Adult ADHD: Targeted Interventions to Improve Daily Functioning and Bring Order to the Disorganized Mind

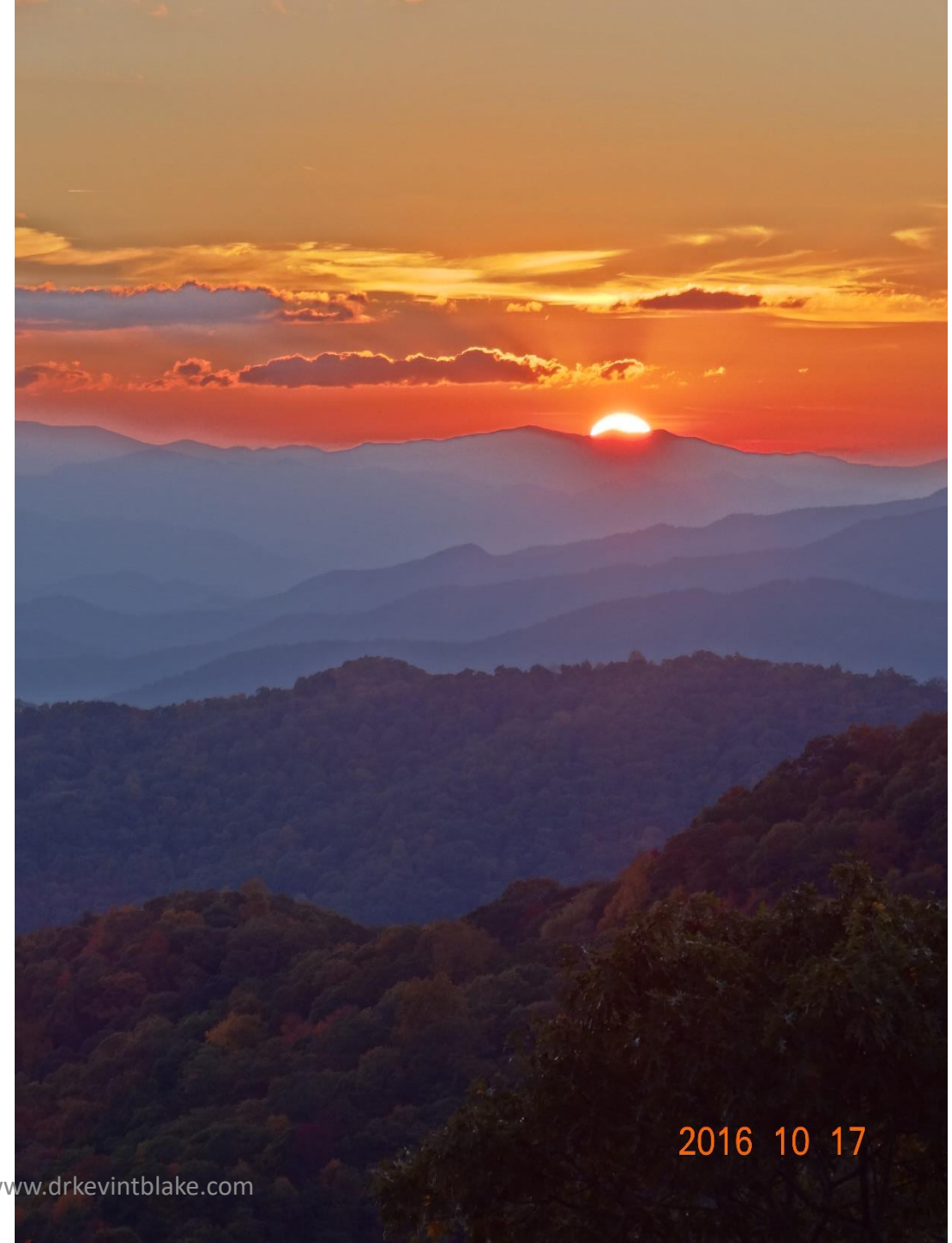
Kevin T. Blake, Ph.D., P.L.C., ADHD-CCSP

Tucson, Arizona

PESI

Eau Claire Wisconsin

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 adults with AD/HD. Every adult 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.**

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.

Frontal Lobes

- In humans, a disproportionate expansion the frontal lobe.
- Prefrontal Cortex key player in vast networks of associative areas
- These areas also include the inferior parietal and anterior temporal regions
- Up to 40 times larger in humans than in macaques
- It allows us to read
- They allow us to transmit knowledge to younger generations

Dehaene, S. (2009). Reading in the Brain: The New Science of How We Read. New York, NY: Penguin.

Theories 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

- **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).**

Baddeley's Executive Function Theory (Cont'd)

- **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).**

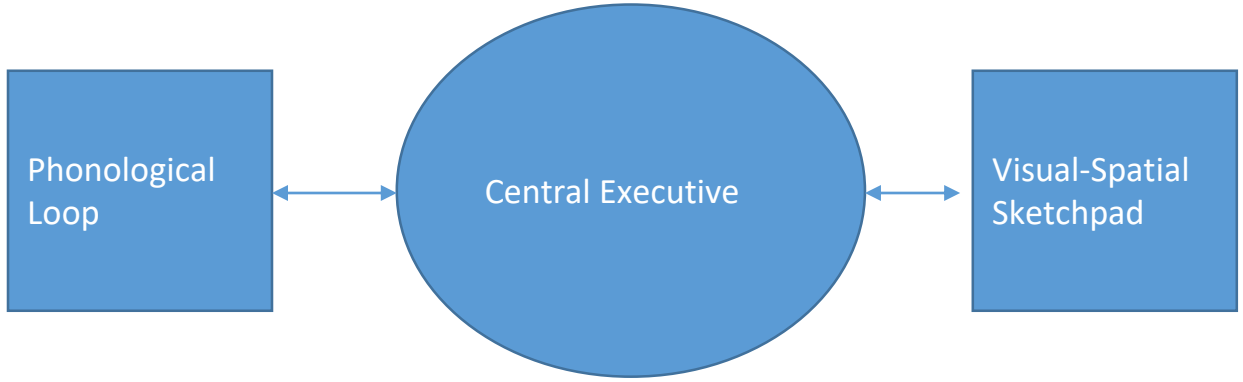
Baddeley, A. (January 31, 1992). Working Memory. Science, 255(5044), 556-559. DOI: 10.1126/science.1736359.

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). 3

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

What is 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.

- **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, 4.

Neurotypical Adolescent & Adult Brain Development and EF

Neurotypical Adolescent Brain Development

- **The Prefrontal Cortex and its connections undergo very significant changes during adolescence.**
- **These changes underlie important cognitive developments.**
- **Prefrontal Cortex development is variable across adolescents and adults; some people never attain what might be called "mature" frontal lobes (i.e., adults with AD/HD).**

Turkstra, L.S. et al. (December 1, 2010). Executive Functions and Communication in Adolescence. The ASHA Leader, 15, 8-11. DOI: 10.1044/leader.FTR1.15152010.8

Processing and Speed Executive Function Development During Adolescence

- **Processing speed increases significantly**
- **Increase in grey matter and myelination as much as first two years**
- **Hormone & environmental changes important during teens**
- **Different developmental trajectories for each individual**
- **But, improvement in selective attention, multitasking, inhibition & decision making**

McCalla, A. (December 11, 2017). Executive Functioning – Where is it Controlled and How Does it Develop? Remediation Techniques for Deficits and Dysfunction. Rainbow Rehabilitation Centers. From website: https://www.rainbowrehab.com/executive-functioning/#attachment%20wp-att-6197/0/.

Down Turn in Executive Function in Adolescence

- About 13/14 puberty begins
  - Twice the amount of synapses and myelin laid down
  - EF initially blossoms, but at 15-17 deteriorates to pre-teen level
    - "Signal to noise ratio" out of whack. Need to prune new synapses.
  - This is finished about age 27-30. Back in balance – then adult level EF achieved

McCalla, A. (December 11, 2017). Executive Functioning – Where is it Controlled and How Does it Develop? Remediation Techniques for Deficits and Dysfunction. Rainbow Rehabilitation Centers. From website: https://www.rainbowrehab.com/executive-functioning/#attachment%20wp-att-6197/0/.

Executive Function Adolescent Development

- Around age 12 there is an increase in goal setting abilities.
- Between ages 11 and 15 there is a significant increase of planning abilities. This is when girls executive function exceeds boys.
- Age 14 working memory starts to increase.
- About age 15 shifting attention, inhibition and working memory approaches adult levels. Planning skills reach adult levels, but pros are given more weight than cons.
- As the individual reaches about 19 more weight given to cons and reward system more adult-like.
- 16 year olds do not have adult working memory spans.**

McCalla, A. (December 11, 2017). Executive Functioning – Where is it Controlled and How Does it Develop? / Remediation Techniques for Deficits and Dysfunction. Rainbow Rehabilitation Centers. From website: https://www.rainbowrehab.com/executive-functioning/#attachment%20wp-att-6197/0/.

Elif, I. et al. (May 27, 2015). Visual working memory continues to develop through adolescence. Frontiers in Psychology. DOI: 10.3389/fpsyg.2015.00696

Neurotypical Older Adult EF Development

Neurotypical Older Adults and EF Development

- Short-Term memory peaks at age 25 to 30.
- People in their 80s tend to have lower IQs due to slower processing speed, lower performance on visual tasks and reduced perceptual reasoning. Verbal comprehension and working memory tend to be intact.
- They have difficulty switching attention and slower on selective attention and more like young adults on vigilance.
- Higher cognitively functioning older adults were typically higher cognitively functioning younger adults .
- From middle adulthood EF, memory and attention decline.

Princiotta, D. et al. (2014). Executive functioning as a mediator of age-related cognitive decline in adults. In S. Goldstein & J. A. Naglieri (Eds.), Handbook of executive functioning, New York, NY: Springer, 143-155.

Older Adults and EF Development

- **The prefrontal cortex is vulnerable to aging. This is one of the first areas to show degeneration due to age.**
- **The prefrontal cortex, cerebellum, and basal ganglia suffer loss of total volume due to reduction of myelination of these brain regions.**
- **Older adults with EF difficulty will have significant difficulty with slow gait when walking over obstacles (i.e., degree of locomotion + sensory adaptation to complete task). They also have difficulty performing tasks of everyday living.**
- **Older adults walk slower when carrying a package when they have good EF. Connection of EF and walking speed found earlier.**

Princiotta, D. et al. (2014). Executive functioning as a mediator of age-related cognitive decline in adults. In S. Goldstein & J. A. Naglieri (Eds.), Handbook of executive functioning, New York, NY: Springer, 143-155.

Coppin, A.K. et al. (November, 2006). Association of executive function and performance of dual-task physical tests among older adults: analyses from the InChianti study. Age and Aging, 35(6), 619-624.

Older AD/HD Development

Researchers from Taiwan found adults with AD/HD have 3.4 fold higher risk of developing dementia when compared to non-AD/HD adults after conducting a national sample.

Tzeng, N-H. et al. (June 19, 2017). Risk of Dementia in Adults With ADHD: A Nationwide, Population-Based Cohort Study in Taiwan. Journal of Attention Disorders. DOI: 10.1177/1087054717714057.

Assessment of Executive Function

Assessment of Executive Function

- **Every assessment needs:**
  - **Standardized testing of psychological processing**
  - **Informal methods**
    - **Observations**
    - **Interviews**
  - **"Assessment of attention and executive functions depends heavily on the use of rating scales, as direct measurements of these processes are limited" (p. 213).**

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

Pros and Cons of Neuropsychological Testing of Executive Function

- **Pro: Mapou, R.L. (2019). Counterpoint: Neuropsychological Testing May Not be Useful in the Diagnosis of ADHD, But… ADHD Report, 27(2), 8-12.**
- **Con: Barkley, R.A. (2019). Neuropsychological Testing is Not Useful in the Diagnosis of ADHD. Stop It! (Or Prove It). ADHD Report, 27(1), 1-8.**
- **Con: Barkley, R.A., et al. (August, 2019). Is Neuropsychological Testing Useful For Any Reason in the Evaluation of ADHD? A Rejoinder to Mapou. ADHD Report, 27(5), 1-8.**

Abilities Accessed by Executive Function

- **Attention**
- **Emotional Regulation**
- **Flexibility**
- **Inhibitory Control**
- **Initiation**
- **Organization**
- **Planning**
- **Self-monitoring**
- **Working Memory**

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.

EF Assessment Instruments

- Adult Executive Functioning Inventory (ADEXI)
- Behavior Rating Inventory of Executive Function—Adult Version (Brief-A)
- Executive Skills Questionnaire — Adults (Screener)
  - http://wp.vcu.edu/vcucfi/wp-content/uploads/sites/1763/2012/08/PRC-Conference-2014_Executive-Skills-Toolbox-4.pdf
- NIH Toolbox Cognition Batteries:
  - http://www.healthmeasures.net/explore-measurement-systems/nih-toolbox/intro-to-nih-toolbox
  - http://www.healthmeasures.net/explore-measurement-systems/nih-toolbox/intro-to-nih-toolbox/cognition
  - http://www.healthmeasures.net/images/nihtoolbox/NIH_Toolbox_brochure_June_2017.pdf
- Barkley Deficits in Executive Functioning – Children and Adolescents, Daily Activities (BDEFS-CA)
- Barkley Deficits in Executive Functioning Scale (BDEFS for Adults)
- Comprehensive Executive Function Inventory Adult (CEFI Adult)
- NIH Toolbox Cognition Battery (NIHTB-CB)
- WAIS-IV
- WJ-IV Cognitive Battery

Negative Influences On Executive Function

Negative Influences of Executive Function

- AD/HD, depression, Specific Learning Disorder, Autism Spectrum Disorder
- Alzheimer's, brain damage
- Obsessive Compulsive Disorder

- "Temporary Problems":
  - Over stressed
  - Sad
  - Sleep deprived*

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.
- Sleep Hygiene, Sleep Clinic, Sleep Study

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.

