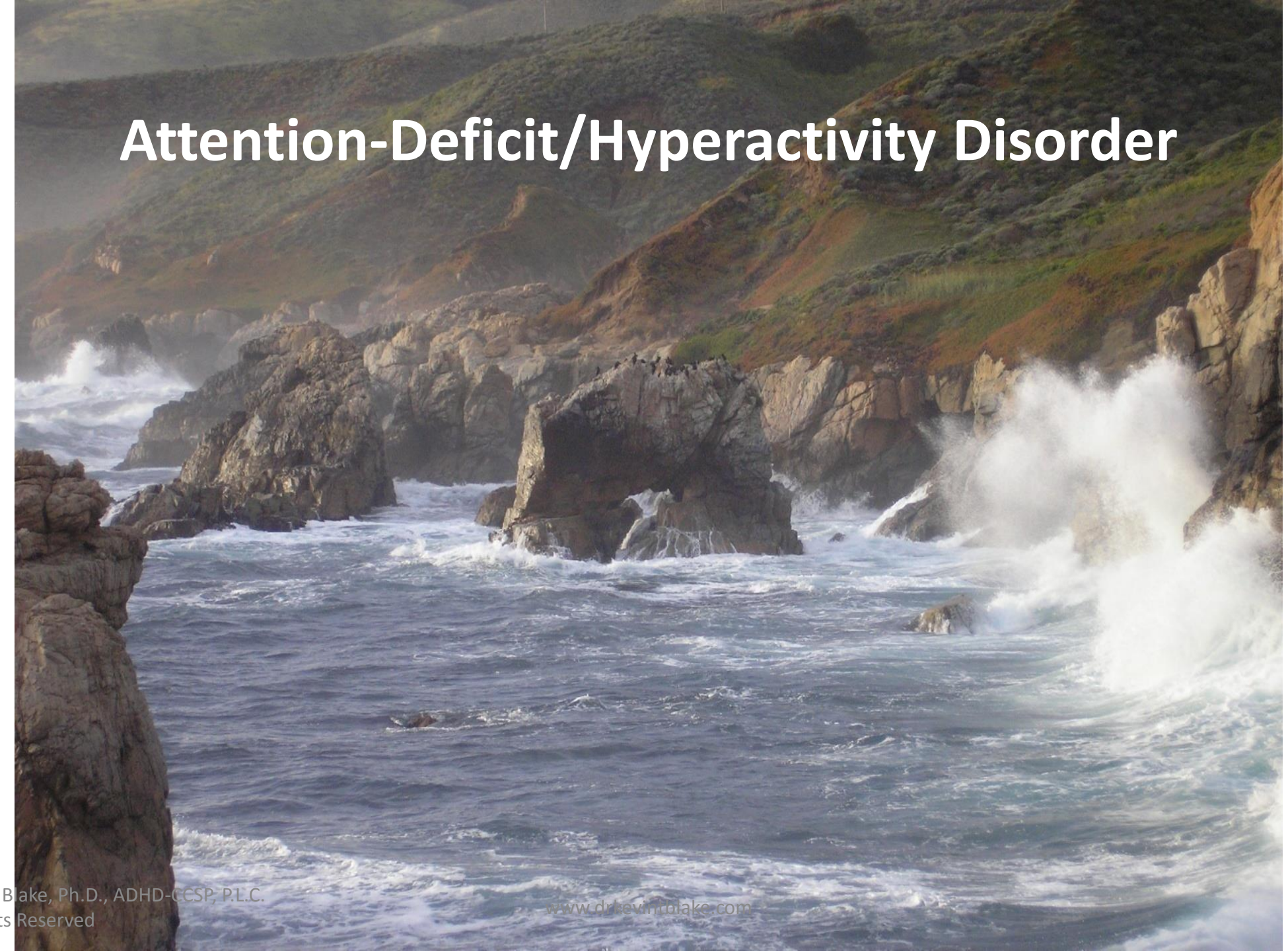
Recent meta-analysis found that 8% of children experience a significant improvement in symptomatology from elimination diets.

Only anecdotal reports of improvement with removal of dairy and casein.

Short-term consumption of sugar does nothing to AD/HD symptoms.

Good idea: Omega 3 fatty acids and broad spectrum micro-nutrients for brain development with physician's input.

Rucklidge, J.J. et al. (September 28, 2018). Do Diet and Nutrition Affect ADHD? Facts and Clinical Considerations. Psychiatric Times. From website: https://www.psychiatrictimes.com/special-reports/do-diet-and-nutrition-affect-adhd-facts-and-clinical-considerations/page/0/1.



ADHD is NOT New!

In 1775 Melchor Adam Weikart, of Germany described a syndrome very similar to AD/HD. He recommended horseback riding and exercise as treatment.

Barkley, R.A. (2012). Executive Functions: What They Are, How They Work, and Why They Evolved. New York, NY: Guilford.

Brain Areas Associated with AD/HD

Neuroimaging of AD/HD Findings

- Frontostriatal dysfunction
- Anterior cingulum
- Prefrontal cortex
- Orbital prefrontal cortex
- Superior parietal regions
- Caudate nucleus
- Thalamus
- Amygdala
- Cerebellum

Kasparek, T., Theiner, P., and Filova, A. (November, 2015). Neurobiology of ADHD From Childhood to Adulthood: Findings of Imaging Methods. Journal of Attention Disorders, 19(11), 931-943. DOI: 10.1177/1087054713505322.

AD/HD, Working Memory, & Reinforcement

- **When given standard intensity of reinforcement children with AD/HD have significantly more difficulty with central executive, short-term memory, and working memory performance than controls.**

- **High intensity reinforcement significantly improved working memory and short-term memory in AD/HD children, but not so much in controls. However the AD/HD children did not normalize.**

AD/HD, Working Memory, & Reinforcement

- **Motivational deficits negatively effect visual-spatial working memory and short-term memory in AD/HD children.**

Dovis, S. et al. (August, 2013). What Part of Working Memory is not Working in ADHD? Short Term Memory, the Central Executive and Effects of Reinforcement. Journal of Abnormal Child Psychology, 6, 901-917. From website: http://link.springer.com/article/10.1007%2Fs10802-013-9729-9.

- **There is a life long problem with working memory in those with AD/HD, however, the central executive difficulties abate somewhat.**

Alderson, R. et al. (May, 2013). Working memory deficits in adults with attention deficit/hyperactivity disorder (ADHD): An examination of central executive and storage/rehearsal processes. Journal of Abnormal Psychology, 122(2), May 2013, 532541. doi: 10.1037/a0031742.

The Dismal 5

AD/HD & DSM-5©

In DSM-5© there is one type of Attention-Deficit/Hyperactivity Disorder and it is Attention-Deficit/Hyperactivity Disorder, Combined Type. Since DSM-IV© was published in 1994, longitudinal studies have found Attention-Deficit/Hyperactivity Disorder/Impulsive Type is the early manifestation of Combined Type AD/HD

AD/HD & DSM-5©

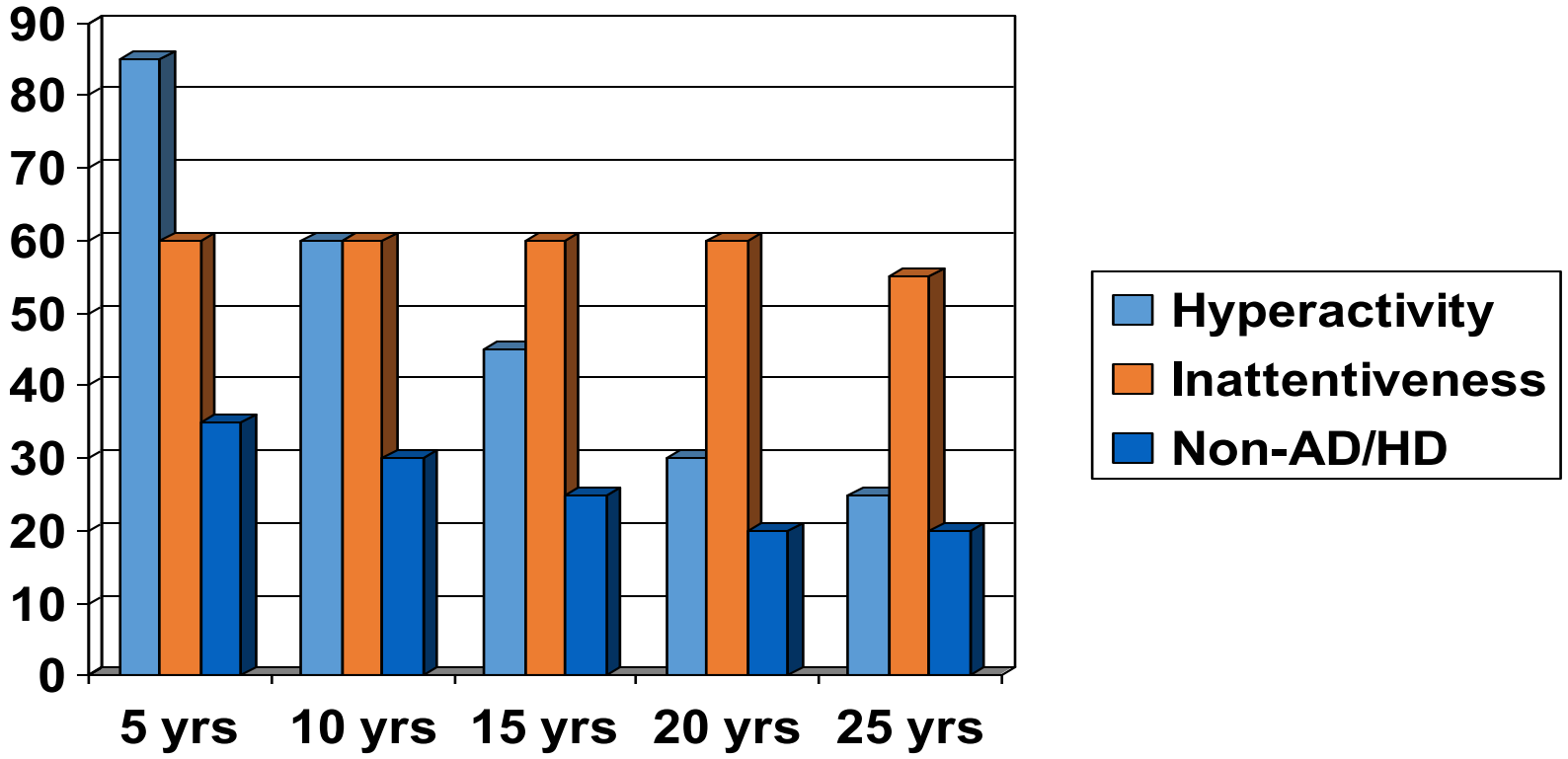
… in preschool and early grade school. As the child ages and his/her frontal lobe develops, they gain more control of their hyperactive motor movements and begin to appear as what was called (in DSM-IV© and DSM-IV, TR©) Combined Type. This process continues until their late 20's/early 30's when their frontal lobes are fully developed. By that time they appear to be the *Inattentive Type*…

AD/HD & DSM-5©

…when their current adult behavior is compared to their non-AD/HD peers. Remember, when you diagnose someone with AD/HD, you compare them to their non-AD/HD age peers.

Swanson, J., Hinshaw, S., Hechtman, L. and Barkley, R. (November 9, 2012). Research Symposium 1: Montreal Study; Milwaukee Study; Berkeley Girls ADHD Longitudinal Study (BGALS). Symposium presented at the 24th Annual CHADD International Conference, November 8-10, 2012, Burlingame, CA.

Longitudinal Studies of AD/HD



Barkley, R.A., Murphy, K.R. and Fischer, M. (2008). ADHD In Adults: What The Science Says. New York, NY: Guilford.

Weiss, G. and Hechtman, L. (1993). Hyperactive Children Grown Up. New York, NY: Guilford.

Does this mean 30% outgrow their AD/HD?

"We found that 36% of the Hyperactive group met these two criteria and would be considered to have recovered or to have outgrown their disorder—that is, placing within the normal range in both symptoms and impairment." (p. 69)

Barkley, R.A., Murphy, K.R. and Fischer, M. (2008). ADHD In Adults: What The Science Says. New York, NY: Guilford.

Recent research has shown:

- **20-30% of children with AD/HD retain the full syndrome as adults**
- **50% retain partial syndrome**
- **Those who fully remit are not different than people who were never AD/HD neurologically as adults; they were as children. Developmental delay…**
- **Those who do not remit retain Default Mode Network and myelination anomalies.**

Sudre, G. et al. (October 16, 2017). Multimodal mapping of the brain's connectivity and the adult outcome of attention deficit hyperactivity disorder. PNAS. DOI: 10.1073/pnas.1705229114.

Attention-Deficit/Hyperactivity Disorder, Inattentive Presentation (Restrictive)

Inattentive AD/HD?

