



ATTENTION-DEFICIT/HYPERACTIVITY DISORDER:

RESEARCH INFORMED TREATMENT USING THE MULTI-TIERED SYSTEM OF MENTAL HEALTH SUPPORTS

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SPEAKER DISCLOSURES

Drs. Bernstein and Tresco have NO actual or potential conflict of interest to disclose in relation to this program or presentation.



OBJECTIVES

- Identify evidence-based, complementary, and integrative approaches to support school success for children with ADHD
- Discuss how school-based interventions for ADHD fit within educational contexts such as MTSS and educational law
- Describe how mental health and school-based professionals can collaborate to improve access to, and implementation of, interventions for children with ADHD



DEVELOPMENTAL PROGRESSION

- Hyperactivity
 - Often more pronounced in preschool
 - Tends to decline with time
- Inattention
 - Often become more pronounced with age
 - Tasks in later elementary and on require more independent planning and integration of previously learned skills



IMPAIRMENTS ASSOCIATED WITH ADHD

- Comorbid Diagnoses (don't forget Test Anxiety!)
- Behavioral Impairment
- Social Impairment
- Self-regulation
- Executive Function



INTERVENTIONS

- Attention and Behavior
- Organization
- Social Performance
- Academic Competence
- Self Regulation



BEHAVIOR THERAPY





THE A-B-C' S OF BEHAVIOR

A - B - C

ANTECEDENTS

What occurs
before the
behavior

BEHAVIOR

Observable
and
Measurable

CONSEQUENCES

What occurs *after*
the behavior



CONSEQUENCES

Reinforcement

Increases future behavior

**Results in
learning and
performance
of a skill**

Negative Reinforcement

Take away something that makes them
unhappy

Punishment

Decreases future behavior

**Reduces
occurrence of
problematic
behavior**

Negative Reinforcement

Take away something that makes them
happy



ACQUISITION VERSUS PERFORMANCE

- Acquisition Deficits – “can’t do”
 - Lack of knowledge on how to perform a skill
 - Inability to fluently display a sequence of behaviors
 - Difficulty selecting situation specific appropriate behaviors)
 - Lack of social-cognitive abilities
- Performance Deficits – “won’t do”
 - Failure to acceptably perform in a given situation
 - Child knows how to perform the skill
 - Motivation or performance problems, not a failure to learn



MAXIMIZING BEHAVIORAL INTERVENTION SUCCESS

- Consistency
- Immediacy
- Specificity
- Saliency
- 4:1 ratio of Positive Reinforcement to Punishment



MAXIMIZING BEHAVIORAL INTERVENTION SUCCESS

Clear and Precise Commands (Neutral Tone)

Positive Reinforcement (Praise, Attention, Reward)

Response Cost System

Frequent and Clear Communication between Home and School



DAILY REPORT CARD (DRC) HOME SCHOOL NOTE

- Combines Antecedent and Consequent Strategies
- Teacher provides ratings on a daily basis on one or more target behaviors (3 to 5 typical)
 - Examples, Completes work, followed rules, etc.
- Provides communication between home and school
 - Daily report is sent home to parents
- Parents provide reinforcement based for goal attainment
- Teachers/school personnel may also provide reinforcement at school



ADAPTIVE BEHAVIOR TARGET FOUNDATIONS

- **ATTAINABLE**
 - Unattainable targets set children up for failure
 - Lack of achieving targets and rewards will impact how effective the behavioral system will be
- **Phrased Positively**
 - Tell what to DO, not what not to do – state positively!



ADAPTIVE BEHAVIOR TARGET FOUNDATIONS (CONT)

- Involve Active Responding
 - Appropriate examples: completion of tasks, accuracy on work, participating in class discussions, getting along with others
 - Inappropriate examples: sit still, stay on-task, don't call out, don't fight
 - “dead person rule” - If a dead person can do it, it's NOT a good target behavior for intervention



EXTENSIONS OF BEHAVIORAL PRINCIPLES TO NON-CLASSROOM SCHOOL-BASED INTERVENTIONS

- Playground (Leff et al., 2004)
 - Structure activities
 - Increased supervision
- Lunchroom (Fabiano et al., 2008; McCurdy, et al., 2009)
 - Group Contingency Approach
 - Extension of Good Behavior Game