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
- Posit Science: https://www.brainhq.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.

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.

Technology for Memory Difficulties

- Watchminder 2:
  www.watchminder.com/
- Record lectures with a digital device
- 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
- Digital Writing Notepads:
  https://www.2kreviews.com/best-digital-notepad/
- 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 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.

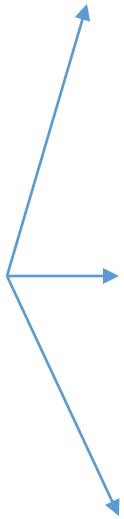
Working Memory & Anxiety

Problem Times for Anxious People

- 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

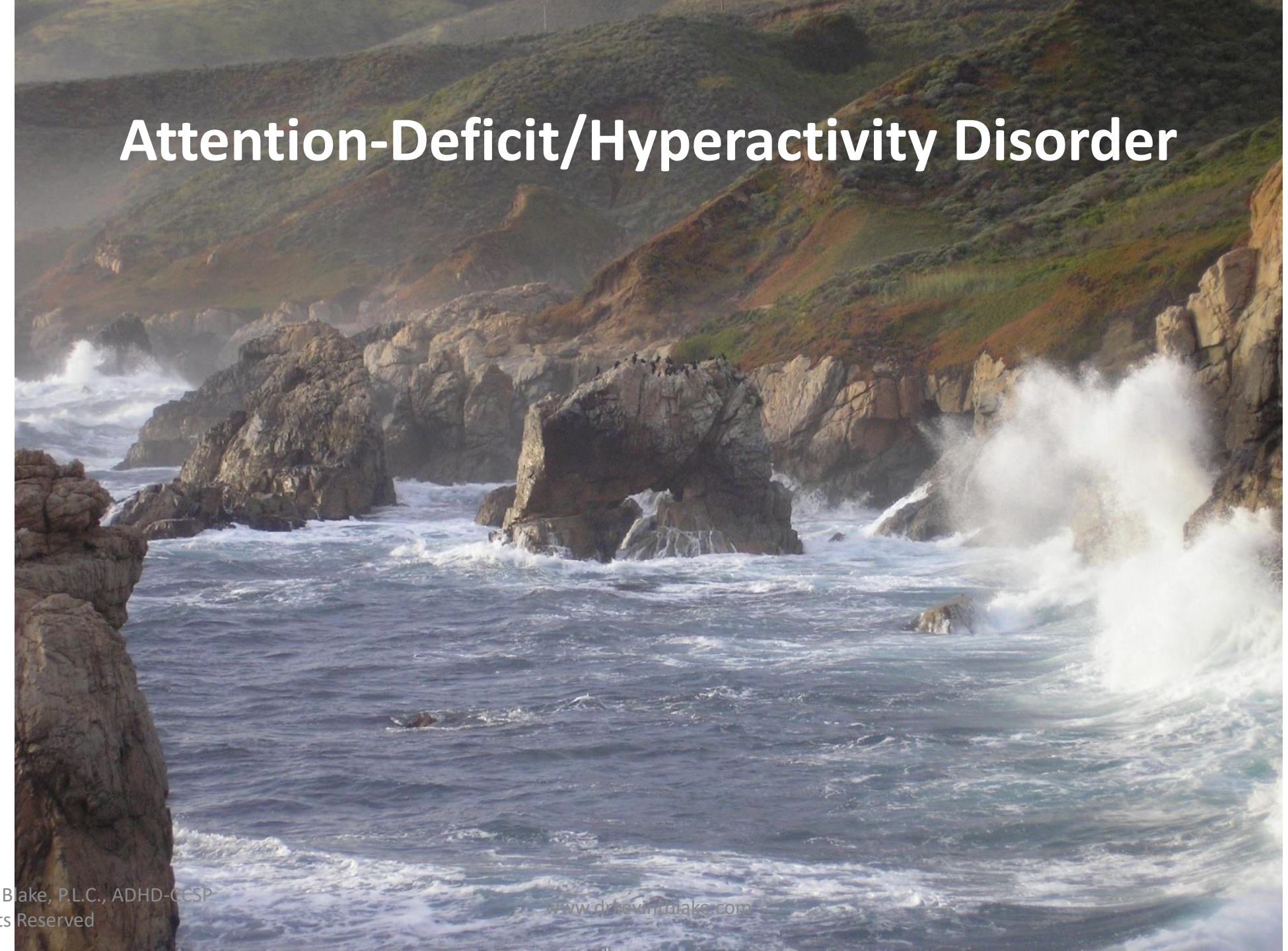


Emotional Thermometer (Body Sensation)

Self-Monitoring, Practice Relaxation

Collect Calming Activities

Attention-Deficit/Hyperactivity Disorder



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.

Executive Function & The Adult with AD/HD

- **AD/HD adults do significantly worse that adults without AD/HD in overall EF and on speeded tasks.**
- **In AD/HD adults poor EF and performance on speeded task is related to symptoms of inattention.**
- **If the AD/HD adult has a tendency toward rapid incorrect response style it is related to hyperactive/impulsive symptoms.**

Nigg, J.T. et al. (November 2005). Executive functions and ADHD in adults: evidence for selective effects on ADHD symptom. Journal of Abnormal Psychology, 114(4), 706-717. DOI: 10.1037/0021-843X.114.3.706.

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.**
- **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

… 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©

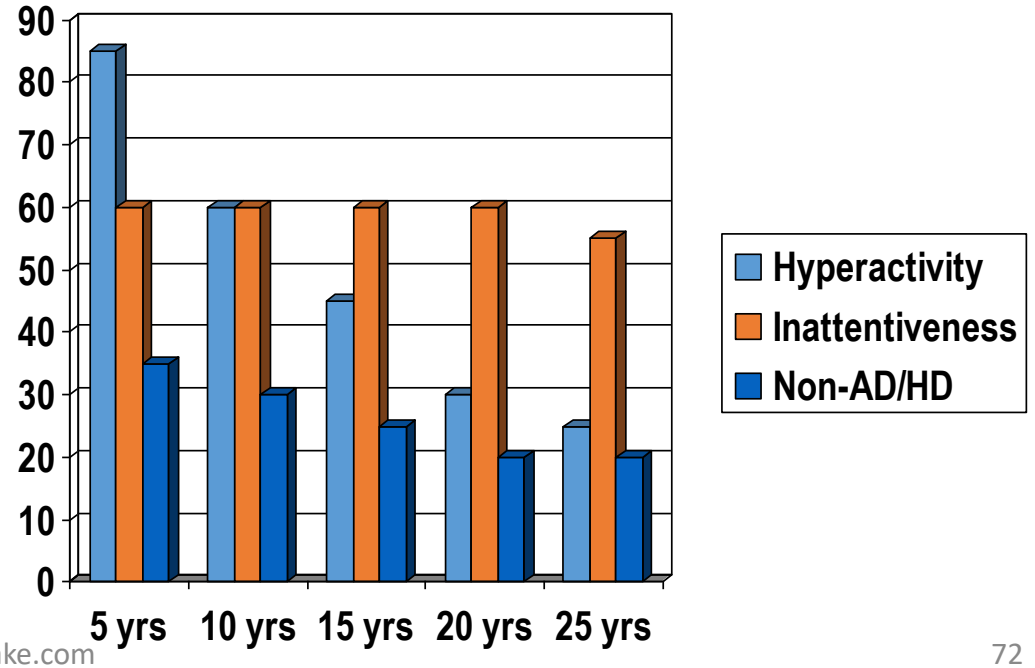
…when their current adult behavior is compared to their non-AD/HD peers. Remember, when you diagnose someone with AD/HD, you compare them to their non-AD/HD age peers.

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.

- **SCT was first described by Alexander Crichton (1798).**

Barkley, R.A. (August 28, 2018). The Two Attention Disorders: Identifying, Diagnosing, and Managing ADHD vs. Sluggish Cognitive Tempo. PESI, Inc. Continuing Education Self-Study Materials, Eau Clare, WI.

- **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.

Adults with SCT

- SCT have a risk for depression
- SCT dimensions are sluggishness and day- dreaminess does not correlate with EF
- No relationship with ODD and/or CD; Internalizers – not open to new experiences, shy, sensitive to punishment, depressed/anxious
- SCT adults more impaired in work, education and sex life than ADHD.

Barkley, R.A. (August 28, 2018). The Two Attention Disorders: Identifying, Diagnosing, and Managing ADHD vs. Sluggish Cognitive Tempo. PESI, Inc. Continuing Education Self-Study Materials, Eau Clare, WI.

- British study 81 adults with AD/HD
  - Found severity of AD/HD symptoms can be predicted from:
  - Amount of mind wandering, emotional lability & Sleep quality
  - Poor sleep = worse mind wandering and AD/HD symptoms

Helfer, B. et al. (January, 2019). The effects of emotional lability, mind wandering and sleep quality on ADHD symptom severity in adults with ADHD. European Psychiatry, 55, 45-51.

Adults with SCT

- SCT in adults is related to inattentive symptoms.
  - They more internalizing than AD/HD adults
  - Those with AD/HD and comorbid SCT have EF symptoms beyond just AD/HD
    - More problems with problem solving & organization
    - More pronounced inattentive symptoms than just having AD/HD

Leikauf, J.E. et al. (June, 2017). Sluggish Cognitive Tempo, Internalizing Symptoms, and Executive Function in Adults With ADHD. Journal of Attention Disorders. DOI: 10.1177/1087054716682337.

- US literature review of 10 studies found:
  - SCT on 4 continents in ages 4-64
  - World-wide/lifespan issue
  - SCT separate and distinct from AD/HD
  - Symptoms: internalizing, learning difficulties, functional impairment
  - May be related to 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.

SCT and The Default Mode Network

What few studies that have been done may have indicated SCT is connected to difficulty in the Default Mode Network. AD/HD is connected to problems in the EF frontal lobe.

Barkley, R.A. (August 28, 2018). The Two Attention Disorders: Identifying, Diagnosing, and Managing ADHD vs. Sluggish Cognitive Tempo. PESI, Inc. Continuing Education Self-Study Materials, Eau Clare, WI.

SCT and The Default Mode Network

- Some studies found SCT related to "Default Mode Network"
- AD/HD = Frontal Lobe
- Spontaneous, maladaptive mind wandering is shifting away from the external environment is connected to the Default Mode Network in a way that significantly reduces performance.

- Default Mode Network: Medial and lateral parietal, medial prefrontal, and medial and lateral temporal

Barkley, R.A. (August 28, 2018). The Two Attention Disorders: Identifying, Diagnosing, and Managing ADHD vs. Sluggish Cognitive Tempo. PESI, Inc. Continuing Education Self-Study Materials, Eau Clare, WI.

Sluggish Cognitive Tempo and EF

- SCT is not a primary disorder of Executive Function
- May be in posterior brain areas of controlling and orientating attention
- More impairment than those with AD/HD in:
  - Community activity, education, social status, household organization & work
  - More disabled in all life domains than controls, but not as much as those with AD/HD
  - Slow reaction time and shy
- Those with SCT have
  - Lower education level, less income, more unemployment and not married more than those with AD/HD
  - Possible Treatments:
    - 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.

AD/HD, Mind Wandering, Depression and Rumination

- A US and Dutch study found:
  - Adults with inattentive AD/HD have significantly more Mind Wandering than those with AD/HD
    - This had a negative effect on their reading comprehension
  - Inattentives had more depression and rumination
  - Working memory the same in both groups
  - Determined mind wandering related to rumination and depression in inattentive group, not working memory

- Concluded that Mindfulness and CBT may help

Jonkman, L.M. et al. (July 24, 2017). Mind wandering during attention performance: Effects of ADHD-inattention symptomatology, negative mood, ruminative response style and working memory capacity. PLoS One. DOI: 10.1371/journal.pone.0181213. eCollection 2017.