What about Attention-Deficit/Hyperactivity Disorder, Inattentive Type? It is a separate and distinct disorder behaviorally, neuro-biologically and genetically from AD/HD. It is not included in the DSM-5. In research it may be referred to as AD/HD, Inattentive (Restrictive) Presentation, Sluggish Cognitive Tempo, Concentration Deficit Disorder and/or Crichton Syndrome.

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD–Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

- **Sluggish Cognitive Tempo case difficulties in Executive Function, but they are different from those seen in AD/HD.**

Goldstein, S. (November 9, 2017). Understanding and Evaluating Executive Functioning in ADHD Across the Life Span. Paper presented at the CHADD International Conference, Atlanta, GE, Pre-Conference Institutes, Session TA-01, November 9, 2017.

Inattentive AD/HD?

What about Attention-Deficit/Hyperactivity Disorder, Inattentive Type? It is a separate and distinct disorder behaviorally, neuro-biologically and genetically from AD/HD. It is not included in the DSM-5. In research it may be referred to as AD/HD, Inattentive (Restrictive) Presentation, Sluggish Cognitive Tempo, Concentration Deficit Disorder and/or Crichton Syndrome.

- **Sluggish Cognitive Tempo causes difficulties in Executive Function, but they are different from those seen in AD/HD.**

Author (May 3, 2012). DSM-5 Development, Attention Deficit/Hyperactivity Disorder, Rationale. Washington, DC: American Psychiatric Association; From website: http://www.dsm5.org/ProposedRevision/Pages/proposedrevision.aspx?rid=383#.

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD–Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

Goldstein, S. (November 9, 2017). Understanding and Evaluating Executive Functioning in ADHD Across the Life Span. Paper presented at the CHADD International Conference, Atlanta, GE, Pre-Conference Institutes, Session TA-01, November 9, 2017.

SCT Symptoms

- Daydreaming excessively
- Trouble staying alert or awake in boring situations
- Easily confused
- Spacey or *in a fog*; mind seems to be elsewhere
- Stares a lot
- Lethargic, more tired than others
- Underactive or have less energy than others
- Slow moving or sluggish
- Doesn't seem to understand or process information as quickly or accurately as others

SCT Symptoms (Continued)

- Apathetic or withdrawn; less engaged in activities
- Gets lost in thought
- Slow to complete tasks; needs more time than others
- Lacks initiative to complete work or effort fades quickly

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

Sluggish Cognitive Tempo

An American researcher reviewed 10 recent research articles on sluggish cognitive tempo that included 4 continents and individuals from age 4 to 64. This he said indicated it was a worldwide, lifespan issue. He said sluggish cognitive tempo is not AD/HD and can be distinguished from it. Sluggish cognitive tempo symptoms include internalizing, learning difficulties, and functional impairment. It may be related in some ways to being caused in part by tobacco exposure and thyroid problems.

Becker, S.P. (February 1, 2017). "For Some Reason I Find It Hard To Work Quickly: Introduction To The Special Issue On Sluggish Cognitive Tempo. Journal of Attention Disorders. DOI: 10.1177/1087054717692882

Becker, S.P. et al. (2018). Sluggish cognitive tempo in adults: Psychometric validation of the Adult Concentration Inventory. Psychological Assessment, 30(3), 296-310. DOI: http://dx.doi.org/10.1037/pas0000476.

Sluggish Cognitive Tempo and EF

Barkley (2018) indicated that Sluggish Cognitive Tempo (SCT) has been shown by what little research that has been done not to be a primary disorder of executive function. It may involve posterior brain areas that control attention shifting and orienting. More impaired than AD/HD in community activity, education, social situations, household organization and work. Slow mean reaction time and shy. More impaired in all life domains than non-disabled, but not, as a whole as disabled as those with AD/HD. Those with SCT tend to have lower education level and income than those with AD/HD as well as being unemployed and unmarried more. Treatment: Cognitive Behavioral Therapy?; Behavioral techniques; Social Skills Training

Barkley, R.A. (2018). Barkley Sluggish Cognitive Tempo Scale-Children and Adolescents (BSCTS-CA). New York, NY: Guilford.

What is Slow Processing Speed

The speed of completing a task (responding, reflecting, reacting) with reasonable accuracy.

- **Visual Processing: How quickly our eyes perceive information and relay it to the brain**
- **Auditory Processing: How quickly we hear a stimulus and react to it**
- **Motor Speed (when a task has a motor component)**

Effective processing speed requires:

- **Motivation**
- **Regulation of emotion**
- **Motor coordination**
- **Processing speed is sensitive to anxiety, stress and pressure**
- **Processing Speed is often weaker in individuals with ADHD**

Goldrich, C. (2017). Executive Functions and ADHD in Children. Seminar Presented by PESI, Inc., Eau Clare, WI.

SCT & AD/HD Slow Processors

- "Slow processors" don't get the same down time to replenish or enjoy life.
- Have a 30 second lag time before allowing hands to go up
- Provide a set of class notes/slides to allow them to focus more fully on your lesson in the moment
- Discretely arrange to call on "slow processors" in advance
- Reduce "Speed Drills"
- "Enough Homework (parent/child)

Goldrich, C. (2017). Executive Functions and ADHD in Children. Seminar Presented by PESI, Inc., Eau Clare, WI.

Remember – Homework is for practice, not initial learning.

--C. Wilson Anderson, Jr., MAT

“Neurobiological”

What does *Neurobiological* mean?

- **Stephen Pinker – The Blank Slate: The Modern Denial of Human Nature or better stated, the Lie of the Blank Slate.**

Pinker, S. (2002). The Blank Slate: The Modern Denial of Human Nature. New York, NY: Viking.

- **AD/HD is not caused by child rearing practices or environmental experience.**
- **65 to 75% of cases of Combined Type ADHD are caused by genetic anomalies.**
- **These people are said to have developmental ADHD.**

Barkley (2008)

- **80 to 85% of the variance of those with developmental ADHD is genetic.**
- **I.Q. is 60 to 65% genetic.**

Barkley, R.A. (2008). Advances in ADHD: Theory, Diagnosis and Management. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; www.jkseminars.com.

Barkley, R. A. (2002A-Tape 1). ADHD Symposium: Nature, Diagnosis and Assessment-Nature and Comorbidity and Developmental Course of ADHD. University of Massachusetts, January, Westborough, MA: Stonebridge Seminars.

Acquired ADHD

- 25 to 35% of cases of ADHD are acquired/caused by brain trauma
- 15 to 25% of cases of ADHD are acquired/caused by pre-natal and perinatal brain injuries: Maternal smoking/drinking, premature birth, etc.
- 3 to 7% of cases of ADHD are acquired/caused by post-natal brain injuries: head trauma, infections, tumors, lead poisoning, PANDAS, etc.
- Most of those with acquired ADHD are males.
- The male brain is more prone to injury and genetic difficulties than the female brain.

Barkley, R.A. (2008). Advances in ADHD: Theory, Diagnosis and Management. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; www.jkseminars.com.

What does Neurobiological mean?

1. Damage to different neural networks may cause AD/HD symptoms.
2. More commonly differences in Brain Development may cause them as well.
3. AD/HD, "…is a condition of the brain produced by genes."
4. ADHD has multiple causes

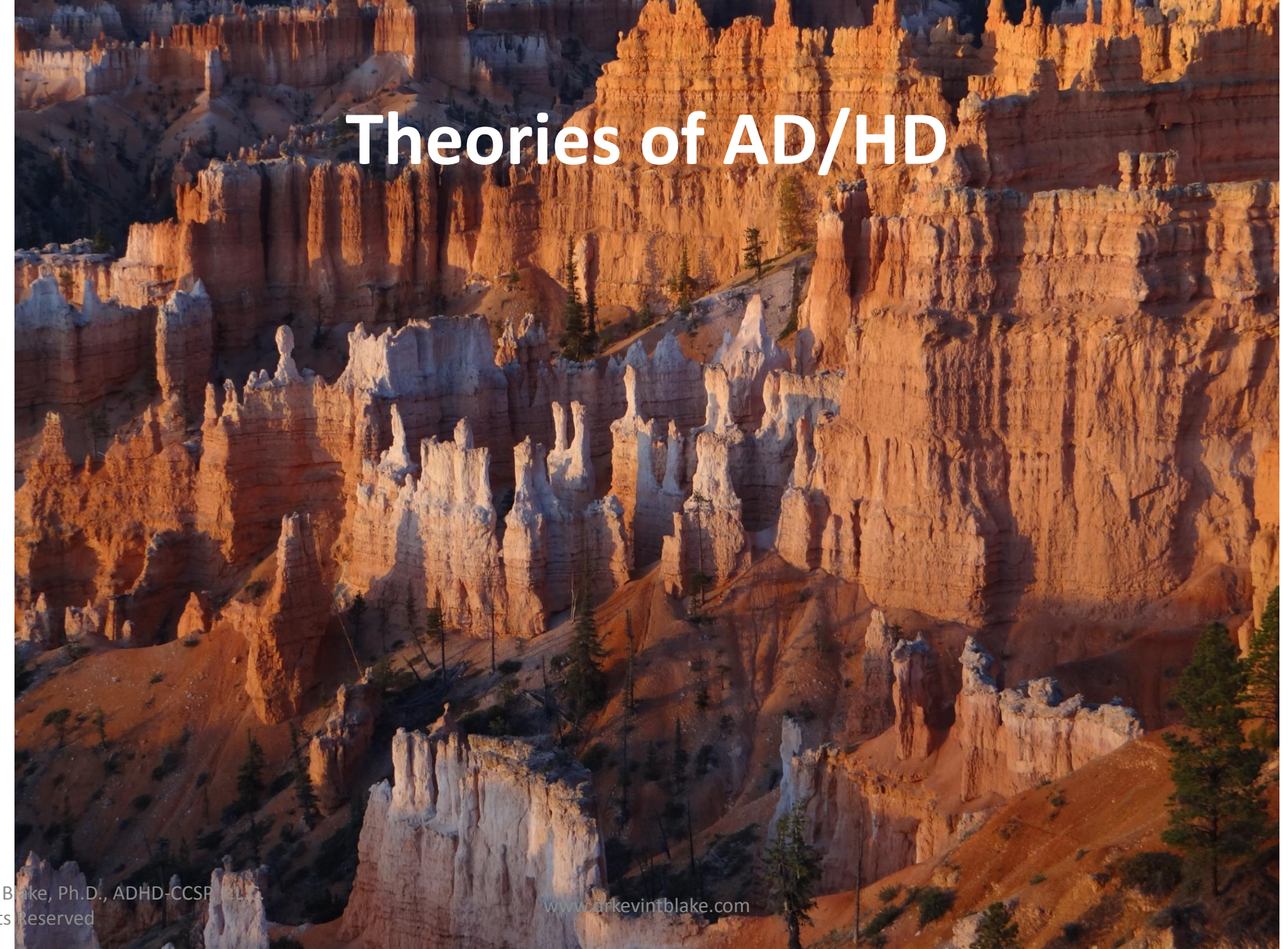
Swanson, J. et al. (April, 1998). Cognitive neuroscience of attention deficit hyperactivity disorder and hyperkinetic disorder. Current Opinion in Neurobiology, 8(2), 263-271.

Biederman, J. (October 27, 2006). Advances in the Neurobiology of AD/HD. Paper presented the at the 18 Annual CHADD International Conference, Chicago, IL.

Barkley, R.A. (2008). Advances in ADHD: Theory, Diagnosis and Management. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; www.jkseminars.com.

- Russell Barkley, Ph.D. (2008) said regarding Combined Type ADHD, "You cannot train out this disorder, period!" He went on to say the counselor is a *shepherd* of a disabled person.

Barkley, R.A. (2008). Advances in ADHD: Theory, Diagnosis and Management. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; www.jkseminars.com.



Theories of AD/HD

Summary of Barkley's Theory Of AD/HD, Combined Type

Step 1: *Response Delay*

Step 2: *Prolongation*

Step 3: *Rule Governed Behavior*

Step 4: *Dismemberment of the Environment*

Barkley, R.A. (1997). ADHD and the Nature of Self-Control. New York, NY: Guilford.

Barkley, R.A. (2008). Advances in ADHD: Theory, Diagnosis and Management. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; www.jkseminars.com

How Time Blindness "Undevelops"

- **How far into the future can they see?**
  - **2 year old: Now & Not Now**
  - **3 to 5 years: 5 to 20 minutes**
  - **First grade: 3 to 5 hours**
  - **Third grade: 8 to 12 hours**
  - **12 to 16 years: 2 to 3 days**
  - **17 to 23 years: 2 to 3 weeks**
  - **23 years on: 3 to 5 weeks**

How far into the Future can Children Anticipate?

- **We will need to help them "SEE" the future**
- **Gradual shift from needing help**
- **External Controls and Immediate Feedback to Internal Controls and Delayed Feedback**

Goldrich, C. (2017). Executive Functions and ADHD in Children. Seminar Presented by PESI, Inc., Eau Clare, WI.