Accommodations for Adults with SCT (Slow Processors)

- **Accommodations:**
  - **Extended time on tests, projects and work**
  - **Seek work environments without significant time restraints**
  - **Stay away from "performance" situations**
  - **CBT may be helpful – want friends,**
    More self aware
  - **Allow them "Rest Time"**
  - **Give time to process; an extra 30 seconds**
  - **Notes and tapes**
  - **Repeated check-ins**
  - **Job Coaching**

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

“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

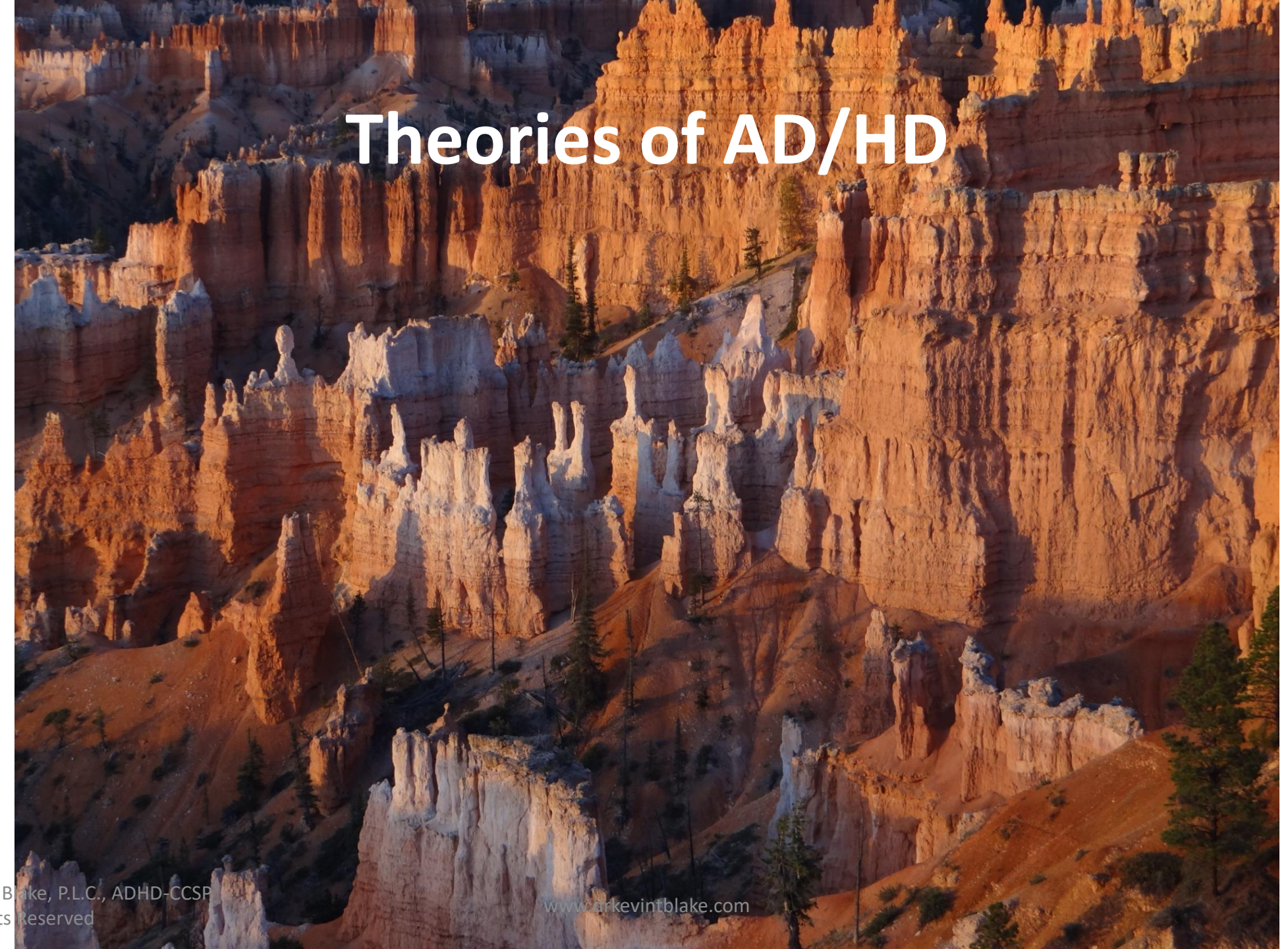
Swanson, J. et al. (April, 1998). Cognitive neuroscience of attention deficit hyperactivity disorder and hyperkinetic disorder. Current Opinion in Neurobiology, 8(2), 263-271.

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

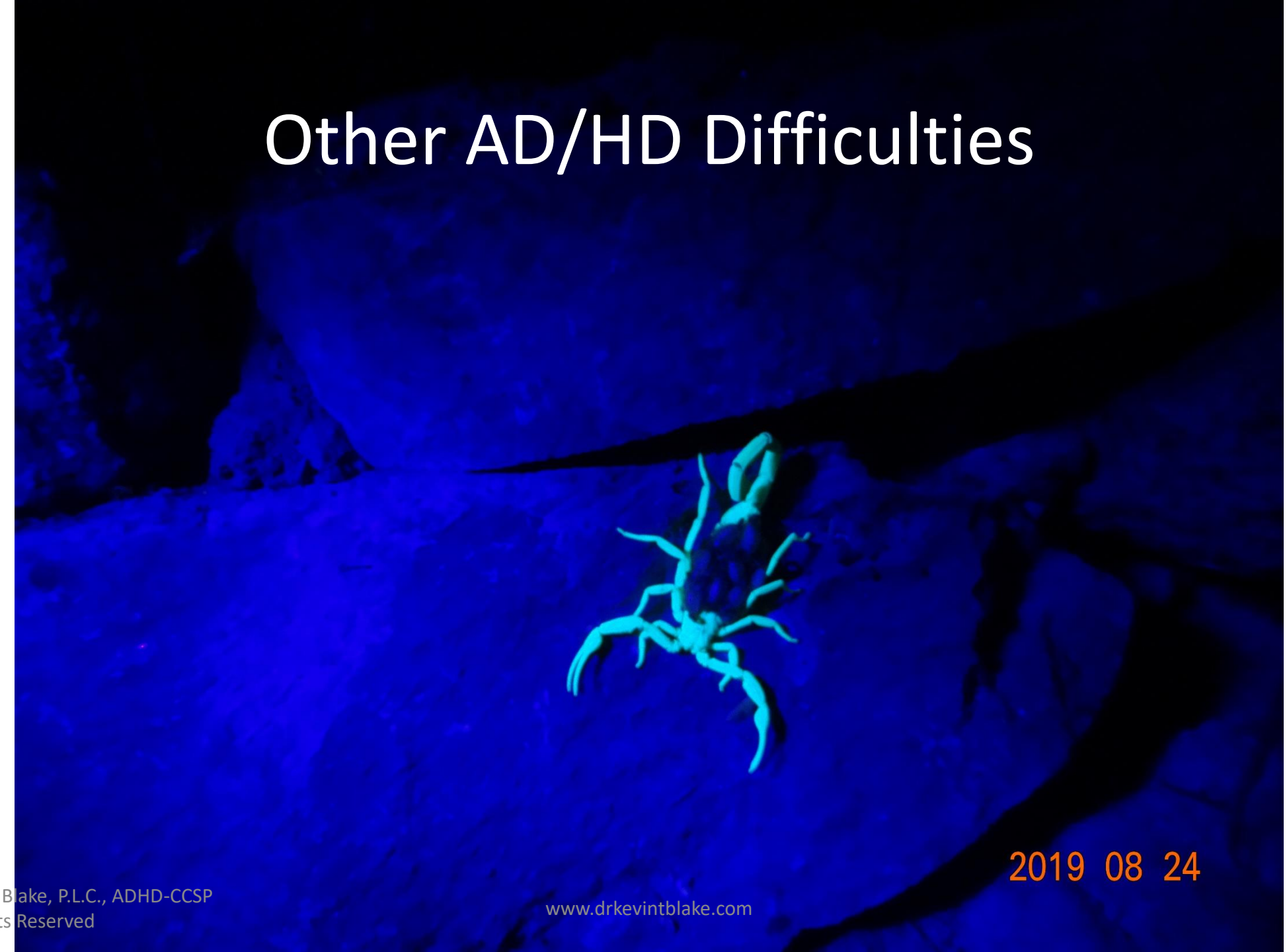
Summary of Tom Brown's Theory of AD/HD

- 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.

Other AD/HD Difficulties



How Time Blindness "Undevelops"

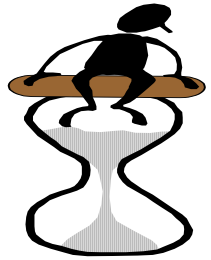
- **How far into the future can the neurotypial see?**
  - **2 year old: Now & Not Now**
  - **3 to 5 years: 5 to 20 minutes**
  - **First grade: 3 to 5 hours**
  - **Third grade: 8 to 12 hours**
  - **12 to 16 years: 2 to 3 days**
  - **17 to 23 years: 2 to 3 weeks**
  - **23 years on: 3 to 5 weeks**

How far into the future can The person with AD/HD see?

- **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.

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

Helping with The Internalization of Speech

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

"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.

AD/HD and Deficient Emotional Self-Regulation (DESR)

"Managing Affective Interference"

- Problems managing emotions, motivation & arousal
- Those with AD/HD have problems inhibiting emotional reactions compared to peers
- The emotions they experience are appropriate
- BUT, manifest their emotions significantly more than their age peers
- They are less likely to internalize emotions and cannot moderate them as well as others do.
- They appear less emotionally mature, more reactive, hot-tempered, and easily frustrated
- Hard for them to generate intrinsic motivation for tasks without immediate reward.

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

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, Cool Cognitive Network, Emotional Lability & Medication

- US study found between 38 to 75% of children/teens with AD/HD have comorbid emotional lability
- 10% of general population has this problem
- Emotional Lability in AD/HD = Hot Cognitive Network
  - Time blindness, reward response, reward frustration

NOT

- Cool Cognitive Network = Attention & Planning

- The more impaired by AD/HD and more comorbidities the more severe emotional lability
- The medications used for AD/HD may abate this somewhat

Childress, A.C. et al. (August 29, 2015). Emotional Lability in Patients with Attention-Deficit/Hyperactivity Disorder: Impact of Pharmacotherapy. CNS Drugs, 29(8), 683-693.

AD/HD and Negative Emotions

- **Study with 47 medicated adults with AD/HD compared to 41 unmedicated adults with AD/HD found:**
- **Unmedicated significantly more emotional reactions & higher emotional intensity**
- **(Negative emotions = heightened intensity and instability of irritability and frustration, and greater intensity of anger).**

Skirrow, C. et al. (December 2014). Everyday emotional experience of adults with attention deficit hyperactivity disorder: evidence for reactive and endogenous emotional lability. Psychological Medicine, 44(16), 3571-3583.

Adults with AD/HD & Deficient Emotional Self-Regulation (DESR)

US research compared 206 ADHD adults to 123 without AD/HD and found:

- **Those with ADHD significantly more Deficient Emotional Self-Regulation (DESR)**
- **DESR = Low Frustration Tolerance, Temper Outbursts, Emotional Impulsivity, Mood Lability**
- **55 of the AD/HD group had "Extreme DESR"/ higher than 95% of control group**
- **This was associated with:**
  - **Lower Marital Satisfaction**
  - **Significantly Worse Driving Records**
  - **More Arrests**

Surman, C.B. et al. (February, 2013). Understanding deficient emotional self-regulation in adults with attention deficit hyperactivity disorder: A controlled study. Attention Deficit Hyperactivity Disorders, DOI: 10.1007/s12402-012-0100-8.

AD/HD + DESR Treatment

- A recent literature review found:
- Psychostimulants have been found to significantly improve core AD/HD symptoms and emotional dysregulation
- Hence, it should be a first line treatment
- Atomoxetine is also effective
- There is some evidence that group therapy with AD/HD adults can be helpful in teaching emotional regulation skills – need more replication

- Treatment is also guided by what if any comorbidities are present.

Shaw, P. et al. (March, 2016). Emotional dysregulation and Attention-Deficit/Hyperactivity Disorder. American Journal of Psychiatry, 171(3), 276-293.

Mindfulness, AD/HD & DESR

Canadian literature review of 13 studies found:

- **Mindfulness training helped**
  - **Reduce AD/HD symptoms, problems with EF & deficits in emotional dysregulation in adults**
  - **This was especially true in those who under responded, or did not respond to medication**
  - **They noted almost every study had design flaw**

Poissant, H. et al. (2019). Behavioral and Cognitive Impacts of Mindfulness-Based Interventions on Adults with Attention-Deficit Hyperactivity Disorder: A Systematic Review. Behavioral Neurology. DOI: 10.1155/2019/5682050.

"Managing Affective Interference"

- 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
- Acknowledge negative feelings and offer encouragement
- Help them visualize and imagine what will happen when the task is done
- Raise awareness of what impacts their own ability to stay calm, engaged, and focused
- Ask and note what seems to impact their behavior such as noise, visuals, pace, etc.
- Reduce frustrating distractors
- Exercise breaks

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

AD/HD, Borderline Personality Disorder and Emotional Dysregulation

Swiss researchers compared adults with AD/HD to adults with Borderline Personality Disorder, adults with AD/HD and comorbid Borderline Personality Disorder and non-disabled adults and found:

- **Those with AD/HD had significantly more emotional dysregulation than the non-disabled**
- **Those with Borderline Personality Disorder had more emotional dysregulation than those with AD/HD**
- **Those with AD/HD and Borderline Personality Disorder had the most emotional dysregulation**

Rufenacht, E. et al. (July 18, 2019). Emotion dysregulation in adults suffering from attention deficit hyperactivity disorder (ADHD), a comparison with borderline personality disorder (BPD). Borderline Personality Disorder and Emotional Dysregulation, 6, article 11. DOI: 10.1186/s40479-019-0108-1.

AD/HD & “Hyperfocus”

Hyperfocus and the Adult with AD/HD

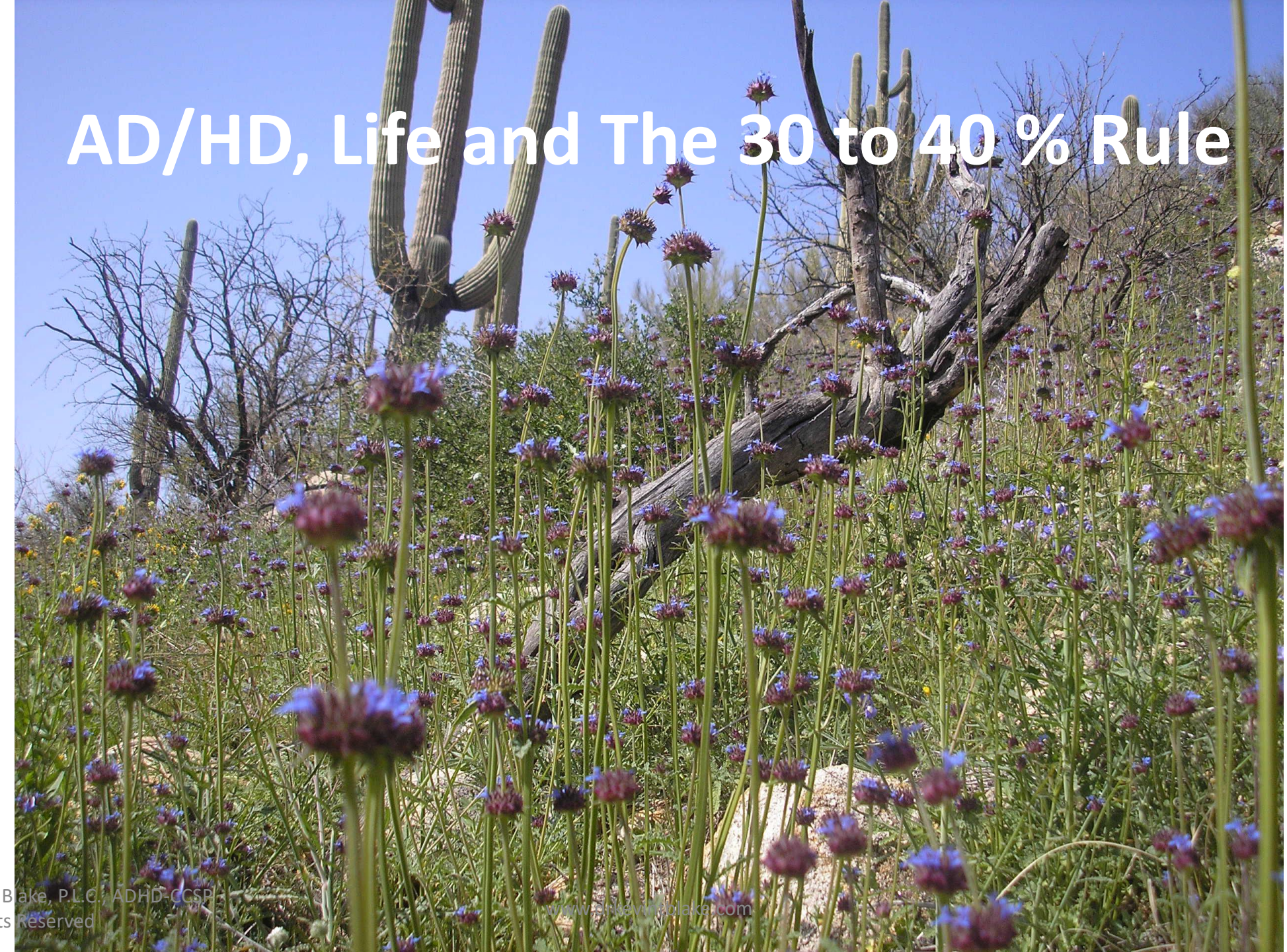
US researchers learned:

- **Adults with AD/HD with the most impairing symptoms had more hyperfocus episodes of more severe nature than those with less impairing AD/HD**
- **Found in "real life", school, hobbies, & screen time**
- **They concluded Hyperfocus is another symptom of AD/HD**

Hupfeld, K.L. et al. (June, 2019). Living "in the zone": Hyperfocus in adult ADHD. Attention Deficit Hyperactivity Disorder, 11(2), 191-208.

- **Use timers to help complete important tasks and chores**
- **Learn to set priorities and methodically complete them one at a time**
- **Get rid of distractions**
- **Ask others to turn off TV, etc.**
- **Tell others to call, text, etc. a certain times to break possible hyperfocus**

Barrell, A. (2019, July 8). "What to know about ADHD and hyperfocus." Medical News Today. Retrieved from website: https://www.medicalnewstoday.com/articles/325681.php.



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.

Driving and AD/HD

Researchers from the United States used an Assetto Corsa driving simulator and found those with AD/HD drove significantly faster, used the accelerator significantly more, applied significantly more pressure to the accelerator and break, than those without AD/HD. The scientists attributed this to impulsivity and mind wandering and continued by mentioning their results further confirm the literature regarding poor driving record and AD/HD.

Bernstein, J. et al. (April 12, 2019). Utility of a novel simulator paradigm in the assessment of driving ability in individuals with and without attention-deficit hyperactivity disorder. Attention Deficit Hyperactivity Disorder. DOI: 10.1007/s12402-019-00303-w. [Epub ahead of print].

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)**

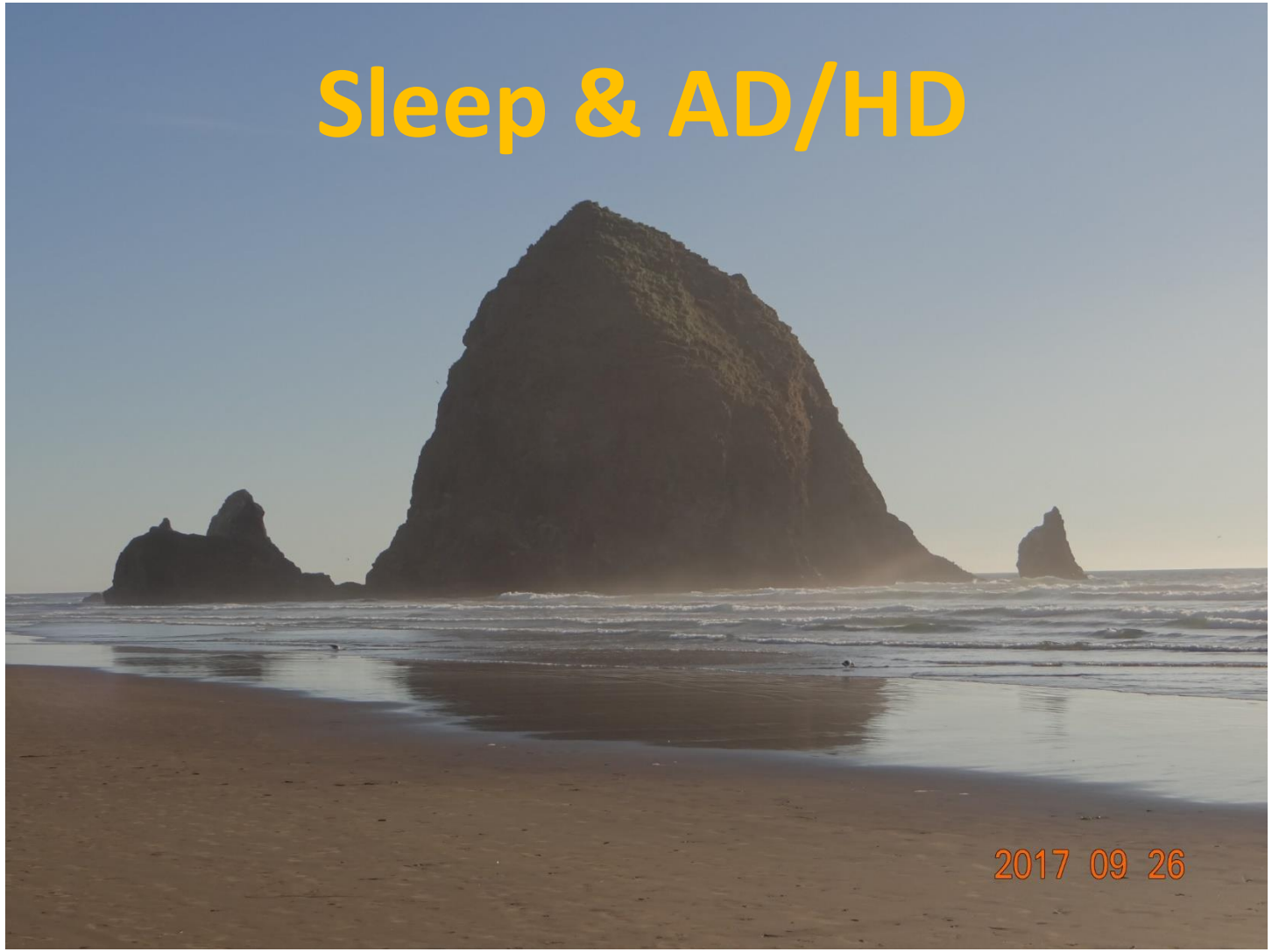
Demontis, D. et al. (November 26, 2018). Discovery of the first genome-wide significant risk loci for attention deficit/hyperactivity disorder. Nature Genetics. DOI: 10.1038/s41588-018-0269-7.

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/.

Sleep & AD/HD



Sleep Disorders and AD/HD

- 30 to 56% of those with AD/HD have sleep disorders
- 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.
- Significantly more problems with restless legs, etc.
- Sleep Hygiene, Sleep Clinic, Sleep Study

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. 28.

Bajorvatn, B. et al. (September 20, 2017). Adults with Attention Deficit Hyperactivity Disorder Report High Symptom Levels of Troubled Sleep, Restless Legs, and Cataplexy. Frontiers in Science. DOI: 10.3389/fpsyg.2017.01621.

Diaz-Roman, A. et al. (June, 2018). Sleep in adults with ADHD: Systematic review and meta-analysis of subjective and objective studies. Neuroscience and Biobehavioral Reviews. 89, 61-71. DOI: 10.1016/j.neubiorev.2018.02.014.

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) (How to normalize their experience – It is not a character flaw)**
3. **Medication (Step 3: Change Your Brain)**
4. **Accommodation: (Change Your Life – Rules for success)**

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

Your Tax Dollars at Work

The Multimodal Treatment Study of Children with Attention Deficit Hyperactivity Disorder

(MTA Study = Multimodal Treatment Assessment of AD/HD)

1999

Jensen, P.S., et al. (February, 2001). Findings From the NIMH Multimodal Treatment Study of ADHD (MTA): Implications and Applications for Primary Care Providers. Journal of Developmental and Behavioral Pediatrics, 22 (1), pp. 60-73.

The MTA Study

- Group 1: “Experimental Medication”
- Group 2: Behavior Modification Only (No Medication)
- Group 3: “Experimental Medication Plus Behavior Modification Group”
- Group 4: “Community Services”
  - The parents are told their child has Combined Type AD/HD and they are encouraged to go out to their community and get what services they want for their child…This was the “Control Group.”
    - Medication, aroma therapy, etc.

MTA Study

- **Medication Management Treatment Group did best with a 50% decline in symptoms.**
- **Medication with Behavioral Modification Group did no better.**
- **Behavior Modification Group did better than placebo.**
- **Community Treatment had only a 25% decline in symptoms.**
- **Medication helps with social interaction.**

Author (December, 1999). A 14-month randomized clinical trial of treatment strategies for attention-deficit/hyperactivity disorder. The MTA Cooperative Group. Multimodal Treatment Study of Children with ADHD. Achieves of General Psychiatry, 56(12), 1073-1086.

Author (December, 2009). The Multimodal Treatment of Attention Deficit Hyperactivity Disorder Study (MTA): Questions and Answers . Bethesda, MD: National Institute of Mental Health (NIMH). From website: https://www.nimh.nih.gov/funding/clinical-research/practical/mta/the-multimodal-treatment-of-attention-deficit-hyperactivity-disorder-study-mta-questions-and-answers.shtml.

MTA Study

"In that study (MTA Cooperative Group, 1999) psychosocial treatment alone was very poor compared to medication effects and psychosocial treatment with methylphenidate was no better than methylphenidate alone…Medication was found to reduce negative social interactions both by the treated children and by their peers toward the child with ADHD." (p. 55)

Semrud-Clickman, M. (2007). Social Competence in Children. New York, NY: Springer, p. 55.

AD/HD Persistence in Follow-Up Study of Subjects from the MTA Study

AD/HD symptom persistent individuals followed up 16 years after the MTA study were found to have significantly more times they were fired or quit a job, lower income, received more public assistance, and engaged in more risky sexual behavior than controls. Those who met criteria for AD/HD in childhood, but not in adulthood fell in between the two groups. The control group and those who "grew out of their AD/HD" were not different from each other in emotional lability, neuroticism, anxiety disorders, depression and substance abuse, but were far better than the AD/HD adult group.

Hecthman, R.A. et al. (November, 2016). Functional Adult Outcomes 16 Years After Childhood Diagnosis of Attention-Deficit/Hyperactivity Disorder: MTA Results. Journal of American Child and Adolescent Psychiatry, 55(11), 945-952e2. DOI: 10.1016/j.jaac.2016.07.774.

Roy, A. et al. (November, 2016). Childhood Factors Affecting Persistence and Desistence of Attention - Deficit/Hyperactivity Disorder Symptoms in Adulthood: Results From the MTA. Journal of the American Academy of Child and Adolescent Psychiatry, 55(11), 937-944.

German MTA Study of AD/HD

- **The Cologne Adaptive Multimodal Treatment (CAMT) study of AD/HD initially found the same results as the American MTA study and at the 18 month follow-up.**
- **The same was true of the German's 8 year follow up.**

Dopfner, M. et al. (February, 2015). Adaptive multimodal treatment for children with attention-deficit-/hyperactivity disorder: an 18 month follow-up. Child Psychiatry and Human Development, 46(1), 44-56. DOI: 10.1007/s10578-014-0452-8.