Helping with The Internalization of Speech

- **Talk yourself out loud through decision making and planning.**
- **Have kids problem solve problems out loud to teach them metacognition**
- **Teach active listening: Look at face of speaker, verbal gestures, body language, paraphrasing, etc.**
- **Let kids say they have had enough.**

Goldrich, C. (2017). Executive Functions and ADHD in Children. Seminar Presented by PESI, Inc., Eau Clare, WI.

Developing Self-Esteem

"Arranging for periodic small rewards throughout the tasks for SR-(Self-Regulation) demanding settings. Engaging in self-affirming statements of self-efficacy prior to and during such tasks… Generating positive emotions."

Barkley, R.A. (2016) Managing ADHD In School: The Best Evidence-Based Methods for Teachers. Eau Clair, WI: PESI.

Summary of Tom Brown's Theory of AD/HD

- Organizing and activating for work
- Sustaining attention and concentration
- Sustaining energy and effort
- Managing affective interference
- Utilizing working memory and accessing recall
- Being able to predict the reaction of others due to their behavior (Forethought)

Brown, T.E. (1995). Differential Diagnosis of ADD Versus ADHD in adults. In K.G. Nadeau (Ed.), Attention-Deficit Disorder in Adults. New York, NY: Bruner/Mazel, 93-108.

Brown, T.E. (2013). A New Understanding of ADHD in Children and Adults: Executive Function Impairments. New York, NY: Routledge, 28.

“Managing Affective Interference”

Difficulties with regulation of emotions, motivation, and arousal. Children and adults with ADHD often have problems inhibiting their emotional reactions to events as well as do others of their age. It is not that the emotions they experience are inappropriate, but that those with ADHD are more likely to publicly manifest the emotions they experience than would someone else. They seem less able to “internalize” their feelings, to keep them to themselves, and even to moderate them when they do so as others might do. Consequently, they are likely to appear to others as less emotionally mature, more reactive with their feelings, and more hot-headed, quick-tempered, and easily frustrated by events. Coupled with this problem with emotion regulation is the difficulty they have in generating intrinsic motivation for tasks that have no immediate payoff or appeal to them.

Barkley, R.A. (No Date). Fact Sheet: Attention Deficit Hyperactivity Disorder (ADHD) Topics. From website: http://www.russellbarkley.org/factsheets/adhd-facts.pdf.

"Managing Affective Interference"

- ADHD children have difficulty:
  - Inhibiting their reaction or response
  - Modulating and monitoring their level of anger and expression of
  - Raw emotion
  - Being patient
  - Tolerating frustration
  - Being Flexible/Adaptable
  - Regulating their attention
  - Refocusing away from event or toward an event that might be better for them
  - Encourage a more positive, acceptable mood
  - Self - soothing or calming
  - Utilizing self-talk as a form of self-guidance
  - As a result they may appear highly sensitive and over-reactive

Goldrich, C. (2017). Executive Functions and ADHD in Children. Seminar Presented by PESI, Inc., Eau Clare, WI.

How to Help "Managing Affective Interference"

- AD/HD children often have difficulty performing a less desirable task when offered a reward.
  - Acknowledge negative feelings and offer encouragement
  - Help them visualize and imagine what will happen when the task is done

Goldrich, C. (2017). Executive Functions and ADHD in Children. Seminar Presented by PESI, Inc., Eau Clare, WI.

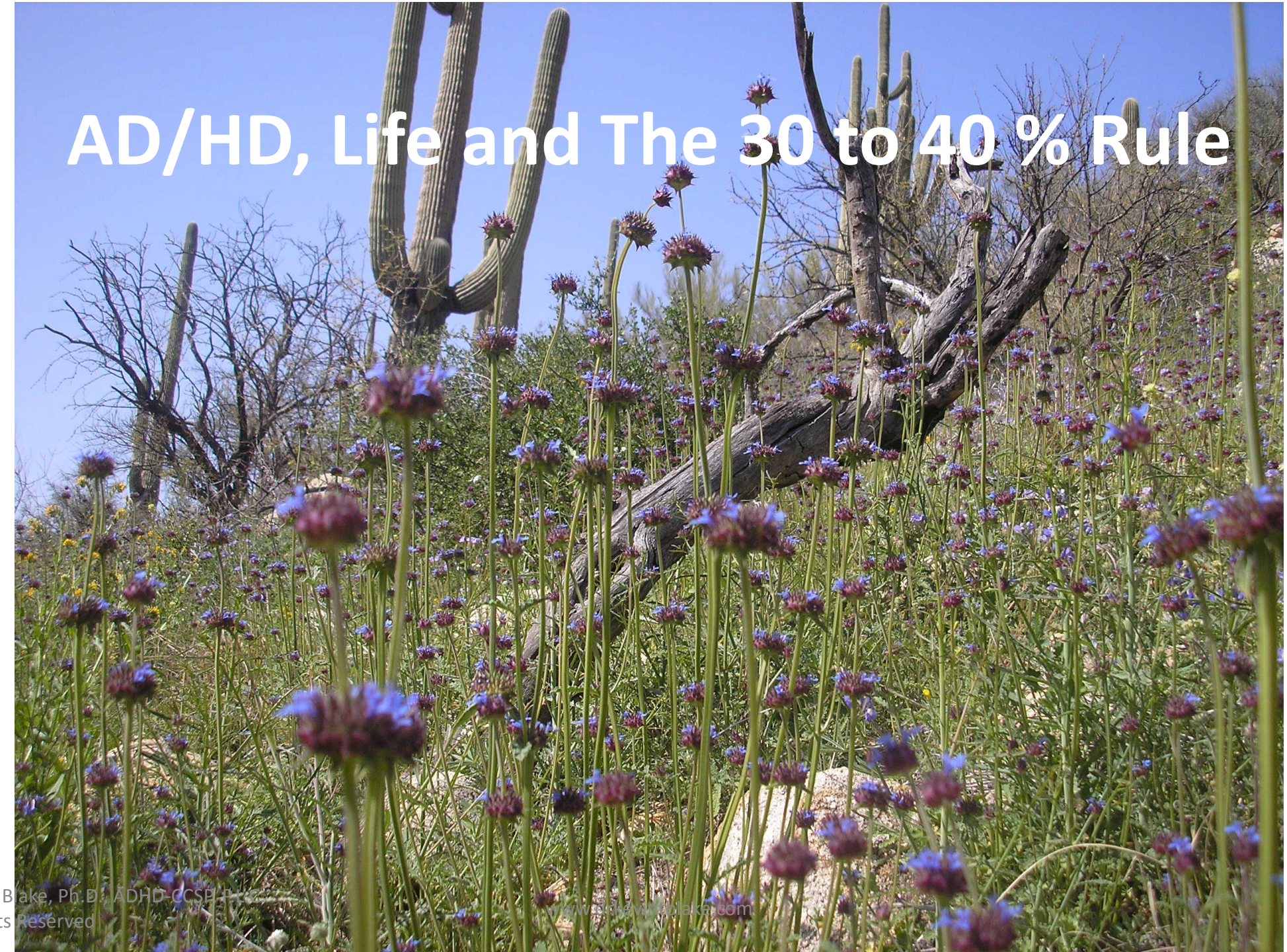
- Raise student's awareness of what impacts their own ability to stay calm, engaged, and focused
- Notice what seems to impact their behavior such as noise, visuals, pace, etc.
- Reduce frustrating distractors
- Exercise breaks

What is “Emotional Self-Regulation”?

- **A person's ability to understand and accept their emotional experience, manage their emotions, and respond with appropriate behavior for the moment.**
- **A.K.A.: “Managing Affective Interference”**

Goldrich, C. (2017). Executive Functions and ADHD in Children. Seminar Presented by PESI, Inc., Eau Clare, WI.

AD/HD, Life and The 30 to 40 % Rule



Barkley's 30%-40% Rule for Combined AD/HD

People with Combined Type AD/HD tend to be on average 30% - 40% less mature in controlling their hyperactivity, impulsivity, and inattentiveness than their non-disabled age peers.

--Barkley, R.A. (1998), (2008); Chang, Z. et al (2017).

Scientists conducted longitudinal MRIs of children between age 12 and 20 with "Attention Problems". They also measured their driving behaviors, symptom…

Barkley, R.A. (2006). Attention Deficit Hyperactivity Disorder, Third Edition. New York, NY, Guilford.

Barkley, R.A., Murphy, K.R. and Fischer, M. (2008). ADHD In Adults: What The Science Says. New York, NY: Guilford.

Vijayakumar, N. (December 19, 2016). Neurodevelopmental Trajectories Related to Attention Problems Predict Driving - Related Risk Behaviors. Journal of Attention Disorders. DOI: 10.1177/1087054716682336.

…impairment, and "risky behaviors". They found those most at risk of poor driving were those with the highest symptom impairment, and the least developed right orbital-frontal cortex.

--Vijayakumar, N. (December 19, 2016)

A population study of AD/HD adults in Taiwan indicated they have a 143% increased risk of having a serious injury than typical adults. If the AD/HD adult is administered methylphenidate that increase rate of injury is reduced to 22%.

Chien, W-C et al. (June 2017). The risk of injury in adults with attention-deficit hyperactivity disorder: A nationwide, matched-cohort, population-based study in Taiwan. Research in Developmental Disabilities, 65, 57-73.

Life Expectancy and AD/HD

Life Expectancy and AD/HD

- **People with AD/HD have a *significantly reduced life expectancy* due to an impulsive lack of concern for health related issues, exercise, diet, drugs, etc. if their AD/HD is untreated. On Average it is 9.6 to 12.7 years!**
- **It is useful to spend significantly more time with them emphasizing the importance of good health and developing ways to ensure they follow through with annual check-ups, etc.**

Barkley, R.A. (January 14, 2018). Life Expectancy Slashed in Worst Cases of AD/HD. Paper presented at the American Professional Society of ADHD and Related Disorders, January 12-14, 2018. Washington, DC.

Inserro, A. (January 14, 2018). Psychologist Barkley Says Life Expectancy Slashed in Worst Cases for Those With ADHD. American Journal of Managed Care. From website: https://www.ajmc.com/conferences/apsard-2018/psychologist-barkley-says-life-expectancy-slashed-in-worst-cases-for-those-with-adhd.

Chau, Y.C.Y. et al. (November 28, 2017). Oral Health of Children With Attention Deficit Hyperactivity Disorder: Systematic Review and Meta-Analysis. Journal of Attention Disorders. DOI: 10.1177/1087054717743331.

Life Expectancy and AD/HD

- Take the four biggest reducers of life-expectancy in the US:
  - Obesity
  - Smoking
  - Risk of diabetes
  - Exercise and Diet
- Untreated AD/HD lowers life-expectancy 2 1/2 times more than the combination of all four of the above combined!
- Why?: Little exercise, or sleep, poor nutrition, less education, more obesity, more smoking, alcohol, and drug use, as well as poor driving, poor dental hygiene, more STDs, more teen pregnancies, more antisocial behavior, more reactive aggression, etc.

Barkley, R.A. (December 10, 2018). ADHD Likely Reduces Estimated Life Expectancy by Young Adulthood. Summary of paper presented at the 2018 American Professional Society of ADHD and Related Disorders (APSAD) Conference, Saturday, January 13, 2018, Washington, DC. Summary can be found on the APSAD website: https://apsard.org/adhd-likely-reduces-estimated-life-expectancy-by-young-adulthood/.

Life Expectancy and AD/HD

A recent genomic-wide study of AD/HD found it had genetic markers with:

- **Obesity**
- **Diabetes**
- **Smoking**
- **Poor sleep**
- **High LDL cholesterol**
- **Earlier parenthood**
- **Rheumatoid arthritis**
- **Earlier menopause**
- **Lower intelligence**
- **Less education**
- **Earlier parental mortality (both mother and father)**

Demontis, D. et al. (November 26, 2018). Discovery of the first genome-wide significant risk loci for attention deficit/hyperactivity disorder. Nature Genetics. DOI: 10.1038/s41588-018-0269-7.

Life Expectancy and AD/HD

- This is a major public health issue:
- We can reduce the impact of all of the above factors. If you change them you can increase life expectancy.
- 30% of the variation in life expectancy is how impulsive one is about life decisions and life style.
- People with AD/HD's main symptom is impulsivity. That is hard to change.
  - But, treatment with medication, parental training, classroom management, and CBT in adults can change this.
- Medical professionals do not know this and need to be aware of this.
- Start with health and life style training as soon as child in diagnosed. This should be done at home and school.

Barkley, R.A. (December 10, 2018). ADHD Likely Reduces Estimated Life Expectancy by Young Adulthood. Summary of paper presented at the 2018 American Professional Society of ADHD and Related Disorders (APSAD) Conference, Saturday, January 13, 2018, Washington, DC. Summary can be found on the APSAD website: https://apsard.org/adhd-likely-reduces-estimated-life-expectancy-by-young-adulthood/.