Dopfner, M. et al. (July 22, 2016). Long-Term Course After Adaptive Multimodal Treatment for Children With ADHD: An 8-Year Follow-Up. Journal of Attention Disorders. DOI: 10.1177/1087054716659138.

AD/HD Stimulant 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. Bone. DOI: 10.1016/j.bone.2018.09.023.

Long-Term Medication Treatment and Adult AD/HD

- **Recent research found with AD/HD adults between ages of 18 and 54:**
  - **Have structural changes in their cool EF network**
  - **This tends to indicate improvement in the EF system**
  - **This appears to be due to long-term stimulant medication treatment**
  - **This is another study that demonstrates stimulant medication treatment for AD/HD is 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.

Addictive Quality of Stimulants with AD/HD

- **Research and clinical reports indicate:**
  - **Methylphenidate *DOES NOT* lead to drug addiction**
  - **Stimulants *ARE NOT* addictive**
  - **Teens treated from childhood often stop taking their medication, or take less**
  - **There is no tolerance over time**
  - **Stimulant medication improves driving in those with AD/HD**

- **The main problem with teens with AD/HD taking stimulants is they tend to divert them to their peers**

Kooij, S.J.J. et al. (September 3, 2010). European consensus statement on diagnosis and treatment of adult ADHD: The European Network Adult ADHD, BMC Psychiatry. DOI: 10.1186/1471-244X-10-67.

GeneSight for AD/HD, & Mood Disorder: Controversial

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. As of June 2019 they do not do testing for AD/HD Medications.

- **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.**

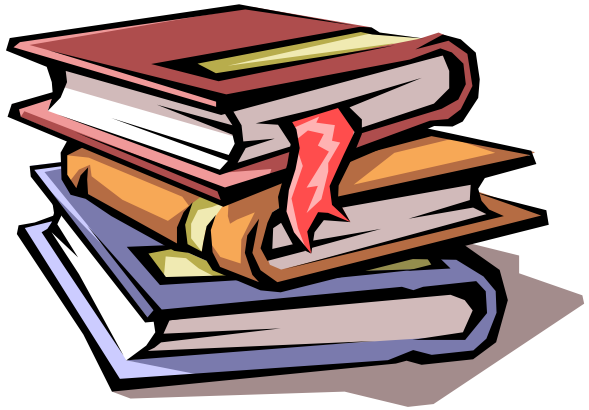
Author (April 19, 2019). FDA permits marketing of first medical device for treatment of ADHD. FDA News Release. From website: https://www.fda.gov/news-events/press-announcements/fda-permits-marketing-first-medical-device-treatment-adhd.

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.

Diagnosis

THE THREE MOST IMPORTANT THINGS IN DIAGNOSING AD/HD:

- ***HISTORY***
- ***HISTORY***
- ***HISTORY***



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.

Get Extensive Information From Collaterals

- Parents
- Significant Others/Spouses
- Employers
- Teachers/Professors
- Friends

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.

Diagnosing Adult AD/HD

- **Have them complete information relating to client's past and present history and behavior using:**
- **Checklists**
- **Questionnaires**
- **Semi-structured Interview**

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.

Mapou, R.L.(2009). Adult Learning Disabilities and ADHD: Research-Informed Assessment. New York, NY: Oxford University Press.

Why Use a Collateral in AD/HD Evaluations?

- **Follow-up studies of AD/HD children as adults:**
- **Interview Patient-5% still AD/HD**
- **Interview Parents-66.7% still AD/HD (Age adj. DSM)**
- **When both are compared to driving records, criminal records, insurance records, transcripts, interviews about social life, and employer interviews, the parents' reports correlate; patient's do NOT!**

- **Barkley, R.A. (2002) Mental and Medical Outcomes of AD/HD. Pre-Conference Institute, # TPA1, Thursday October 17, 2002, 14th Annual CHADD International Conference, Miami Beach, FL.**

"Nevertheless, the combined results of these studies suggest that agreement between self-reported information and that given by others about ADHD may increase with age and be of acceptable levels especially by the early 30s. Such information should not be trusted as reliable (agreeing with others), however, in those with ADHD in their teens and early 20s." (p. 127)

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

Instruments for AD/HD Dx

- Barkley Adult ADHD Rating Scale—IV (BAARS-IV)
- Barkley Deficits in Executive Functioning Scale (BDEFS for Adults)
- Barkley Functional Impairment Scale (BFIS for Adults)
- Barkley's Quick Check for Adult ADHD Diagnosis
- Adult Concentration Inventory (ACI)

Becker, S.P. et al. (March, 2018). Sluggish cognitive tempo in adults: Psychometric validation of the Adult Concentration Inventory. Psychological Assessment. DOI: 10.1037/pas0000476.

- Conners' Adult ADHD Diagnostic Interview for DSM-IV™
- Conners' Adult ADHD Rating Scales (CAARS)
- Brown Attention Deficit Disorder Scales for Adults (BADDS-A)
- For SCT Dx in adults Barkley recommends 6/9 inattentive symptoms from DSM-5 and major life impairment

DSM-5 Assessment Measures

- DSM-5 Self-Rated Level 1 Cross-Cutting Symptom Measure-Adult (p. 738-739)
- Parent/Guardian-Rated DSM-5 level 1 Cross-Cutting Symptom Measure-Child 5-17 (p. 740-741)
- Clinician-Rated Dimensions of Psychosis Symptom Severity (p. 743-744)

Author (May 18, 2013). Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). Washington, DC: American Psychiatric Association.

- World Health Organization Disability Assessment Schedule 2.0 (WHODAS2.0) (p. 745-748).
  - Self-Administered impairment rating in DSM-5.
- Barkley Functional Impairment Scale (For Adults)

Barkley, R.A. (February, 2011). Barkley Functional Impairment Scale. New York, NY: Guilford.

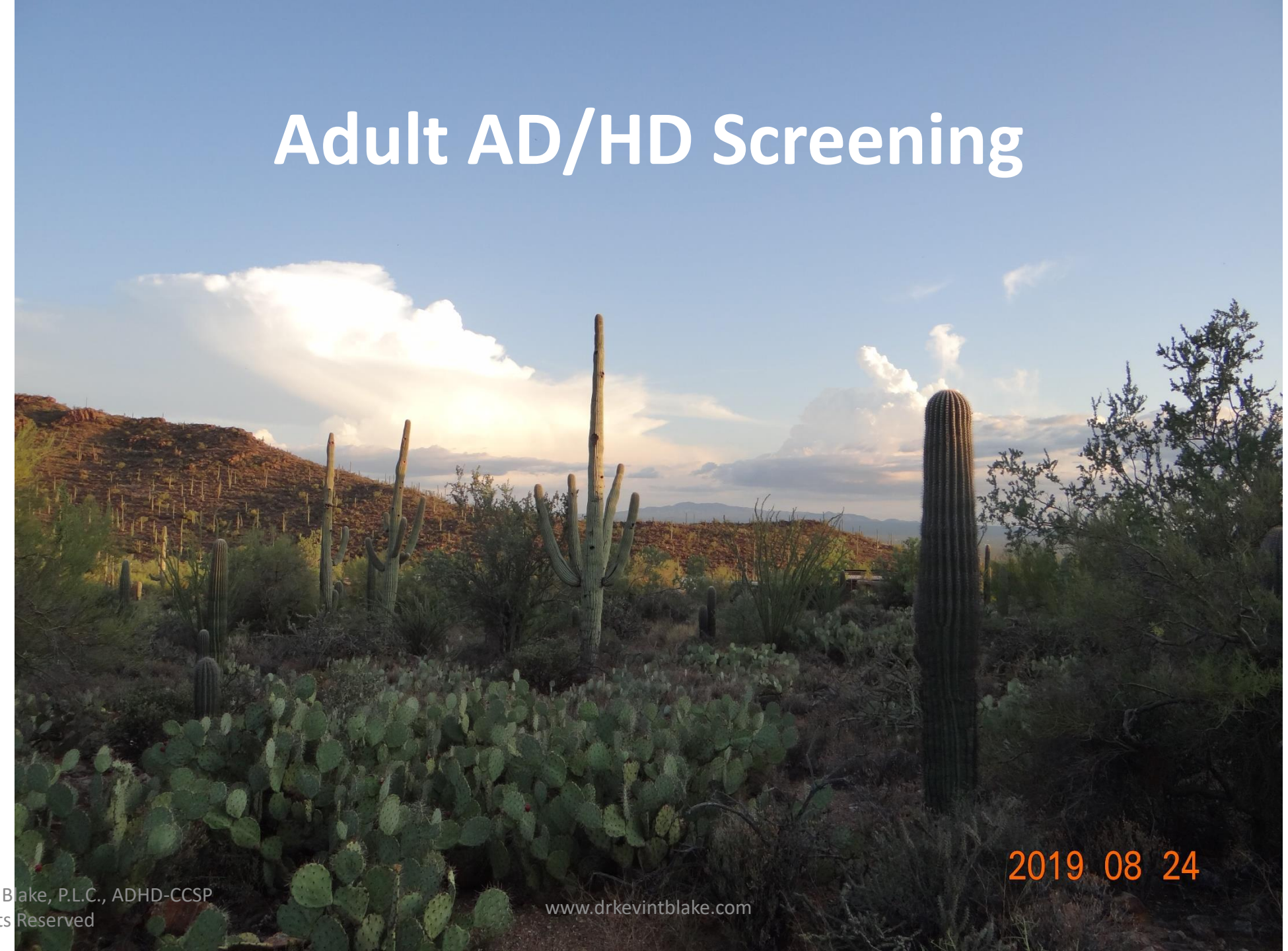
Diagnosing AD/HD

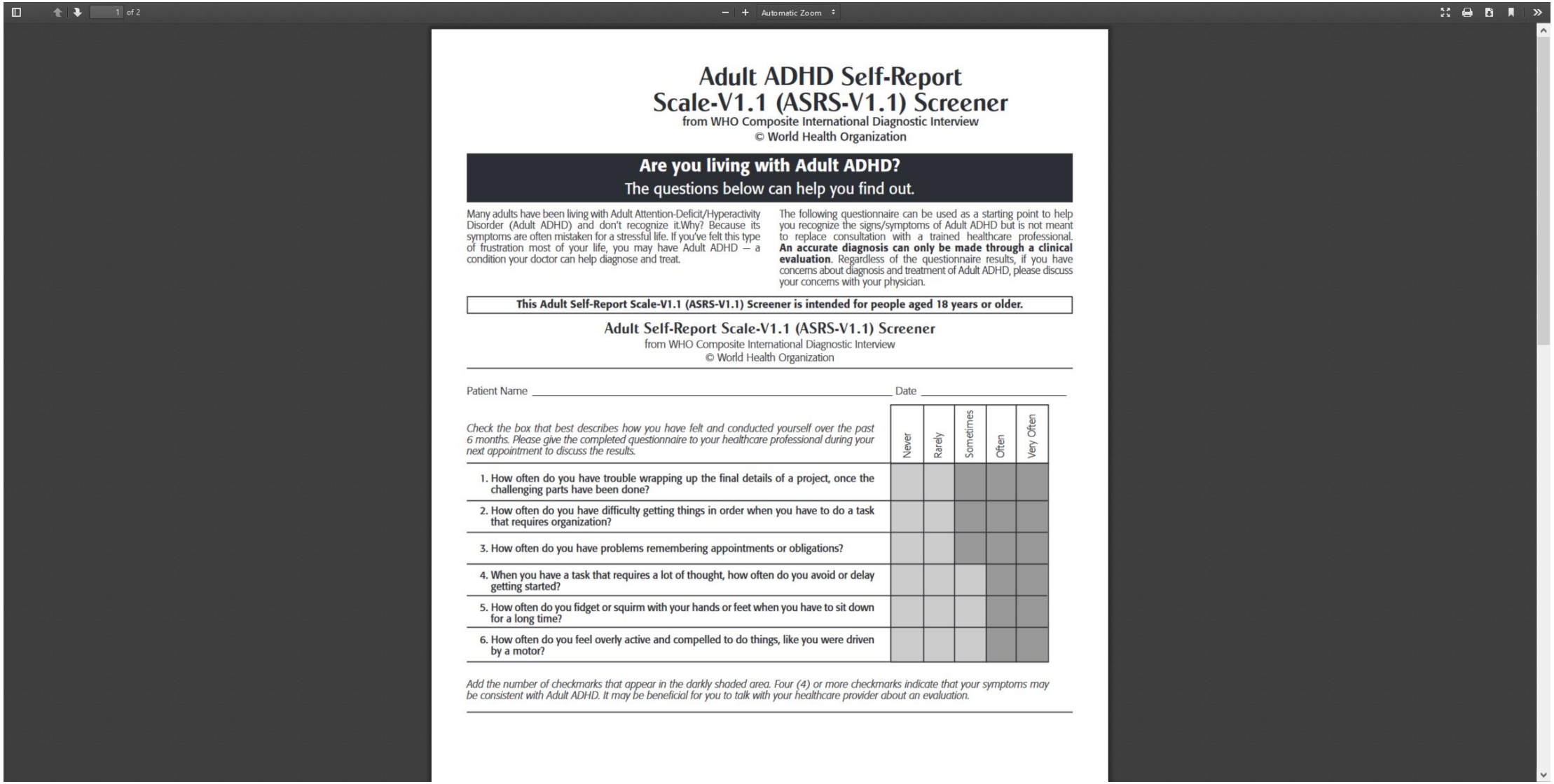
- Review Teacher's Comments on Past Report Cards
- Review Past Reports of Evaluations
- Contact Past Mental and Medical Health Professionals Who Worked with Client

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.

- Client Completes Questionnaires, and checklists about past and present history and behavior
- Client completes Inventory(s) to Screen Mental Health Status (i.e., SCL-90R, MMPI-2, etc.) Hamilton Depression/Anxiety; Beck Depression/Anxiety, etc.

Adult AD/HD Screening





Adult ADHD Self-Report Scale-V1.1 (ASRS-V1.1) Screener

from WHO Composite International Diagnostic Interview

Are you living with Adult ADHD?

The questions below can help you find out.

Many adults have been living with Adult Attention-Deficit/Hyperactivity Disorder (Adult ADHD) and don't recognize it.Why? Because its symptoms are often mistaken for a stressful life. If you've felt this type of frustration most of your life, you may have Adult ADHD — a condition your doctor can help diagnose and treat.

The following questionnaire can be used as a starting point to help you recognize the signs/symptoms of Adult ADHD but is not meant to replace consultation with a trained healthcare professional. **An accurate diagnosis can only be made through a clinical evaluation**. Regardless of the questionnaire results, if you have concerns about diagnosis and treatment of Adult ADHD, please discuss your concerns with your physician.

This Adult Self-Report Scale-V1.1 (ASRS-V1.1) Screener is intended for people aged 18 years or older.

Adult Self-Report Scale-V1.1 (ASRS-V1.1) Screener

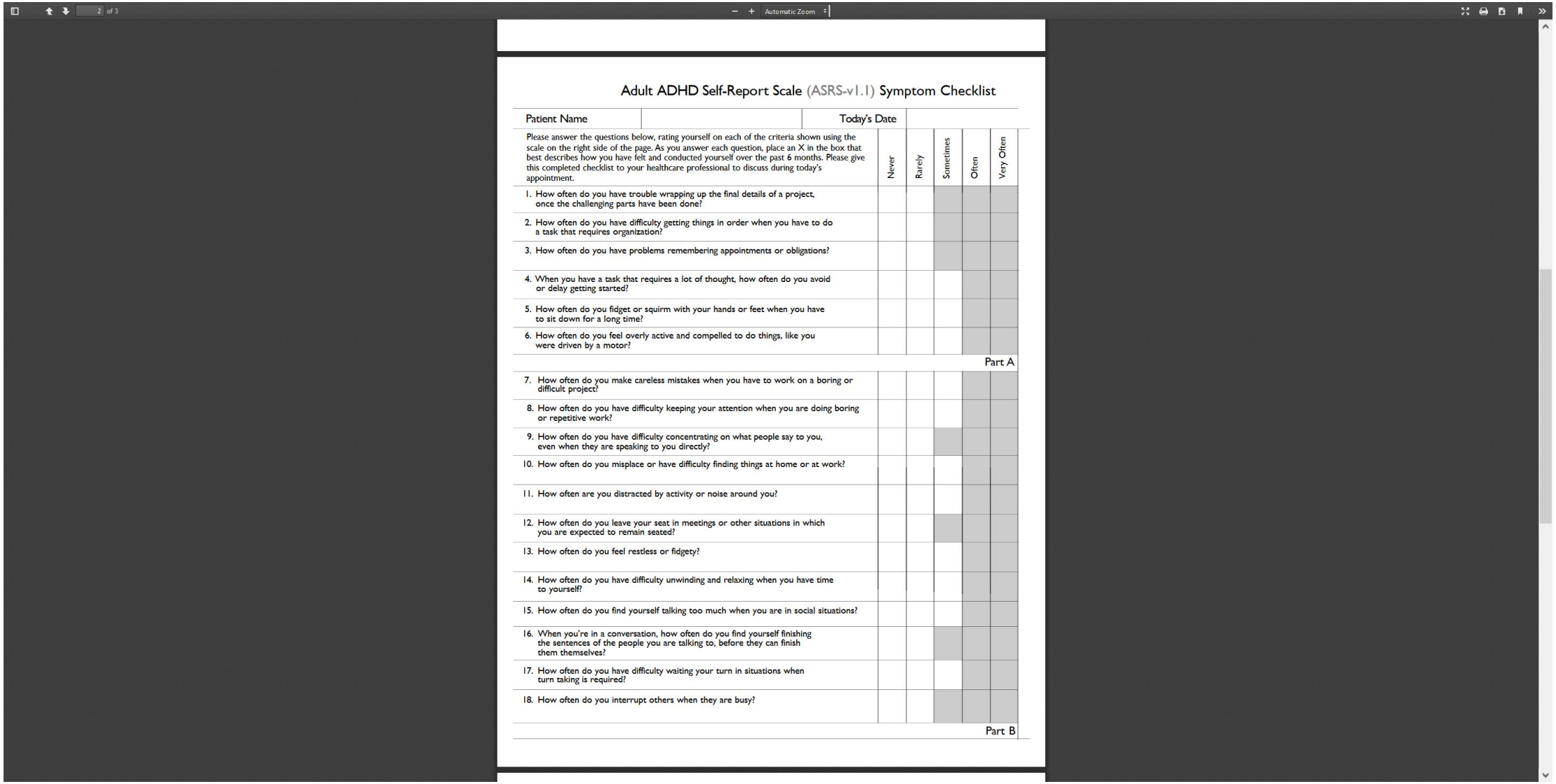
from WHO Composite International Diagnostic Interview

Patient Name _____ Date _____

Check the box that best describes how you have felt and conducted yourself over the past 6 months. Please give the completed questionnaire to your healthcare professional during your next appointment to discuss the results.

	Never	Rarely	Sometimes	Often	Very Often
1. How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done?					
2. How often do you have difficulty getting things in order when you have to do a task that requires organization?					
3. How often do you have problems remembering appointments or obligations?					
4. When you have a task that requires a lot of thought, how often do you avoid or delay getting started?					
5. How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?					
6. How often do you feel overly active and compelled to do things, like you were driven by a motor?					

Add the number of checkmarks that appear in the darkly shaded area. Four (4) or more checkmarks indicate that your symptoms may be consistent with Adult ADHD. It may be beneficial for you to talk with your healthcare provider about an evaluation.



Adult ADHD Self-Report Scale (ASRS-v1.1) Symptom Checklist

Patient Name		Today's Date	

Please answer the questions below, rating yourself on each of the criteria shown using the scale on the right side of the page. As you answer each question, place an X in the box that best describes how you have felt and conducted yourself over the past 6 months. Please give this completed checklist to your healthcare professional to discuss during today's appointment.	Never	Rarely	Sometimes	Often	Very Often
1. How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done?					
2. How often do you have difficulty getting things in order when you have to do a task that requires organization?					
3. How often do you have problems remembering appointments or obligations?					
4. When you have a task that requires a lot of thought, how often do you avoid or delay getting started?					
5. How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?					
6. How often do you feel overly active and compelled to do things, like you were driven by a motor?					
					Part A
7. How often do you make careless mistakes when you have to work on a boring or difficult project?					
8. How often do you have difficulty keeping your attention when you are doing boring or repetitive work?					
9. How often do you have difficulty concentrating on what people say to you, even when they are speaking to you directly?					
10. How often do you misplace or have difficulty finding things at home or at work?					
11. How often are you distracted by activity or noise around you?					
12. How often do you leave your seat in meetings or other situations in which you are expected to remain seated?					
13. How often do you feel restless or fidgety?					
14. How often do you have difficulty unwinding and relaxing when you have time to yourself?					
15. How often do you find yourself talking too much when you are in social situations?					
16. When you're in a conversation, how often do you find yourself finishing the sentences of the people you are talking to, before they can finish them themselves?					
17. How often do you have difficulty waiting your turn in situations when turn taking is required?					
18. How often do you interrupt others when they are busy?					
					Part B

The Value of Screening for Adults with ADHD

Research suggests that the symptoms of ADHD can persist into adulthood, having a significant impact on the relationships, careers, and even the personal safety of patients who may suffer from it.[1-4] Because this disorder is often misunderstood, many people who have it do not receive appropriate treatment and, as a result, may never reach their full potential. Part of the problem is that it can be difficult to diagnose, particularly in adults.

The Adult ADHD Self-Report Scale (ASRS v1.1) and scoring system were developed in conjunction with the World Health Organization (WHO) and the Workgroup on Adult ADHD, which included the following team of psychiatrists and researchers:

Lenard Adler, MD
Associate Professor of Psychiatry and Neurology
New York University Medical School

Ronald Kessler, PhD
Professor, Department of Health Care Policy
Harvard Medical School

Thomas Spencer, MD
Associate Professor of Psychiatry
Harvard Medical School

As a healthcare professional, you can use the ASRS v1.1 as a tool to help screen for adult ADHD patients. Insights gained through this screening may suggest the need for a more in-depth clinician interview. The questions in the ASRS v1.1 are consistent with DSM-IV criteria and address the manifestations of ADHD symptoms in adults. Content of the questionnaire also reflects the importance that DSM-IV places on symptoms, impairments, and history for a correct diagnosis.

The screener takes less than 5 minutes to complete and can provide supplemental information that is critical to the diagnostic process.

References:

1. Schweitzer, J.B., Cummins, T.K., Kant, C.A. Attention-deficit/hyperactivity disorder. *Med Clin North Am.* 2001;85(5):10-11, 757-777.
2. Barkley, R.A. *Attention deficit hyperactivity disorder: a handbook for diagnosis and treatment (2nd ed.).* 1998.
3. Biederman, J., Faraone, S.V., Spencer, T., Wilens, T., Norman, D., Lapey, K. A, et al. Patterns of psychiatric comorbidity, cognition, and psychosocial functioning in adults with ADHD. *Am J Psychiatry.* 1993;150:1792-1798.
4. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders, (4th ed., text revision).* Washington, DC. 2000:85-93.

Citation: Adult ADHD Self-Report Scale, Screener, Version-1.1

English:

http://naceonline.com/screening_tools/psych_adhd_screener-english.pdf#page=1&zoom=auto,-256,643

Spanish:

http://naceonline.com/screening_tools/psych_adhd_screener-spanish.pdf

Non-Medical AD/HD Treatments

Cogmed and AD/HD

Canadian researchers randomly assigned adults with AD/HD to one of two groups. One received working memory training from a fake copy of the Cogmed program the other group was exposed to the real program.

The group trained with the real program experienced improvement in their visual-spatial working and verbal working memories that were found to be maintained at six month follow-up. This was not seen in the control group. However, the treatment group's improvements did not generalize to their real life environment.

Dentz, A. et al (August 31, 2017). Working Memory Training for Adults With ADHD. Journal of Attention Disorders. DOI: 10.1177/1087054717723987.

Psychotherapy and AD/HD

"Those with AD/HD are Cueless Not Clueless"

Many years ago I heard Sam Goldstein, Ph.D. say this at the conference. By this he meant that those with AD/HD know what to do in social situations, etc. (they have the "Clue"), but they are so impulsive they do not pick up the "Cues" from their environment that tell them when to do what they already know how to do.

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

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.

Adult AD/HD, Cognitive Behavioral Therapy, and Medication

A group of Canadian and American scientists found that cognitive behavioral therapy (CBT) and medication controlled AD/HD symptoms in adults better than CBT alone. This included AD/HD symptoms, organizational abilities and self-esteem. However, over time the improvement over CBT alone was not as great.

Cherkasova M.V., et al. (October 6, 2016). Efficacy of Cognitive Behavioral Therapy With and Without Medication for Adults With ADHD. Journal of Attention Disorders. DOI: 10.1177/1087054716671197.

Psychotherapy and AD/HD

- **Adults with AD/HD:**
  - **Have been misunderstood & mistreated-Help them heal**
  - **Help them understand disability: strengths/weaknesses.**
  - **How the above affected school/work/social life**
  - **This is the "heart" of psychotherapy with AD/HD adults**

Wren, Carol and Einhorn, Jay (2000). Hanging by a Twig: Understanding and Counseling Adults with Learning Disabilities and ADD. New York, NY: W.W. Norton.

Substance Abuse and AD/HD

- **Cognitive behavioral therapy is helpful for adults with AD/HD with a history of substance abuse.**

Wilens, T.E., Spencer, T.J., and Prince, J. (1997). Diagnosing ADD in Adults. Attention!, 3 (4), pp. 27-33.

- **One to two months of sobriety suggested before medication treatment.**

Murphy, K.R. (2015). Psychological Counseling of Adults with ADHD. In R.A. Barkley (Ed.), Attention-Deficit Hyperactivity Disorder, Fourth Edition. New York, NY: Guilford, 741-757.

Indicators that AD/HD Adults will follow through with Treatment

Murphy said that AD/HD adults are more apt to follow through with treatment if:

- **They are taught to understand the disorder**
- **They are given a good explanation of what causes it**
- **They understand it is treatable**
- **They know there is hope for them**

Murphy, K.R., and LeVert, S. (1995). Out of the Fog: Treatment Options and Coping Strategies for Adult Attention Deficit Disorder. New York, NY: Hyperion.