Treatment of AD/HD

"ADHD is currently understood as a neurodevelopmental syndrome with symptoms that are highly heritable and neurobiological in origin. Pharmacotherapy stands alone as the single most efficacious treatment for ADHD for individuals of all ages. Medications, psychostimulants in particular are effective in reducing the core symptoms of inattention, hyperactivity and impulsivity." (p. 3)

Ramsay, R. (2010). Nonmedication Treatments for Adult ADHD. Washington, DC: American Psychological Association Press, p. 3.

1. **Diagnosis (Step 1: Get Evaluated)**
2. **Psychoeducation about AD/HD (Step 2: Change Your Mind Set)**
3. **Medication (Step 3: Change Your Brain)**
4. **Accommodation: (Change Your Life –Rules for success)**
5. **Modification**

Barkley, R.A. (2010). Taking Charge of Adult ADHD. New York, NY: Guilford.

Top Interventions for Children with AD/HD

- Knowledge of the true impact of the factors that impact learning and performing
- Point of performance interventions
- Powerful, immediate, and engaging feedback
- Multimodal presentations and multimode options for performing and producing work
- Strategic teaching principles including: previewing, setting explicit goals, partnering, and efforts to enhance metacognition

Goldrich, C. (2017). Executive Functions and ADHD in Children. Seminar Presented by PESI, Inc., Eau Clare, WI.

Cognitive Behavioral Therapy and AD/HD

ADULT AD/HD & TREATMENT

- **Cognitive Behavioral Therapy works with AD/HD adults because they have better developed frontal lobes than children. They still need medication, however.**
- **This means adults with AD/HD can get some good out of social skills training whereas AD/HD children typically do not.**

Barkley, R.A. (2006). Attention-Deficit Hyperactivity Disorder, A Handbook for Diagnosis and Treatment, Third Edition. New York, NY: Guilford.

Ramsay, R. (2010). Nonmedication Treatments for Adult ADHD. Washington, DC: American Psychological Association Press.

- **Recently it was found a combination of cognitive behavioral therapy (CBT) and dialectical behavioral therapy (DBT) was able to lower depression, anxiety and stress in adults with AD/HD over a 6 month period.**

Nasri, B. et al. (February 8, 2017). Group Treatment for Adults With ADHD Based on a Novel Combination of Cognitive and Dialectical Behavior Interventions: A Feasibility Study. Journal of Attention Disorders. DOI: 10.1177/1087054717690231.

Comorbidity

AD/HD and Comorbidity

- **Between 67 to 80% of children with AD/HD have a comorbid disorder.**
- **About 50% of those with AD/HD will have two comorbidities.**

Pliszka, S. (2016). Comorbid Psychiatric Disorders in Children with ADHD. In R.A. Barkley (Ed.), Attention-Deficit Hyperactivity Disorder, Fourth Edition. New York, NY: Guilford, 140-168.

Common Comorbidities

AD/HD & Oppositional Defiant Disorder and Conduct Disorder

- **45 to 84% of children with AD/HD will have comorbid oppositional defiant disorder**
- **15 to 56% of children with AD/HD will have comorbid conduct disorder.**

Pliszka, S. (2016). Comorbid Psychiatric Disorders in Children with ADHD. In R.A. Barkley (Ed.), Attention-Deficit Hyperactivity Disorder, Fourth Edition. New York, NY: Guilford, 140-168.

AD/HD, Specific Learning Disorder, and/or Developmental Coordination Disorder

Barkley stated:

- **15% to 30% have Reading Disorder**
- **26% have Spelling Problems**
- **10% to 60% have Mathematics Disorder**
- **Developmental Coordination Disorder-Dysgraphia 60%**

Barkley, R. A. (2002A - Tape 1). ADHD Symposium: Nature, Diagnosis and Assessment - Nature and Comorbidity and Developmental Course of ADHD. University of Massachusetts, January, Westborough, MA: Stonebridge Seminars.

Barkley, R.A. (February 22, 2013). ADHD in Children: Diagnosis and Treatment. Poway, CA: ContinuingEdCourse.net. From website: http://www.continuingedcourses.net/active/courses/course004.php.

An anomaly in the left frontal gyrus, which is connected to atypical hippocampal, parahippocampal, and prefrontal function when compared to dyslexics and controls when processing low frequency words. It appears those with Specific Learning Disorder with Impairment in Reading Comprehension are significantly impaired in lexical-semantic representations during the processing and recognition of low frequency words when compared to dyslexics and controls.

Cutting,L.E. et al. (April 23, 2013). Not All Reading Disabilities Are Dyslexia: Distinct Neurobiology Of Specific Comprehension Deficits. Brain Connectivity. DOI: 10.1089/brain.2012.0116.

Treatment of Specific Learning Disorder with Impairment in Reading Comprehension

1) Stimulant Medication
2) SQ4R
3) Bell, N. (1991). Visualizing and Verbalizing for Language Comprehension and Thinking. San Luis Obispo, CA: Grander Educational Publishing.
4) Work with a Speech Language Pathologist

- Symptoms: Not being able to read and visualize what they read at the same time, hence no reading comprehension.
  - Not a problem with: Phonological Processing, Rapid Automatized Naming (RAN), or Orthographic Processing. Not Dyslexia!

For Details go to:

Blake, K. (May, 2013). Two Common Reading Problems Experienced By Many AD/HD Adults, 2013 Edition. www.drkevintblake.com.

ASD & AD/HD

- 26% of Children with PDD-NOS, or ASD have comorbid Combined Type AD/HD
- 33% of Children with PDD-NOS, or ASD have comorbid Inattentive AD/HD
- 59% of Children with PDD-NOS, or ASD have some type of AD/HD

Sam Goldstein and Jack A. Naglieri (2011). Neurocognitive and Behavioral Characteristics of Children with ADHD and Autism: New Data and New Strategies. The ADHD Report: Vol. 19, No. 4, pp. 10-12. https://doi.org/10.1521/adhd.2011.19.4.10.

A population study of the co-occurrence of AD/HD and autism in adults was conducted by scientists from Great Britton. They found the higher the inattention scores the adults reported the more social and communication difficulties they had. From this they concluded there is somewhat of a common etiology in AD/HD and autism.

Panagiotidi, M., et al. (August 11, 2017). Co-Occurrence of ASD and ADHD Traits in an Adult Population. Journal of Attention Disorders. DOI: 10.1177/1087054717720720.

AD/HD & Speech Disorders

"A higher prevalence of speech and language disorders has also been documented in many studies of ADHD children, typically ranging from 30% to 64% of the samples... The converse is also true; children with speech and language disorders have a higher than expected prevalence of ADHD (approximately 30% to 58%), among other psychiatric disorders..."

Barkley, R.A. (January 25, 2013). ADHD: Nature, Course, Outcomes, and Comorbidity. CotinuingEdCourses.Net. From website: http://www.continuingedcourses.net/active/courses/course003.php.

AD/HD and Speech and Language Disorders

- **Brown (2013) indicated 11.8% of those with AD/HD have speech and language disorder compared to 2.5% of controls.**

Brown, T.E. (2013). A New Understanding of ADHD In Children and Adults: Executive Function Impairment. New York, NY: Routledge, p. 131.

- **10% to 54% have Expressive Language Disorders (60% of them have Pragmatic Deficits)**

Barkley, R.A. (2002). ADHD and Oppositional Defiant Children. Seminar Presented February 19-20, Phoenix, AZ, The Institute for Continuing Education, Fairhope, AL, from handout, pp. 9.

- **Barkley stated AD/HD individuals have problems with Demand Speech.**

Barkley, R.A. (1998). Attention Deficit Hyperactivity Disorder, Second Edition. New York, NY: Guilford.

AD/HD and Developmental Coordination Disorder

- **Barkley stated 50%+ of those with ADHD meet criteria for DCD.**
- **They have Poor Physical Fitness**
- **They are Accident Prone (Especially those with ODD)**

Barkley, R.A. (2002). ADHD and Oppositional Defiant Children. Seminar Presented February 19-20, Phoenix, AZ, The Institute for Continuing Education, Fairhope, AL, from handout, pp. 9.

"The vast majority of the available research, therefore, supports the existence of deficits in motor control, particularly when motor sequences must be performed, in those with ADHD."

Barkley, R.A. (January 25, 2013). ADHD: Nature, Course, Outcomes, and Comorbidity. CotinuingEdCourses.Net. From website: http://www.continuingedcourses.net/active/courses/course003.php.

Tactile Defensiveness

"Particular parts of the body appear to be more sensitive, namely the scalp, upper arm and palms…The child may hate handling certain textures, such as finger paints or playdough. There can also be reluctance to wear a variety of clothing…" (p. 134).

Attwood, T. (1998). Asperger Syndrome: A Guide for Parents and Professionals. Philadelphia, P.A.: Jessica Kingsley.

"These data suggest that children with ADHD show specific tactile impairments." (p. 2575)

- **Worse reaction times to tactile tasks and temporal order problems tactile tasks.**
- **Probably due to worse attention and higher touch detection thresholds.**

Puts, N.A.J. et al. (2017). Altered tactile sensitivity in children with attention-deficit hyperactivity disorder. Journal of Neurophysiology. DOI: 10.1152/jn.00087.2017.

Tactile Defensiveness

"Children who suffer from touch deprivation need more body contact. Methods of sensory motor therapy used by Occupational therapists for tactile defensiveness include touching and rubbing the skin surfaces, using lotions, and brushing skin surfaces" (p. 325).

Lerner, J. (1997). Learning Disabilities: Theories, Diagnosis and Teaching Strategies, 7th Edition. Boston, MA: Houghton Mofflin.

- **Helpful Profession:**
  - **American Occupational Therapy Association: www.aota.org**
- **Helpful book:**
  - **Myles, B.M., Tapscott-Cook, k., Miller, N.E., Rinner, L., and Robbins, L. (2000). Asperger Syndrome and Sensory Issues: Practical Solutions for Making Sense of the World. Shawnee Mission, KS: Autism Asperger Publishing.**

How to Get an AD/HD Child's Attention

- Lightly touch the child on the forearm arm/shoulder.
- Teach them to look into your eyes (cultural sensitivity)
- Briefly state what you need the to do/know.
- Have them restate what you said.

Barkley, R.A. (2016) Managing ADHD In School: The Best Evidence-Based Methods for Teachers. Eau Clair, WI: PESI.

Goldrich, C. (2017). Executive Functions and ADHD in Children. Seminar Presented by PESI, Inc., Eau Clare, WI.

- If the child has tactile defensiveness remember:

"Particular parts of the body appear to be more sensitive, namely the scalp, upper arm and palms…The child may hate handling certain textures, such as finger paints or playdough. There can also be reluctance to wear a variety of clothing…" (p. 134).

Attwood, T. (1998). Asperger Syndrome: A Guide for Parents and Professionals. Philadelphia, P.A.: Jessica Kingsley.

AD/HD & Mood/Anxiety Disorders

AD/HD and Mood Disorders

Brown indicated that those with AD/HD have a 38.3% chance of having a mood disorder during their lifetime which is 5 times more likely than in those without AD/HD.

Brown, T.E. (2013). A New Understanding of ADHD in Children and Adults: Executive Function Impairments. New York, NY: Routledge.

Spanish professors found that the level of emotional lability experienced by adults with AD/HD during childhood predicted the level of adult impairment caused by their AD/HD. They suggested that emotional lability should be assessed when assessing for AD/HD.

Gisbert, L., et al. (July 31, 2017). The Impact of Emotional Lability Symptoms During Childhood in Adults With ADHD. Journal of Attention Disorders. DOI: 10.1177/1087054717719534.

Major Depression and AD/HD

- **Only the AD/HD children with Major Depression have problems with Low Self-Esteem**
- **Most AD/HD Children have inflated Self-Esteem.**
- **Adults with AD/HD may become demoralized.**

Barkley, R. A. (2002A - Tape 1). ADHD Symposium: Nature, Diagnosis and Assessment - Nature and Comorbidity and Developmental Course of ADHD. University of Massachusetts, January, Westborough, MA: Stonebridge Seminars.

Anxiety Disorders and AD/HD

Brown wrote that those with ADHD have a 47.1 percent chance of having an anxiety disorder during their lifetimes. This is 3 times more than the general population.

Brown, T.E. (2013). A New Understanding of ADHD in Children and Adults: Executive Function Impairments. New York, NY: Routledge.

- **Barkley reported 24% to 43% of AD/HD adults have "GAD".**
- **Barkley reported 50% of AD/HD adults will have trouble with GAD in their lifetimes.**

Barkley, R.A. (1998). AD/HD in Children, Adolescents, and Adults: Diagnosis, Assessment and Treatment. New England Educational Institute, Cape Cod Symposium, August, Pittsfield, MA.

- **10% of adults with AD/HD meet criteria for PTSD compared to 1.6% of non-AD/HD adults.**

Antsthel, K.M. et al. (March, 2013). Posttraumatic stress disorder in adult attention-deficit/hyperactivity disorder: clinical features and familial transmission. Journal of Clinical Psychiatry. DOI: 10.4088/JCP.12m07698.

AD/HD Coaching

"Coaching is a supportive, pragmatic, and collaborative process in which the coach and adult with ADHD work together via daily 10-to-15 minute telephone conversations to identify goals and strategies to meet those goals." (p. 590)

Murphy, K.D. (1998). Psychological Counseling of Adults with ADHD. In R.A. Barkley (Ed.), Attention-Deficit Hyperactivity Disorder, Second Edition. New York, NY: Guilford.

WHAT DOES AN AD/HD COACH DO?

"1. Help people set better goals and then reach goals.

2. Ask their clients to do more than they would have on their own.

3. Focus their clients better to more quickly produce results.

4. Provide the tools, support and structure to accomplish more.

AD/HD Coaching

AD/HD COACHING (CONTINUED)

5. Help clients re-build self-esteem and recover from a lifetime of doubt.

* **Through shared understanding of the implications of the client's ADD issues and the development of strategies and systems to get things done despite ADD challenges.**
* **Through understanding of the client's best learning styles, dominant and preferred modalities and how to use these to their advantage.**
* **Through the implementation of a structure and gentle reminders of the client's shared goals and objectives.**

- **Need skills and abilities goodness-of-fit!**

Murphy, K.D. (1998). Psychological Counseling of Adults with ADHD. In R.A. Barkley (Ed.), Attention-Deficit Hyperactivity Disorder, Second Edition. New York, NY: Guilford.

- **Psychotherapists/vocational counselors should consider being client's advocate with their boss/employer when appropriate.**

Everett, A.A., and Volgy-Everett, S. (1999). Therapeutic Interventions for Adults with ADHD and their Families, Family Therapy for ADHD: Treating Children, Adolescents, and Adults. New York, NY: Guilford, pp. 221-264

"Conclusion: ADHD coaching helped participants enhance their self-control as they responded to the multifaceted demands of undergraduate life."

Parker, D.R. et al (December 15, 2011). Self-control in postsecondary settings: students' perceptions of ADHD college coaching. Journal of Attention Disorders. DOI: 10.1177/1087054711427561.

Professional Organizers and AD/HD

"Generally speaking a professional organizer differs from a coach by providing on-site, hands-on help with organizing. Typically, the primary focus is on helping a client to organize her environment, rather than teaching her how to remain organized." (p. 256)

Nadeau, K. (2002). Neurocognitive Psychotherapy for Women with AD/HD. In P.O. Quinn, and K.G. Nadeau (Eds.), Gender Issues and AD/HD: Research, Diagnosis and Treatment. Silver Spring, MD: Advantage,

Exercise & ADHD

Exercise and AD/HD

- After 20 minutes of exercise AD/HD children:
  - Greater response accuracy
  - Better regulation
  - Seated longer
  - Duration of reading
  - Better reading and math
  - Better inhibitory control
  - Sign. Bigger than controls

Pontifex, M.B. et al. (March, 2013). Exercise Improves Behavioral, Neurocognitive, and Scholastic Performance in Children with Attention-Deficit/Hyperactivity Disorder. Journal of Pediatrics, 162(3), 543-551.

- Have children with ADHD take their toughest classes in the morning after aerobic exercise.
- After the more difficult class take fun/easier class.
- If they have a choice to cram 20 extra minutes for an exam or exercise 20 minutes, it would be better to exercise.

LaCount, P. et al. (August, 2018). Physical Exercise Interventions for Emerging Adults with Attention-Deficit/Hyperactivity Disorder (ADHD). ADHD Report, 26(5), 1-11.

Mindfulness Training and AD/HD

Mindfulness Training and AD/HD

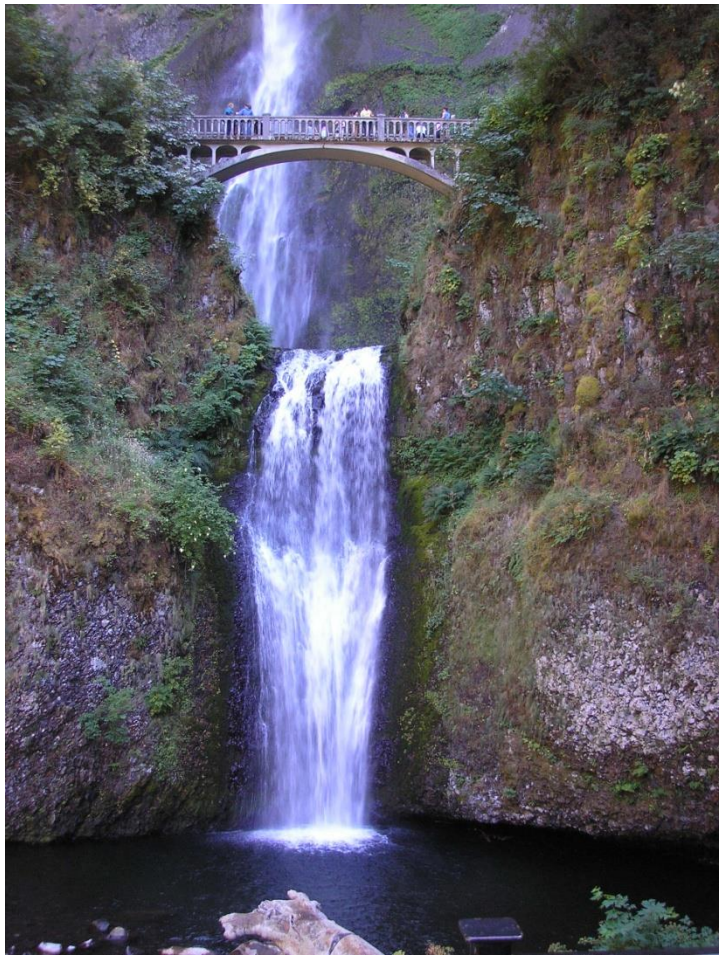
Dutch researchers found 24 adult with AD/HD that were taught mindfulness reported better EF, a reduction in AD/HD symptoms, better self-respect and mental health. These were seen as initial results and they suggested more research to demonstrate efficacy.

Jansen, L. et al. (February 28, 2018). Mindfulness-based cognitive therapy v. treatment as usual in adults with ADHD: a multicentre, single-blind, randomised controlled trial. Psychological Medicine. DOI: 10.1017/S0033291718000429.

Chinese scientists compared a group of college students with AD/HD that received a treatment of mindfulness and cognitive behavioral therapy to a wait list control group of students with AD/HD. The treatment group showed more of a normalization in response time and made fewer impulsive errors. They also had better sustained attention.

Gu Y. et al. (December 1, 2016). A Randomized Controlled Trial of Mindfulness-Based Cognitive Therapy for College Students With ADHD. Journal of Attention Disorders. DOI: 10.1177/1087054716686183.

Classroom Management For AD/HD Children



Learning Style & Teaching

"No teaching method suits all students, and adapting education to individual needs means not only being quick to catch and help children with difficulties but providing those who are fully capable and who need extra stimulation with the resources and tools they need to develop to their full potential." (Torkel Klingberg, M.D., Ph.D., 2013)

- **The U.S. Department of Education, through the Institute of Education Sciences has created the *What Works Clearinghouse* to provide the latest research to classroom teachers with what works with all kind of kids in the classroom.**
- **http://ies.ed.gov/ncee/wwc/**

Klingberg, T. (2013). The Learning Brain: Memory and Brain Development In Children. New York, NY: Oxford University Press.

Teacher Behavior & AD/HD

“The major implications of this research is that the behavior of the students with BD (Behavior Disorders, sic.) in general education settings is more dependent on setting factors and teacher practices than is the behavior of students without BD” (p. 236).

Bevda, S.D., Zentall, S.S. and Ferko, D.J.K (2002). The Relationship Between Teacher Practices and The Task-Appropriate and Social Behavior of Students With Behavior Disorders. Behavior Disorders, 27, 236-255. From website: http://www.edst.purdue.edu/zentall/resume/research.htm#chap.

The AD/HD "Ninja"

- Assign someone in the school to be an AD/HD consultant who has training in how to adapt the curriculum of the mainstream classroom for children with and without AD/HD to work with mainstream teachers with AD/HD children.
  - This could be the school counselor, master teacher, school psychologist, a special education teacher, etc.

Barkley, R.A. (2016) Managing ADHD In School: The Best Evidence-Based Methods for Teachers. Eau Clair, WI: PESI.

Executive Function & AD/HD

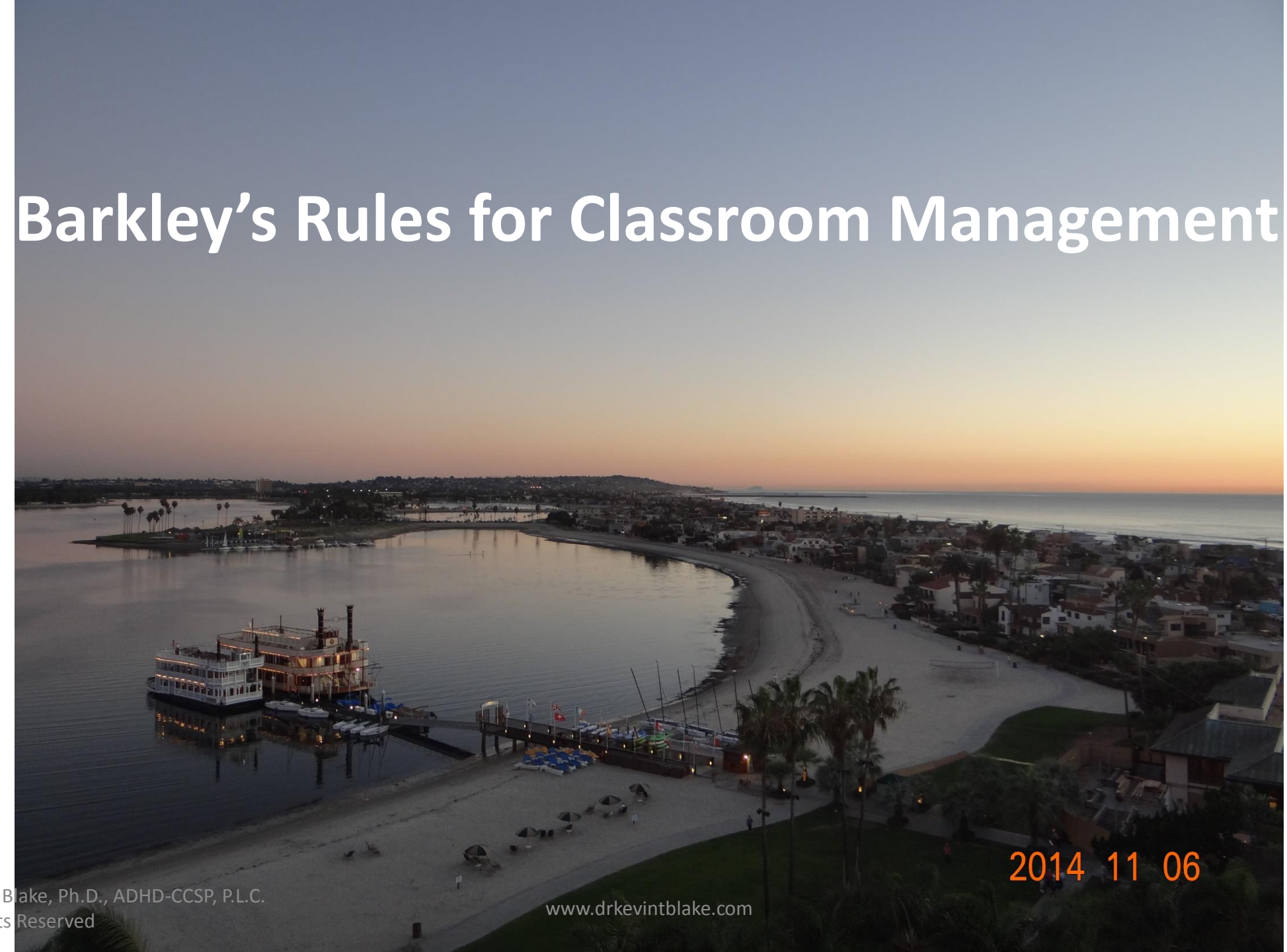
"AD/HD kids are not 'clueless'. They're 'cueless'."

Goldstein, S. (November 20, 1998).Pathways to Success: Evening the Odds in the Treatment of Attention-Deficit Hyperactivity Disorder. Seminar presented in Tucson, AZ.

Interventions with those with AD/HD are do not because they are ignorant of skills, but they are used to prompt them to use the skills they already know, guide performance and motivate them. They are not as sensitive to natural environmental cues hence, they need artificial prompts.

Barkley, R.A. (February 22, 2013). ADHD IN Children: Diagnosis and Treatment. Poway, CA: ContinuingEdCourse.net. From website: http://www.continuingedcourses.net/active/courses/course004.php.