Psychotherapy and AD/HD

Steps in Individual Counseling:

1. **Educate about AD/HD and set goals**
2. **Monitor progress, medication concerns, and treatment approaches**
3. **Teach self-management strategies**
4. **Teach how AD/HD can influence life decisions (+/-)**
5. **Self-knowledge – goodness of fit life decisions**
6. **Be an active pragmatic therapist**
7. **Provide specific training in time management, organizational skills, communication skills, anger control, etc.**

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

Psychotherapy and AD/HD

AD/HD Friendly Therapy Session

1. **Provide lots of structure**
2. **No rambling**
3. **Homework assignments**
4. **Memory aids for continuity (e.g., tape, notes)**
5. **Treat comorbidities**

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, pp. 220-254.

Comorbidity

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.

AD/HD with Comorbid "Specific Learning Disorder with Impairment in Reading Comprehension" (SLD/RC)

- Not Dyslexia: Weak phonemic awareness, slow rapid automatized naming, poor orthographic processing
- SLD/RC: Symptoms – Not being able to simultaneously visualize what they read
- AD/HD, Dyslexia & SLD/RC can be comorbid
- SLD/RC = Anomaly in left frontal gyrus, hippocampal, parahippocampal and prefrontal areas

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
  - Stimulant medication?
  - SQ4R: Survey Question Read (W)rite and Review
  - Nancy Bell: Visualizing and Verbalizing for Language Comprehension and Thinking
  - Referral to Speech-Language Therapist
  - Treat comorbid Dyslexia if present: multisensory synthetic phonics

Bell, N. (1991). Visualizing and Verbalizing for Language Comprehension and Thinking. San Luis Obispo, CA: Grander Educational Publishing.

Blake, K.T. (May/June,2000) "Two Common Reading Problems Experienced by Many AD/HD Adults." *Attention!*, 6 (5), pp. 30-33.

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.

- British population study of AD/HD+ASD adults
- The higher the inattention scores the more social and communication difficulties they had
- Conclusion: AD/HD and ASD may have "somewhat" common etiology

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 and Mood Disorders

- Brown found those with AD/HD have a 38.3% chance of having a mood disorder during their life.
- That is 5 times higher than the general population.

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

- Study in Spain with AD/HD adults:
  - Found their level of emotional lability in childhood predicted their adult impairment from AD/HD.
  - Suggested assessing "emotional lability" when assessing 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: 10.1177/108705417719534.

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 adult 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.

Personality Disorders and AD/HD

Brown indicated that 24.4% of those with AD/HD have at any one time a DSM-IV Cluster B disorder (Borderline, Antisocial, Histrionic and/or Narcissistic Disorder) compared to 9.3% of the general population.

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

- **Brown (2013) indicated 24.4% of those with AD/HD have comorbid DSM-IV Cluster C Personality Disorders (avoidant, dependent and/or obsessive compulsive disorders) compared to 9.5% of controls.**
- **Brown (2013) continued, there was no difference between controls and those with AD/HD in Cluster A Personality Disorders (paranoid, schizoid and/or schizotypal).**

ADHD and Criminality

- Those with AD/HD were found to have the following when compared t the general population in a recent study:
  - More physical aggression, substance abuse, aggression, sexual offenses, and property offenses
  - More birth problems and child abuse
  - When comorbid with Conduct Disorder even greater problems with behavior in those with intellectual disability

Lindsay, W.R. et al (December 18, 2012). The Impact of Known Criminogenic Factors on Offenders with Intellectual Disability: Previous Findings and New Results on ADHD. Journal of Applied Research In Intellectual Disabilities, 26(1), 71-80. From website: http://onlinelibrary.wiley.com/doi/10.1111/jar.12011/abstract

- Adults with AD/HD have been found to have lower rates of criminality when medicated.
- Medication could lower risk of criminality in those with AD/HD

Lichtenstein, P. et al. (November 22, 2012). Medication for attention deficit-hyperactivity disorder and criminality. New England Journal of Medicine. DOI: 10.1056/NEJMoa1203241.

Murphy, K.R. et al. (March, 2017). How Reliable Are Prevalence Rates of ADHD in Prisons? ADHD Report, 25(2), 1-5.

Substance Abuse and AD/HD

Being treated for AD/HD in childhood does not increase the likelihood of drug abuse in adolescence, or adulthood. In males it actually significantly reduces the risk of substance abuse.

Quinn, P.D. et al. (June 29, 2017). ADHD Medication and Substance-Related Problems. American Journal of Psychiatry. DOI: 10.1176/appi.ajp.2017.16060686.

American scientists found that they were directly able to predict the level of social and personal difficulties caused by alcohol use by college students with AD/HD, by their level of inattention, impulsivity/hyperactivity and impairment.

Elmore, A., et al. (April 26, 2017). Positive alcohol expectancies mediate associations between ADHD behaviors and alcohol - related problems among college students. Attention Deficit Hyperactivity Disorder. DOI: 10.1007/s12402-017-0231-z.

AD/HD and Sensory Perception

Dutch and German researchers found that children and adults with AD/HD have heightened sensitivity to smells, but lower levels of visual and speech perception than do their normally developing peers.

Hupen, P., et al. (April 11, 2017). Perception in attention deficit hyperactivity disorder. Attention Deficit Hyperactivity Disorder. DOI: 10.1007/s12402-017-0230-0.

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 Identity

The Adult LD/AD/HD "Identity"

Rodis offered the Seven Stages of Identity Formation for Persons with LDs:

1. **The Problem-Without-A-Name Stage**
2. **Diagnosis**
3. **Alienation**
4. **Passing**
5. **Crisis and Reconfrontation**
6. **"Owning and Outing"**
7. **Transcendence**

Rodis, P., Garrod, A., and Boscardin, M.L. (2001). Learning Disabilities and Life Stories. Boston, MA: Allyn and Bacon.

AD/HD Identity

- Those diagnosed with AD/HD in adulthood:
  - Often attribute their problems to characterological and moral defects-This is a high emotional cost
  - Underscores importance of reframing the disorder as a neurobiological difficulty, building self-esteem, & instilling hope
- Many AD/HD adults:
  - Find themselves socially rejected
  - Impulsivity, interrupting, forgetfulness, inattention, difficulty reading social cues, mood swings and temper problems
  - Often they report difficultly maintaining relationships

Murphy, K.R. (2006). Psychological Counseling of Adults with ADHD. In R.A., Barkley (Ed.), Attention-Deficit Hyperactivity Disorder, Third Edition. New York, NY: Guilford.

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

"Our study shows preliminary evidence for the effectiveness of mindfulness for children with ADHD and their parents, as rated by parents. However, in the absence of substantial effects on teacher-ratings, we cannot ascertain effects are due to specific treatment procedures." (p. 139)

Van der Oord, S. Bogels, S.M. And Peijnenburg, D. (February, 2012). The Effectiveness ofMindfulness Training for Children with ADHD and Mindful Parenting for their Parents. Journal of Child and Family Studies, 21(1), 139-147. From website: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3267931/.

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.

Canine Assisted Therapy and AD/HD

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 & 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 removal of 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.

Social Interaction and AD/HD

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

Adults with AD/HD and Emotional Intelligence

Newly diagnosed adults with AD/HD & comorbidities:

- **Had significantly lower emotional intelligence than those diagnosed in childhood**
- **Severity of AD/HD symptoms was not a factor**
- **Conclusion: Newly diagnosed adults need emotional intelligence training**

Quintero, J. et al. (October 3, 2017). The Impact of Adult ADHD in the Quality of Life Profile. Journal of Attention Disorders. DOI: 10.1177/1087054717733046.

AD/HD Women and Interpersonal Behavior

Recent literature review of women with AD/HD and their social interaction:

- **Ratio as many as 2 girls to 9 boys with AD/HD – In adults 1 to 1 females to males**
- **AD/HD women have earlier depression and more severe than nondisabled women**
- **Women with AD/HD experience more domestic abuse, self-injury, & suicide attempts than AD/HD men**

Women with AD/HD suffer significantly more…

- **Relational difficulties, much more risky sexual behavior, significantly more sexual partners, earlier intercourse, more unprotected sex, More STDs, more casual sex, more unwanted pregnancies, and parenting problems**
- **Than their non-impaired peers**

Babinshi, D.E. et al. (November 2016). The interpersonal Difficulties of Women with ADHD. The ADHD Report, 24(7), 1-8.

Social Interaction and AD/HD

- AD/HD individuals are less adept at interpreting the emotions of others and identifying their own emotions than are the non-disabled.

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

- Literature review of facial expression recognition in adults with AD/HD shows no improvement with age.

Borhani, K. et al. (February 2018). Emotional face recognition in individuals with attention-deficit/hyperactivity disorder: a review article. Developmental Neuropsychology. DOI: 10.1080/87565641.2018.1440295.

- AD/HD adults have deficits in their ability to identify facial expressions in others.
- AD/HD adults experience emotions more intensely.
- The more intense the emotion the worse they are at identifying facial expressions.

Rapport, L.J. et al. (July 2002). Experienced emotion and affect recognition in adult attention-deficit hyperactivity disorder. Neuropsychology, 16(1), 102-110.

- Baron-Cohen, S. (2003). Mind Reading: An Interactive Guide To Emotions. Philadelphia, PA: Jessica Kingsley.

Social Interaction and AD/HD

AD/HD individuals over-emote facial expressions. When medicated properly this is corrected. It is dose dependent. Even the AD/HD individuals say they emote what they want to when they see videos of themselves medicated.

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.

Romantic Relationships and AD/HD

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

Mirror Neurons

How does this relate to ADHD?

Barkley (2008) said that those with Combined Type AD/HD and comorbid Alexithymia typically have intact mirror neurons, they just do not use their mirror neurons due to their frontal lobe difficulties.

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.

- **AD/HD Combined Type men married less, reported interpersonal and sexual problems, had general difficulties with socialization, difficulties with heterosocial responses and problems with assertiveness (Weiss and Hechtman, 1993)**
- **Those with AD/HD often have problems with emotional regulation. This causes problems, too.**

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

Canu, W.H. and Carlson, C.L. (April, 2004). ADHD and Social Adaptation: From Childhood to Adulthood. ADHD Report, 12(2), 1-5.

Romantic Relationships and AD/HD

American scientists found those with AD/HD had significantly more difficulty with romantic relationships than their non-impaired peers. Inattentive symptoms were related to seeking new relationships (wandering eye) and less constructive behavior during arguments. Hyperactivity and impulsivity was related to poor arguing behavior also.

VanderDrift, L.E. et al. (May 10, 2017). Inattention and Hyperactivity-Impulsivity: Their Detrimental Effect on Romantic Relationship Maintenance. Journal of Attention Disorders. DOI: 10.1177/1087054717707043.

Social Interaction Difficulties

- Incessant talking and talking in circles
- Poor listening
- Little pragmatics, if any
- No mental filter; in the brain out the mouth
- Etiquette failures

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 Assissted 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.

- Problems reading and making facial expressions accurately
- Problems making and reading body language accurately
- Poor perception of verbal tone
- Quick to anger

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

Kuhle, H.J., Hoch, C., Rautzenberg, P. and Jansen, F. (2001). Short-Term Video-Based Observation of Behavior with Special Reference to Eye-Contact, Facial Expression and Motor Activity in Diagnosis and Therapy of Attention Deficiency/ Hyperactivity Syndrome (ADHS). (First Published in): Praxis der Kinderpsychologie und Kinderpsychiatrie 50: 607-621. Obtained from: Kuehle, H. (October 17, 2002). Video Assissted 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.

Intimate Relationships and AD/HD

- **Problems Often Caused by AD/HD**
  - **4 to 5 times more likely to have poor dating relationships**
  - **Twice as often have poor marital relationships**
  - **Extramarital affairs**
  - **Dominating conversations**
    - **No give and take in conversations**
    - **Not listening**
    - **Tactless**
    - **Fail simple social etiquette**
  - **Lack persistence**
  - **Impulsive**
  - **Avoid multi-step task-can look selfish**
  - **Reliably unreliable**
  - **Poor reading of body language and/or facial expressions**

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

Helpful Suggestions

- Do your share of chores
- Listen:
  - Learn active listening skills*
- Remember important dates and appointments
- Be you "Best Self"
- Remember what is hurtful and helpful
- Count to 10
- Be courteous and use manners

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

5 Factors to address in marital therapy:

1. Family of origin issues
2. Skills deficits
3. Amount of impairment
4. Cognitive distortions
5. Comorbidity

*Intimacy?

Pera, G. (2014). Counseling Couples Affected by Adult ADHD. In R.A. Barkley (Ed.), Attention-Deficit Hyperactivity Disorder, Fourth Edition, 795-825.

Parenting

- Take care of self and your AD/HD
- Think of child first
- Control your emotions. Remember children are not neurologically good at doing this.
- Give your child time to put their thoughts into words.
- Learn give and take skills.

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

- Reward you child more.
- Use a timer to check I on your child.
- Write down family rules and "fridge post" them. Refer to them in heated moments.
- Consequences are stated before infraction.
- Take a parenting class.
- Know when you are overwhelmed and put yourself in time out.
- Time away for kids every week.

Academic Accommodations for College Students with AD/HD

College Accommodations and AD/HD

"Treat them like a 13 year old."

1. **SMALLER CLASSES**
2. **Fewer Classes**
3. **Hand pick faculty**
4. **More curricular materials like videos and handouts**
5. **Studying with older student who already took the course perhaps**
6. **Taking five years to complete a B.A. rather than four."**

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.

College Accommodations and AD/HD

1. Formal Tutoring
2. Attending all faculty extra help sessions
3. Taking a time management seminar
4. Taking advantage of disability support services
5. Individual psychotherapy

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.