Barkley's Rules for Classroom Management



Barkley's Rules for Classroom Management

1. **"Rules and instruction provided to children with ADHD must be clear, brief and often delivered through more visible modes of presentation and external modes of presentation than required for the management of children without ADHD." (p. 7)**
2. **"Consequences used to manage the behavior of ADHD children must be delivered swiftly and more immediately than is needed for children without ADHD." (p. 8)**

Barkley's Rules for Classroom Management

3. "Consequences must be delivered more frequently, not just more immediately, to children with ADHD in view of their motivational deficits." (p. 8)

--Barkley (2008)

Side Bar:

"ADHD children are less sensitive to social praise and reprimands, so the consequences for good or bad behavior must be more powerful than those needed to manage the behavior of non-ADHD children." (p. 223)

Piffner, J.J. (1995). Enhancing Education at School and at Home: Methods from Kindergarten Through Grade 12. In R.A. Barkley (Ed.), Taking Charge of ADHD: The Complete Authoritative Guide for Parents. New York, NY: Guilford, pp. 222-239.

Barkley's Rules for Classroom Management

4. "The type of consequences used with children with ADHD must often be of a higher magnitude, or more powerful, than that needed to manage the behavior of other children." (p. 8)
5. "An appropriate and often richer degree of incentives must be provided within a setting or task to reinforce appropriate behavior before punishment can be implemented." (p. 8)

Side Bar

“Rewards and incentives must be put in place before punishment is used, or your child will come to see school as a place where he or she is more likely to be punished than rewarded. Make sure the teacher waits a week or two after setting up a reward system at school before starting to use punishment. Then make sure the teacher gives two to three rewards for each punishment.” (p. 223)

Piffner, J.J. (1995). Enhancing Education at School and at Home: Methods from Kindergarten Through Grade 12. In R.A. Barkley (Ed.), Taking Charge of ADHD: The Complete Authoritative Guide for Parents. New York, NY: Guilford, pp. 222-239.

Side Bar: "Praise with Impact

- **Notice your student doing and/or feeling something positive (catch them being good)**
- **Name what you have noticed and the Value in what you see.**
- **Nurture your student with warmth – appreciate them in the moment:**

(Goldrich, C. (2017). Executive Functions and ADHD in Children. Seminar Presented by PESI, Inc., Eau Clare, WI.)

"Jarod, I see you are really working at that math problem. I notice you have tried a few times without quitting. That shows me you don't give up easily - good for you!"

****

"Sara, I think you are really trying, but I think maybe the strategies you are using or the strategies I am teaching aren't working for you."

Barkley's Rules for Classroom Management

6. "Those reinforcers or particular rewards that are employed must be changed or rotated more frequently for ADHD children than for those without ADHD, given the penchant of the former for more rapid habituation or satiation to response consequences, apparently rewards in particular." (p. 8)

--Barkley 2008

Side Bar

- **"ADHD Children become bored with particular rewards faster than other children, and teacher who fail to recognize that fact often give up on the program too soon, believing it has stopped working." (p. 223)**

Piffner, J.J. (1995). Enhancing Education at School and at Home: Methods from Kindergarten Through Grade 12. In R.A. Barkley (Ed.), Taking Charge of ADHD: The Complete Authoritative Guide for Parents. New York, NY: Guilford, pp. 222-239.

- **The 30 to 40% rule also applies to how long rewards and punishments work with AD/HD kids.**

Barkley's Rules for Classroom Management

7. "Anticipation is the key with ADHD children." (p. 8)
8. "Children with ADHD must be held more publicly accountable for their behavior and goal attainment than other children." (p. 8)
9. "Behavioral interventions, while successful, only work while they are being implemented and, even then, require continued monitoring and modification over time for maximal effectiveness." (p. 8)

Barkley, R. A. (2008). Classroom Accommodations for Children with ADHD. The ADHD Report, 16(4), 7-10.

Why Behavior Modification with AD/HD Children

- **Behavior modification works with children with AD/HD:**
  - **They have great difficulty maintaining internal motivation, very weak beginning task, and working toward a goal.**
  - **External rewards must be used in the context of goals to scaffold behaviors and sustained goal directed behavior.**
- **This needs to be sustained at the point of performance for long periods of time.**

Barkley, R.A. (2016) Managing ADHD In School: The Best Evidence-Based Methods for Teachers. Eau Clair, WI: PESI.

Barkley's 80%- 20% Rule

- **Using Barkley's theory of AD/HD and his theory of executive functioning he concludes that AD/HD, "…has disconnected the knowing from the doing brain."**
- **Thus, he says 80% of the effort to manage a person's behavior with AD/HD must be done with environmental modifications (token economies, timers, etc.) The remaining 20% of the management effort goes into training of skills.**

Barkley, R.A. (2011). Executive Functioning in Daily Life Activities: Theory, Integration and Clinical Implications. New York, NY: Guilford.

Barkley, R.A. (November 12, 2010). The Nature of Executive Functioning in ADHD: Implications for Assessment and Management. Paper Presented at the 22nd Annual CHADD International Conference, Atlanta, GA.

What Can I Do In The Classroom with AD/HD Kids?

- Immediate Intense Rewards & Change Them Often
- Provide Feedback, "at the point of performance!"
- Provide External Memory Prompts: Smart Phone, Watchminder-2 Watch, Motivators, Recorders: https://www.watchminder.com/ https://habitchange.com/index.php www.addwarehouse.com
- Use a token economy with the student
- Provide Increased Supervision:
  - 30% to 40% Rule
  - Assign a case manager
  - Use Daily Report Cards
- Directly Teach:
  - Problem Solving, Time Management, Organizational Skills, Anger Management, Conflict resolution, Decision Making Skills

Author (2006). CHADD Educator's Manual. Landover, MD: CHADD.

What Can I Do In The Classroom with AD/HD Kids?

- Eliminate Criticism and Blame
- Give "I" Messages
- Use "Time-In" To Learn Pro-social Skills Instead Of "Time-Out"
- Directly Them to Self-Advocate:
  - Teach them about their disorder, how they manifest it, why they take medication, how to ask for help, what their "rights are"

Author (2006). CHADD Educator's Manual. Landover, MD: CHADD.

- Group Reward System:
  - When the class finishes its project everyone is rewarded.
  - Use peer mediated reinforcement.
- Contract in writing with the student that includes parents/guardians.
- Avoid Humiliation!
- Give Students Choices, but only two or three.

What Can I Do In The Classroom with AD/HD Kids?

- Classroom Stop Light
  - Stop light picture in front of the room.
  - When the light is RED...Be quiet; lecture
  - When the light is YELLOW...Deskwork
  - When the light is GREEN...Free play
- Negative Consequences
  - Make sure the child receive at least 2 rewards for each consequence.
- Ignoring bad behavior
  - Reprimands
  - Fines of tokens
  - In school suspension

Barkley, R. A. (2008). Classroom Accommodations for Children with ADHD. The ADHD Report, 16(4), 7-10.

What Can I Do In The Classroom with AD/HD Kids?

- Have a consistent classroom routine
- If there is a change in routine prepare the child for it, "…in 5 minutes we will be putting our social studies books up and taking out our math books."
- Have "cutouts" on smartboard and desk tablet with the class rules (never more than 3 at a time)
- Have students restate the rules frequently and when consequencing
- Teach tool kit of relaxation techniques and teach them when to use which one
- Classic classroom arrangement
- Allow non-disruptive movement (exercise ball, movement box, etc.)

Barkley, R. A. (2008). Classroom Accommodations for Children with ADHD. The ADHD Report, 16(4), 7-10.

How to Increase Classroom Productivity & Attention

- Ask child, "how many problems can you do for me in the next 10 minutes?"
- The child will be likely to accomplish task because they have come up with a set the goal.
- Later ask the child, "how many more problems can you do for me?"

Barkley, R.A. (2016) Managing ADHD In School: The Best Evidence-Based Methods for Teachers. Eau Clair, WI: PESI.

- Teach the student how to do tasks interspersed with short breaks to help with poor attention.
- Participatory learning in class.
  - Be the teacher's Vanna White – Child uses pointer to indicate on white board what teacher is talking about.
    - If the classroom has smartboard have student write on board what teacher is speaking about.

Movement and AD/HD

- **Have child write/doodle during lecture. Have them put something on paper that will help them maintain attention and remember lecture. This will reduce AD/HD symptoms.**
- **Allow non-distracting fidgets, movement, exercise balls, etc.**

Barkley, R.A. (2016) Managing ADHD In School: The Best Evidence-Based Methods for Teachers. Eau Clair, WI: PESI.

What Can I Do In The Classroom with AD/HD Kids?

- Seat close to teacher
- Remove distractions
- Give increased feedback
- Catch them being good
- Pair fun task with work task
- When speaking to child:
  - Establish eye contact, touch on back of hand, forearm and or shoulder
- Post next weeks assignments and special events on web so student and guardians can see
- Assignment notebook for student and guardians to sign

Barkley, R. A. (2008). Classroom Accommodations for Children with ADHD. The ADHD Report, 16(4), 7-10

COLOR CODE EVERYTHING

What Can I Do In The Classroom with AD/HD Kids?

- Research shows AD/HD children learn more from doing practice drills on computers than on paper.
- Stopping Impulsive Question Answering:
  - Say, "In 30 seconds I will be asking who was the first president?"
  - Ask a question. Have every student enter the answer it.
- Then the write question on their tablet. "I don't know is a valid answer, too".
  - If they answer I don't know, when the answer is provided they all it their "to learn list".
- When every student has put an answer on their tablet choose a student to answer.

Barkley, R.A. (2016) Managing ADHD In School: The Best Evidence-Based Methods for Teachers. Eau Clair, WI: PESI.

-- C. Wilson Anderson, Jr., MAT

Student Dyads

- Engage episodic/social memory and learning with peer tutoring in the classroom.
  - Children concentrate better, and learn faster than just listening to lectures.
  1. Distribute work sheets with new learning on it
  2. Teach concept/skill as usual
  3. Tell class what they are to do in dyads.
  4. Break into dyads.
  5. One student teaches and tests the other.
  6. Teacher supervises
  7. Alternate students
  8. Change dyads

Barkley, R.A. (2016) Managing ADHD In School: The Best Evidence-Based Methods for Teachers. Eau Clair, WI: PESI.

Transitions

- Right before transition teacher makes "transition tone" and says, ***"STOP"***
- Teacher reviews transition rules with students
- Children repeat the rules
- Teacher tells the rewards for good behavior & punishment for bad behavior
- Then teacher gives instruction to start new activity.
  - Students starts new activity
  - Teacher consequences behavior
  - At the end of the activity teacher gives overall assessment of success/failure.

Barkley, R.A. (2016) Managing ADHD In School: The Best Evidence-Based Methods for Teachers. Eau Clair, WI: PESI.

Goldrich, C. (2017). Executive Functions and ADHD in Children. Seminar Presented by PESI, Inc., Eau Clare, WI.

Tones, Nags, & and Plugs

- Make recording of randomly temporally spaced tones so student can ask, "Am I on task?"
  - Self-reward system
  - Have student graph how they are doing
  - Review with student
- Nag recordings, particularly by "father" figure
- Sound to start and stop task

Sound Suppression:

- Ear plugs
- White noise
  - Fan
- Sound suppression headphones

Barkley, R.A. (2016) Managing ADHD In School: The Best Evidence-Based Methods for Teachers. Eau Clair, WI: PESI.

Goldrich, C. (2017). Executive Functions and ADHD in Children. Seminar Presented by PESI, Inc., Eau Clare, WI.

"The Problem Solving Manual"

- **Have child create a written, bound list of directions of:**
  - **How to make decisions**
  - **Active listening**
  - **How to resolve conflicts**
  - **Brainstorming to write papers**
  - **How to solve specific types of math problems**
  - **Etc.**
- **Do a full court press to teach the child keyboarding so they can write without having to cope with their fine motor difficulties.**

Barkley, R.A. (2016) Managing ADHD In School: The Best Evidence-Based Methods for Teachers. Eau Clair, WI: PESI.

The "Problem" with The Problem Solving Manual

- **Many school districts *DO NOT* teach printing, cursive writing, or keyboarding because, "…in the future everything will be voice activated."**
- **As a result many children cannot read cursive writing.**
- **Children and young adults now, *"sign with their mark".***
- **Question: what happens when the electricity goes out and the batteries die?**
- **How do the children learn fine motor skills?**
  - **Writing is language mediated; drawing is not!**

Homework & AD/HD

- One set of books and materials at school and another identical set at home
- Best, eliminate homework for elementary kids:
  - If cannot – 10 minutes work per subject X grade level
  - Decrease the child or teen's total workload to what is essential to be done
- Apply the 30% to 40% rule
- Give frequent breaks with shorter work quotas
  - 20 minutes work and 10 minutes free time; no screens
  - Remember: Homework is for practice not learning!

Barkley, R. A. (2008). Classroom Accommodations for Children with ADHD. The ADHD Report, 16(4), 7-10.

Wilke-Deaton, J. (2018). ODD, ASD, ADHD & Mood Disorders: Over 50 Proven Techniques for Children and Adolescents. Seminar from PESI, Inc., Eau Claire, WI.

-- C. Wilson Anderson, Jr, MAT

Homework & AD/HD

“Don’t send unfinished class work home for parents to do. Parents of ADHD children have enough stress at home with the ordinary home responsibilities and school homework to be done and do not need to be overburdened with a teacher’s failed responsibility.” (p. 34)

Barkley, R.A. (2016) Managing ADHD In School: The Best Evidence-Based Methods for Teachers. Eau Clair, WI: PESI.

- **“Ask yourself, "How much work does this student need to do to demonstrate that he or she has acquired the concept I am teaching?" That should be enough.” (p. 34-35)**
- **As C. Wilson Anderson, Jr., MAT says, “homework is for practice.”**
  - **Homework is not to learn the material it is to automatize what is learned in class.**

Homework & AD/HD

- In elementary school reduce/eliminate homework
- Calculate homework time by multiplying 10 times the grade in school (i.e., 10 X 3rd Grade = 30 minutes)
- Eliminate classroom busy work
- Give small work quotas with more frequent breaks

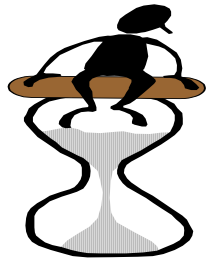
Barkley, R.A. (February 22, 2013). ADHD IN Children: Diagnosis and Treatment. Poway, CA: ContinuingEdCourse.net. From website: http://www.continuingedcourses.net/active/courses/course004.php.

Homework

- Encourage "study buddies" with kids that live close to each other for homework.
  - Take turns with houses.

Barkley, R.A. (2016) Managing ADHD In School: The Best Evidence-Based Methods for Teachers. Eau Clair, WI: PESI.

Time Management Technology for AD/HD



Devices

- **e-pill CADEX VibraPlus SPORT - Vibrating 8 Alarm Watch:** https://www.epill.com/sport1.html
- **WatchMinder:** https://www.watchminder.com/
- **Talking Traceable Timer:** https://www.traceable.com/5015-traceable-talking-timer.html
- **Time Tracker® Visual Timer & Clock:** https://www.learningresources.com/product/time+tracker--174-+visual+timer+-amp-+clock.do
- **Time Timer:** https://www.timetimer.com/

Apps

- **EpicWin:** http://www.rexbox.co.uk/epicwin/reviews.html
- **iRewardChart:** https://play.google.com/store/apps/details?id=com.gotclues.irewardchart.full&hl=en_US
- **Due:** https://itunes.apple.com/us/app/due/id390017969?mt=8&ign-mpt=uo%3D4
- **ChoreMonster:** https://itunes.apple.com/us/app/choremonster/id532344230?mt=8&ign-mpt=uo%3D8

Attention Training Systems

- **Classroom Do Jo: Behavior Management Software Smart Phone apps and Smart Board Apps – www.classdojo.com**
- **Place a timer on the child's desk to give them an external representation of time.**

504 Planning

- **Spirit of 504: Everyone gets what they need to be successful.**

  Nowell, D. D. (2018). Changing The ADHD Brain: Moving Beyond Medication. Seminar presented by PESI, Inc., Eau Clare, WI.

- **First target productivity, then accuracy.**

  Barkley, R.A. (2016) Managing ADHD In School: The Best Evidence-Based Methods for Teachers. Eau Clair, WI: PESI.

- **Nobody can do something 100% of the time.**

  Goldrich, C. (2017). Executive Functions and ADHD in Children. Seminar Presented by PESI, Inc., Eau Clare, WI.

- **30 Accommodations Sheet:**
  - https://www.additudemag.com/download/classroom-accommodations-for-school-children-with-adhd/
- **Wrights Law: www.wrightslaw.com**
- **Counsel of Parent Attorney Advocates:**
  - www.coppa.org
- **National Disability Rights Network:**
  - www.ndrm.org

How to Connect Accommodations

- **Use Gordon, Lewandowski, and Lovett's (2015) "ADHD Accommodations Matrix" when suggesting academic/work accommodations given how the person with AD/HD is impaired compared to the "Average American" under the American's with Disabilities Act, Amendments Act of 2008.**

Gordon, M., Lewandowski, L., and Lovett, B. (2015). Assessment and Management of ADHD in Educational and Workplace Settings in the Context of ADA Accommodations. In R.A. Barkley (Ed.), Attention-Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment. New York, NY: Guilford, p. 785.

Social Interaction and AD/HD

Kevin T. Blake, Ph.D., ADHD-CCSP, P.L.C.

What is Social Competence?

"Social competence is an ability to take another's perspective concerning a situation and to learn from past experience and apply that learning to the ever-changing social landscape. The ability to respond flexibly and appropriately defines a person's ability to handle the social changes that are presented to us all." (p. 1-2)

Semrud-Clikeman, M. (2007). Social Competence in Children. New York, NY: Springer, pp. 1-2.

Social Competence and Health

"There is sufficient empirical evidence that links social competence to mental and physical health…It has been linked to such varied disorders as anxiety, cardiovascular disease, juvenile delinquency, and substance abuse, to name a few." (p. 1)

Semrud-Clikeman, M. (2007). Social Competence in Children. New York, NY: Springer, pp. 1-2.

- **Social Support: Stress Buffering- Reduces the stressful event by promoting less threatening interpretation of the event.**
- **Social Integration: Main Effect- Promotes positive psychological states, social motivation and pressure to care for oneself.**
- **Negative Interactions: Relationships as a Source of Stress- Elicits psychological stress and increases risk for disease.**

Cohen, S. (November, 2004). Social Relationships and Health. American Psychologist, 59 (8), pp. 676-674.

Skills of Social Emotional Competence

- **Awareness of one's own emotional state**
- **Awareness of other's emotional state**
- **Emotional use of words**
- **Ability to cope with emotional distress**
- **Ability to attend to the reaction of others**

Semrud-Clikeman, M. (Spring, 2003). Executive Function and Social Communication Disorders. Perspectives, 29 (2), p. 20-22.

Semrud-Clikeman, M. (2007). Social Competence in Children. New York, NY: Springer.

Four Steps of Communication

1. **“Think about the people with whom you want to communicate.**
2. **Use your body to establish a physical presence.**
3. **Use your eyes to think about people as you relate to them.**
4. **Use your words to relate to people when you talk to them.” (p. 71)**

Garcia Winner, M., and Crooke, P. (2011). Social Thinking At Work: Why Should I Care. San Jose, CA: Social Thinking.

AD/HD & Socialization

- **80% of AD/HD children suffer social rejection by second grade. They can live a lifetime of rejection.**
- **AD/HD children often are not aware of their poor social skills and blame others for their problems.**

Barkley, R.A. (2008). Advances in ADHD: Theory, Diagnosis and Management. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801- 5415; www.jkseminars.com.

- **Loneliness can negatively effect executive function**

Diamond, A. (September 27, 2012). Executive Functions. Annual Review of Psychology. DOI: 10.1146/annurev-psych-113011-143750.

Ostracism and the Brain

- **"No matter how and why people are left out their response is swift and powerful, inducing a social agony that the brain registers as physical pain." (p. 32)**
- **"All social animals use this form of group rejection to get rid of burdensome group members. In nonhuman animals, an unaccepted member usually ends up dead.**

Williams, K.D. (January, 2011). The Pain of Exclusion. Scientific American Mind, 21(6), 30-37.

Ostracism and the Brain

What to do if you are ostracized:

1. **Remove yourself from the situation and distract yourself.**
2. **Remind yourself of your strengths.**
3. **Exercise more control in your life; assert yourself.**
4. **Reconnect with family and friends.**

Williams, K.D. (January, 2011). The Pain of Exclusion. Scientific American Mind, 21(6), 30-37.

AD/HD & Social Skills Training

Social Skills Training and AD/HD

"It is widely recognized that peer problems are relatively intractable, especially among those with ADHD. Social skills training programs designed to reduce inappropriate behaviors and increase prosocial behaviors have rarely impressed classmates. Being least liked by members of a peer group is highly resistant to change" (p. 3).

Hund, A.M., and Landau, S. (June, 2012), You Never Get a Second Chance to Make a First Impression: Social Competence of Boys with ADHD. ADHD Report, 20(3), 1-4, 16.

First Impressions and ADHD

"The results of this study suggest that boys with ADHD may fail to create a desirable first impression. Initial impressions are formed quickly" (p.4).

Hund, A.M., and Landau, S. (June, 2012), You Never Get a Second Chance to Make a First Impression: Social Competence of Boys with ADHD. ADHD Report, 20(3), 1-4, 16.

Something New and Promising

Amori Yee Mikami, Ph.D. and her colleagues at the University of British Columbia (UBC) have recently developed a new social skills program where the professional teaches the parents to teach their child social skills at the point of performance in activities with there peers. Their child gets immediate feedback, pre-session coaching, and debriefing as well as their peers see they "trying to become better socially", and give them a break. The technique is called, "Parental Friendship Coaching".

Lerner, M.D. et al. (September 2011). The Alliance in a Friendship Coaching Intervention for Parents of Children With ADHD. Behavior Therapy. DOI: 10.1016/j.beth.2010.11.006.

https://peerlab.psych.ubc.ca/

https://peerlab.psych.ubc.ca/principal-investigator/

ADHD Girls and Boys in Social Interaction

"Although boys and girls with ADHD experienced difficulties in all areas, girls with ADHD, especially the inattentive subtype, were more negatively affected in academics and peer relationships. Inattentive girls were less popular and more likely to be bullied than girls without ADHD, whereas inattentive boys were not. The social isolation experienced by many girls with ADHD deserves greater attention". (p. 532)

Elkins, I.J., Malone, S., Keves, M., Lacono, W.G., and McGue, M., (2011). The Impact of Attention-Deficit/Hyperactivity Disorder on Preadolescent Adjustment May Be Greater for Girls Than Boys. Journal of Clinical Child and Adolescent Psychology, 40(4), 532-545.

Play

- Isolation hinders children's social and cognitive development.
- Play also directly affects the development of the frontal lobe…executive function.
- Isolation may worsen the genetic problems with executive function caused by AD/HD.
- It can hinder the development of "theory of mind."
- It may also hinder the development of a sense of morality, social roles and the ability to bond with others.

Azar, B. (March, 2002A). It's More Than Just Fun and Games. Monitor On Psychology, 33 (3), pp. 50-51.

Azar, B. (March 2002B). The Power of Pretending. Monitor On Psychology 33 (3), pp. 46-47.

Vicarious Learning

Those with AD/HD have trouble with vicarious learning and would be expected to have trouble learning non-verbal social interaction which is not directly taught. Their impulsivity would make it difficult for them to attend to the non-verbal cues of others, too.

Barkley, R.A. (February 19-20, 2002). ADHD and Oppositional Defiant Children. Seminar presented in Phoenix, Arizona.