6. Alternative method exams
7. Get an AD/HD coach
8. Ask faculty to post assignments weekly on website
9. House in a substance-free dorm
10. Career counseling several years before graduation

➢No extended time, but breaks

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

Employment

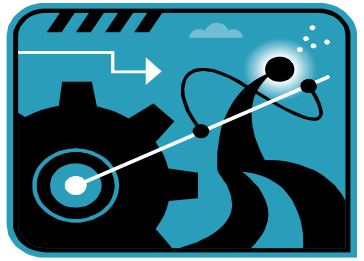
Occupational Status and Failure of AD/HD Adults

Norwegian research of 1050 adults with AD/HD found:

- **Being employed related more to being male, cohabitating, having children and no depression**
- **Being employed if AD/HD is related to:**
  - **History of depression, social skills, comorbid psychiatric disorders and education**
- **Recommended:**
- **Treatment of AD/HD from childhood into adulthood**
  - **To help prevent comorbid mental disorders and educational outcome**
- **This will also make them more resilient to depression**

Anker, E et al. (June, 2019). Work participation in ADHD and associations with social characteristics, education, lifetime depression, and ADHD symptom severity. Journal of Attention Disorders, 11(2), 159-165.

AD/HD and Employment



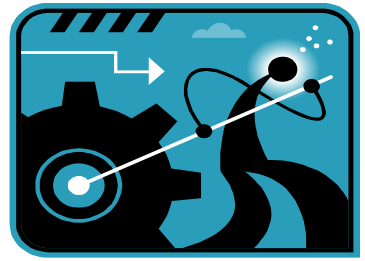
Difficulty with others is one of the main reasons AD/HD adults loose their jobs.

Ratey, N., and Griffith - Haynie, M. (1998). Coaching to Improve Workplace Performance. Paper presented at the Fourth Annual ADDA Adult ADD Conference, March 26-28, Washington, DC.

One-half of AD/HD adults are unemployed.

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

Employment & ADHD



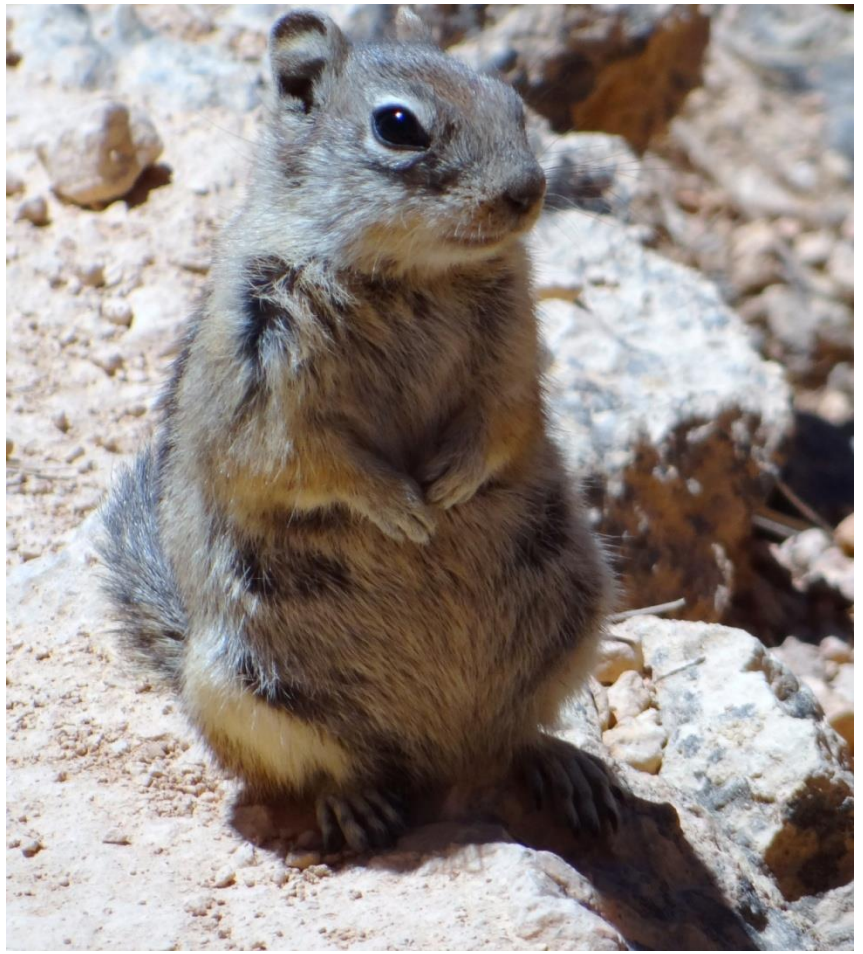
- ADHD workers have significantly lower salaries.
- They are absent from the job more and significantly more underproductive than non-ADHD workers.
- They have more on the job accidents.
- On average ADHD costs the household $10,000 per year of income.

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

A 33 year follow-up study of boys diagnosed with AD/HD, now adults found they were 6 times more likely to be homeless than their non-impaired peers. Approximately, 24% of these AD/HD men were homeless.

Murillo, L.G., et al. (November, 2016). Childhood Attention-Deficit/Hyperactivity Disorder and Homelessness: A 33-Year Follow-Up Study. Journal of the American Academy of Child and Adolescent Psychiatry, 55(11), 931-936.

Barkley's Recommendations for Employers of Adults With AD/HD



Barkley's Recommendations for Employers of Adults With AD/HD

1. Understand AD/HD is a neurobiological disorder
2. AD/HD Adults have a deficit in self-regulation compared to others
3. AD/HD employees need directions spoken and written for them
4. AD/HD employees have *time blindness* and need external time reminders
5. Long-term projects need to be broken down into many short-term projects
6. AD/HD employees need to check in with bosses much more than others
7. Working in teams can help them stay on task
8. AD/HD adults may do better with self-employment, commission work, and hourly wages
9. The AD/HD adult can set up their own *self-reinforcement"* system
10. AD/HD adults tend to do better with physical work and work with social interaction

Barkley's Recommendations for Employers of Adults With AD/HD

11. AD/HD adults do poorly at tedious, boring and repetitive work. They do better with variety.
12. Often they do not do well in team leadership positions due to their impulsivity
13. Some AD/HD adults may need vocational assessment and counseling
14. Some may need an AD/HD coach and/or professional organizer
15. Research has shown many with AD/HD are more alert in the mid-afternoon and evening; second shift work may work better
16. Frequent short breaks and having a non-distracting work environment may be helpful
17. Using sound suppression and/or music to block out distracting noise can help
18. Encourage them to take medication if it has been found to be helpful for them
19. Give reasonable accommodations under ADAAA

Barkley, R.A. (March, 2013). Recommendations for Employers Concerning the Management of Employees with ADHD. ADHD Report, 21(2), 6-7, 13.

Work & AD/HD

Work, AD/HD, & EF

- AD/HD symptoms are often more damaging in work environments than school
  - Particularly for those with significant hyperactive symptoms
  - If you have hyperactivity stay away from desk jobs; move!
  - Medication
- Accept your AD/HD and seek "outside help"
  - Life Coach, Vocational Counselor with knowledge of AD/HD
- Hyper-organize your day:
  - Time-management in small chunks
  - Keep all distractions to a minimum: Sight, Sound, Touch, Smell, Temperature, etc.
  - Publically display in bright colors your to do list
  - Keep social distractions to a minimum: Close door, Block people from coming in, check texts, voicemail, e-mail three times a day for 5 minutes.

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

Work, AD/HD, & EF

- Organize materials for work so they are easily found:
  - Everything has a home
  - Everything so it can be seen (e.g., clear files, etc.
  - Consult with a professional organizer; periodically
- Externalize time for time blindness
  - Clock on wall (chime?)
  - Smart devices
  - Have someone check on you
  - Journal time
- Questions for job interview:
  - "How long should it take me to finish X Task?"
  - "How much advanced notice will I get regarding deadlines?"
  - "How often will I check in with supervisor?"
  - "How do you want reports?"
  - "Will I be on a team, or by myself?"
- A job with built in rewards for merit will work best.

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

Work, AD/HD, & EF

- During interview learn:
  - As much as possible about your supervision on the job:
    - Face to face?
    - Every day?
    - Phone/e-mail/text
    - How often will see supervisor?

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

- Should I disclose my disability, or not?
  - Will I need accommodations on the job, or not?

If yes, learn as much about the Americans with Disabilities Act, Amendment Act 0f 2008 as possible:

- National Disability Rights Network (How to find Disability Law Centers in Your State): www.ndrn.org
- Contact Company's Disability expert in HR?

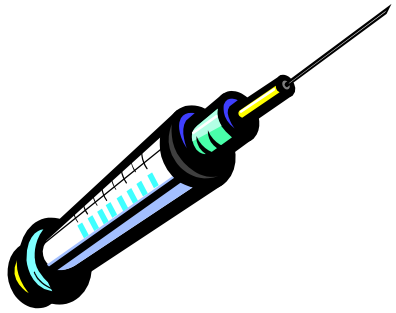
Work, AD/HD, & EF

- Ask for help from a coworker when new learning is needed
- Find someone who is good at what you are bad at and offer to help them with something you are good at.
- Volunteer to learn more about your job:
  - Helps you with job
  - Shows boss you want to do well
- If you have long meeting take long walk before and take notes during meeting
- Schedule performance reviews every 3 to 6 weeks

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

Workplace Accommodations

1. More accountability to others
2. Shorter term goals
3. Externalize time
4. Report many times a day on tasks
5. Medication (drug screening issue, too)



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.

Vocational Counseling and AD/HD

Vocational Counseling and AD/HD

"…the most important functions in career counseling with ADD/LD adults is to rebuild self confidence and self-esteem following their prolonged academic struggles and years of facing the prejudices of educators and employers." (p. 312)

Nadeau, K. (1995). A Comprehensive Guide to Attention Deficit Disorder in Adults: Research, Diagnosis, and Treatment. New York, NY: Routledge.

Lack of education gets in the way of ADHD adults career wise. Usually the more *exciting* jobs require a better education.

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

Vocational Counseling and AD/HD

Things to Consider in AD/HD Career Evaluation:

1. **Difficulty with transitions**
2. **Difficulty with time management**
3. **Difficulty with disorganization**
4. **Difficulty with self-image**
5. **Difficulty with others**

6. **Lack of understanding of AD/HD**
7. **Inconsistency**
8. **Lack of self-management**
9. **Lack of self-advocacy**
10. **Lack of job life skills**

Ratey, N., and Griffith - Haynie, M. (1998). Coaching to Improve Workplace Performance. Paper presented at the Fourth Annual ADDA Adult ADD Conference, March 26-28, Washington, DC.

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.

Workplace Accommodations

Job Accommodations Network

P. O. Box 6080

Morgantown, WV 26506-6080

Voice/TTY (in US): 1-800-526-7234

Voice/TTY (Worldwide): 1-304-293-7186

Fax: 1-304-293-5407

E-mail: jan@jan.icdi.wvu.edu

Web: www.jan.wvu.edu/english/

- **U.S. Equal Employment Opportunity Commission**

  1801 L Street, NW

  Washington, DC 20507

  www.eeoc.gov

- **Office of Civil Rights**

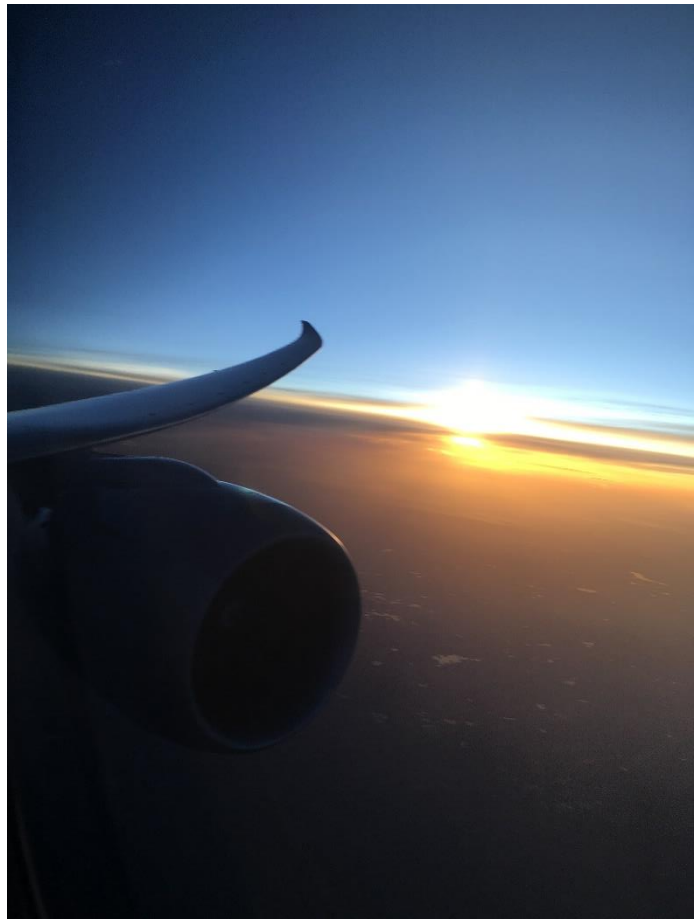
  Department of Health and Human Services

  200 Independence Avenue Southwest

  Washington, DC 20201

  www.hhs.gov/ocr/office/index.html

Thank You!



- Kevin T. Blake, Ph.D., P.L.C.
- Office: 520-327-7002
- E-mail: kblake@drkevintblake.com
- Fax: 520-795-3575
- Mail: 5210 East Pima, Suite 200, Tucson, AZ 85712