Excellent Social Skills Program

Social Thinking Center

Innovative, Practical Treatment of High-Functioning Autism, Asperger's Syndrome, NLD, ADHD and other Undiagnosed Social-Cognitive Challenges

The Social Thinking Center

3031 Tisch Way, Suite 800

San Jose, CA 95128

Phone (toll free): 877-464-9278

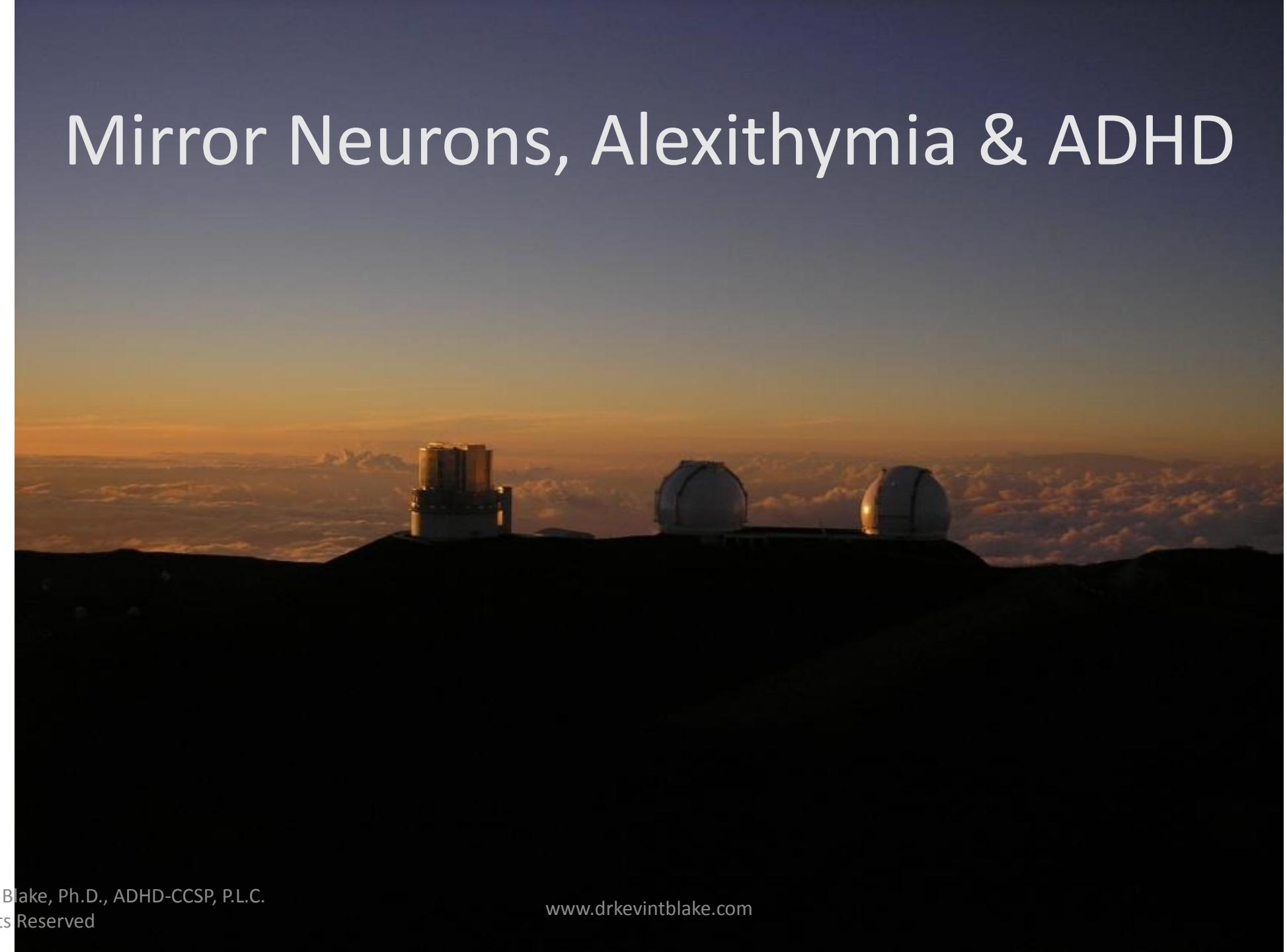
Website: www.socialthinking.com

Emotional Intelligence

- **A prerequisite for empathy is an awareness of one's own emotions.**

Lane, R.L. (2000). Neural Correlates of Conscious Emotional Experience. In R. L. Lane, L. Nadel, G. Ahern, J. Allen, A. Kazniak, S. Rapcsak and G. Schwartz (Eds.), Cognitive Neuroscience of Emotion. New York, NY: Oxford University Press, pp. 345-370.

Mirror Neurons, Alexithymia & ADHD



Mirror Neurons & Executive Functions

"Studies show that the capacity to imitate the actions of others is now virtually an instinct at the level of neuronal functioning. The PFC (Prefrontal Cortex, sic) responds to viewing others' actions by activating the same sensory-motor regions of the brain as the acting person is using to create the behavior. The mirror-neuronal system has been linked to theory of mind and to empathy, among other human attributes related to EF (Executive Functions, sic.)" (p. 117).

Barkley, R.A. (2012). Executive Functions: What They Are, How they Work, and Why They Evolved. New York, NY: Guilford.

Mirror Neurons & AD/HD

Barkley (2008) said that those with AD/HD and comorbid Alexithymia typically have intact mirror neurons, they just do not use their mirror neurons due to their frontal lobe difficulties. As a result such people will have significant difficulty emphaticizing with others.

Barkley, R.A. (2008). Advances in ADHD: Theory, Diagnosis and Management. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; www.jkseminars.com.

Mirror Neurons

How does this relate to ADHD?

Barkley (2008) said that those with AD/HD and comorbid Alexithymia typically have intact mirror neurons, they just do not use their mirror neurons due to their frontal lobe difficulties. As a result such people will have significant difficulty emphaticizing with others.

Barkley, R.A. (2008). Advances in ADHD: Theory, Diagnosis and Management. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; www.jkseminars.com.

Alexithymia *MAY* BE A NEUROBIOLOGICAL DISORDER!

- **22% OF THOSE WITH AD/HD HAVE ALEXITHYMIA.**
- **Children with AD/HD have significant difficulty identifying emotions and are more externally orientated when compared to non-AD/HD children. This appears to be related to their hyperactive/impusive symptoms. There appears to be an association between AD/HD and alexythemia.**

Edel, M.-A. et al. (September 2010). Alexithymia, emotion processing and social anxiety in adults with ADHD. European Journal of Medical Research. DOI: 10.1186/2047-783X-15-9-403.

Donfrancesco, R. et al. (2013). Attention-deficit/hyperactivity disorder and alexithymia: A pilot study. Attention Deficit Hyperactivity Disorders. DOI: 10.1007/s12402-013-0115-9.

Theory of Mind & Mirror Neuron "Software"

- **"Able individuals with autism spectrum disorders can with time and practice achieve awareness of mental states by compensatory learning." (p. 977)**

Frith, U. (2001). Mind Blindness and the Brain in Autism. Neuron, 32, 969-979.

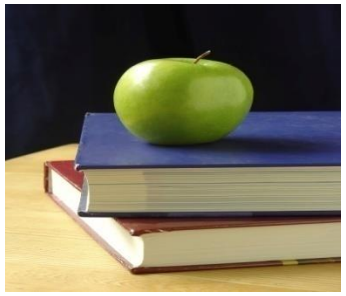
- **Possible Treatment Technique -**

  Carol Gray – Social Stories &

  Laurel Falvo- Social Response

  Pyramid:

  www.thegraycenter.org/



Prosopagnosia of Facial Expressions

Children and Facial Expressions

"An early skill that has been found to be important for the development of additional social ability is the ability to understand and recognize facial expressions appropriately. These expressions allow the child to understand the other's mood reaction to their behavior and adapt accordingly…These skills develop early and have been found already present in the preschool years." (p. 7)

Semrud-Clickman, M. (2007). Social Competence in Children. New York, NY: Springer, p. 76.

Decoding Skill and Facial Expression

- **Brown (2001) indicated AD/HD children are less accurate in facial expression identification than their non-AD/HD peers.**

Brown, T. E. (2001). Social Ineptness & "Emotional Intelligence" in ADHD. Paper presented at the 13th Annual Children and Adults With Attention Deficit Disorders International Conference, October 18-20 2001, Anaheim , CA.

- **2015 meta analysis of 44 studies indicated AD/HD children had significantly lower accuracy in emotional recognition, especially anger and fear. Theory of Mind was also impaired compared to non-disabled. Theory of mind was worst in ASD population.**

Bora, E. et al. (December 28, 2015). Meta-analysis of social cognition in attention-deficit/hyperactivity disorder (ADHD): comparison with healthy controls and autistic spectrum disorder. Psychological Medicine. DOI: 10.1017/S0033291715002573.

- **Identifying facial expressions (angry, sad, fearful, happy, disgust, surprise) when compared to non-disabled children was worse in ADHD children. This was not due to a sensory issue.**

Jusyte, A. et al (December, 2017). Recognition of peer emotions in children with ADHD: Evidence from an animated facial expressions task. Psychiatry Research. DOI: 10.1016/j.psychres.2017.08.066.

- **A Korean study demonstrated children with AD/HD significantly improve with emotional facial recognition training. Those with ASD need significantly more training.**

Ji-Seon, L. et al. (October 1, 2018). Discriminative Effects of Social Skills Training on Facial Emotion Recognition among Children with Attention-Deficit/Hyperactivity Disorder and Autism Spectrum Disorder. Journal of the Korean Academy of Child and Adolescent Psychiatry. DOI: 10.5765/jkacap.180010.

Computer Programs & Games to Treat Prosopagnosia

- Cognitive Affective Training-Faces and Feeling Words: www.CAT-kit.com
- Baron-Cohen, S. (2003). Mind Reading: An Interactive Guide To Emotions. Philadelphia, PA: Jessica Kingsley.

  "Harry Potter" teaches facial expressions.
- Baron-Cohen, S., Drori, J., Harcup, C. (2009). The Transporters (USA Version). London, England: Changing Media Development: www.thetransporter.com

  "Thomas the Tank-Engine" teaches faces.

Other Methods of Learning Facial Expressions

- **Watch children's shows like *Barney* and *Sesame Street* and observe the difference between the facial expression reactions of children and adults.**
- **Watch TV with the sound turned off and look at the face.**
- **You can see extreme emotions on soap operas, animated movies (i.e., Toy Story) claymation (*Wallace and Grommit*).**

Garcia Winner, M., and Crooke, P. (2011). Social Thinking At Work: Why Should I Care. San Jose, CA: Social Thinking.

AD/HD and Making Facial Expressions

Making Facial Expressions & AD/HD

- Regarding facial expressions in children and adults with AD/HD Kuhle, Hoch, Rautzenberg and Jansen (2001) concluded, "Altogether, … the facial expressions, are uncontrolled and jerky and are often wrongly dimensioned in time and space." (p. 6)
- AD/HD children's eyes drift away from those they are in conversation with.
- This usually interrupts the flow and their comprehension of the conversation.
- Often parents feel rejected by AD/HD children when they do this.

Kuehle, H.J., Hoch, C and Jansen, F. (2002). Video Assisted Observation of Visual Attention, Facial Expression of the Individual Stimulant Dosage and Motor Behavior for the Diagnosis and for the Determination in Children with AD/HD. Obtained from: Kuehle, H. (October 17, 2002). Video Assisted Observation of Visual Attention and Motor Behavior for the Diagnosis and Determination of the Individual Stimulant Dosage in Children with AD/HD. Research Poster Session, 14th Annual CHADD International Conference, Miami Beach, FL.

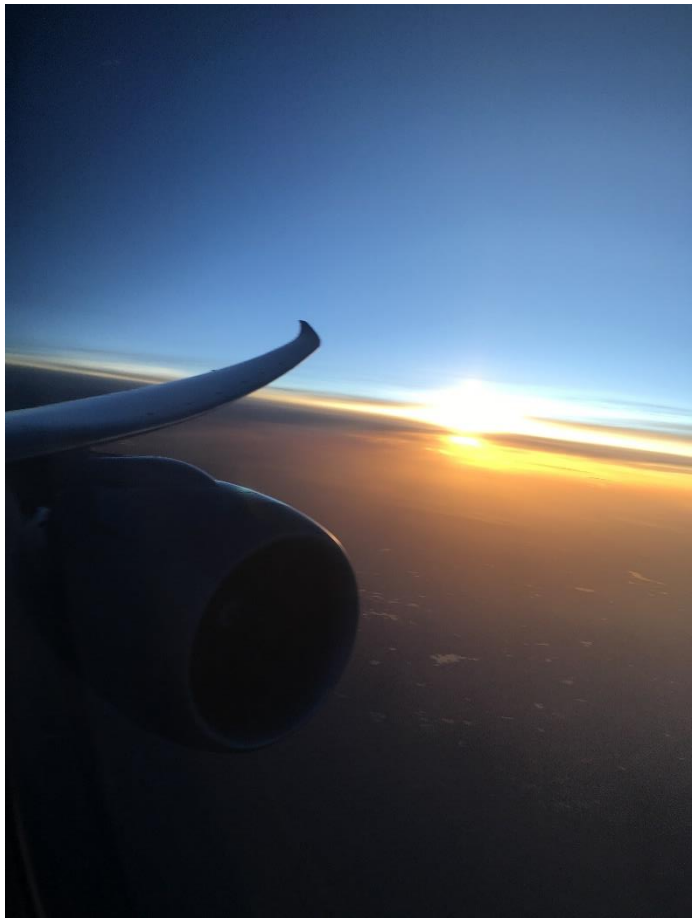
Making Facial Expressions & AD/HD

- AD/HD children smile abruptly.
- There is little or no transition between emotional states.
- Sometimes their facial expression bleeds over into the next emotional state.
- Expression of emotion often appears exaggerated. The quality of expression can be limited due to this.
- Even body movements are jerky and uncontrolled.

- Optimal dosing of a stimulant medication causes a significant reduction in visual attention loss.
- Facial expressions will become smooth and variable.
- Too high a dose can cause a return of the symptoms.
- Can properly ID 80% of the AD/HD children with video procedure.

Kuehle, H.J., Hoch, C. and Jansen, F. (2002). Video Assisted Observation of Visual Attention, Facial Expression of the Individual Stimulant Dosage and Motor Behavior for the Diagnosis and for the Determination in Children with AD/HD. Obtained from: Kuehle, H. (October 17, 2002). Video Assisted Observation of Visual Attention and Motor Behavior for the Diagnosis and Determination of the Individual Stimulant Dosage in Children with AD/HD. Research Poster Session, 14th Annual CHADD International Conference, Miami Beach, FL.

Thank You!



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