ADHD & ACHIEVEMENT

- Students with ADHD experience significant academic underachievement
- Increased likelihood for retention and dropout



ACADEMIC INTERVENTION FOR ADHD

- Instructional Match
- Active Participation
- Goal Setting
- Peer Tutoring
- Computer Assisted Strategies

Summary in Power, Tresco, & Cassano, 2009



HOMework AND CLASSWORK INTERVENTION

- Antecedent modification and contingency management
 - Antecedent –
 - Consistent start time and time limits
 - Consistent location
 - Assignment book
 - Consequences –
 - positive reinforcement for work completion and accuracy
- *Goal setting* - Parent/Teacher and child collaborate to:
 - 1. Establish realistic homework/classwork goals
 - 2. Evaluate performance
 - 3. Provide positive reinforcement



ADDITIONAL CONCEPTUAL FOUNDATIONS

- Link Assessment Data to Intervention
- Intervene at Point of Performance
- Combine Antecedent and Consequent Interventions
- Combine Academic and Behavioral Interventions
- Use Multiple Intervention Agents
- Individualize Interventions
- Encourage pro-social/adaptive behavior and skill development



ADHD AND SPECIAL EDUCATION LAW: IDEA

- Individuals with Disabilities Education Act (IDEA, P.L. 94-142), most recently reauthorized in 2004
 - ADHD -eligible under ‘Other Health Impaired’ (OHI) category
- Individualized Education Plan (IEP)
- Diagnosis NOT sufficient to receive services under IDEA 2004



ADHD AND SPECIAL EDUCATION LAW: SECTION 504

- Section 504 of the Rehabilitation Act of 1973 (Section 504)
 - Civil Rights Act providing for “reasonable accommodations” to ensure equal access to programs and opportunities
- To qualify – physical or mental impairment that substantially impacts a major life activity
- Accommodations are typically less resource intensive than those provided by an IEP under IDEA



TIERED SYSTEMS OF SUPPORT & ADHD

- Universal
 - Typically not sufficient
- Secondary
 - For some; possible 504 plans
- Tertiary
 - Most common; individualized; IEP typical



REMEMBER...

- It's Just Behavior
 - Its not personal... students engage in problem and appropriate behaviors to get needs met
- Behavior is Learned
 - What you see is the result of risk factors within children's past learning history (poverty, disability, academic failure, language, culture....)



REMEMBER...

- Research continues to demonstrate the most effective strategies are instruction based
 - Teach “what you want them to do instead”
 - Focus on academic and social success in terms of **linear** growth, not absolute
- Pause, step back, and smile
 - The most effective strategies will fail to impact students in the absence of sincerity, respect, and obvious joy in teaching



RESOURCES FOR SCHOOL-BASED PSYCHOSOCIAL INTERVENTIONS FOR ADHD

- DuPaul, G.J., Eckert, T.L., & Vilaro, B. (2012). The effects of school-based interventions for Attention Deficit Hyperactivity Disorder: A meta-analysis 1996-2010.
- Evans, S.W., Owens, J.S., & Bunford, N. (2014). Evidence-based psychosocial treatments for children and adolescents with attention-deficit/hyperactivity disorder. *Journal of Clinical Child & Adolescent Psychology*, 43, 527-551.
- Fabiano, G.A. Pelham Jr, W.E., Karmazin, K., Kreher, J., Panahon, C.J., & Carlson, C. (2008). A group contingency program to improve the behavior of elementary school students in a cafeteria. *Behavior Modification*, 32, 121-132.
- McCurdy, B.L., Lannie, A.L., & Barnabas, E. (2009). Reducing disruptive behavior in an urban school cafeteria: An extension of the Good Behavior Game. *Journal of School Psychology*, 47, 39-54.
- Leff, S.S., Costigan, T. & Power, T. (2004). Using participatory research to develop a playground-based prevention program. *Journal of School Psychology*, 42, 3-21.
- Power, T.J., Tresco, K.E., & Cassano, M.C. (2009). School-based interventions for children with ADHD. *Current Psychiatry Report*, 11, 407-414.
- Tresco, K.E., Lefler, E.K., and Power, T.J. (2010). Psychosocial Interventions to Improve the School Performance of Students with Attention-Deficit/Hyperactivity Disorder. *Mind & Brain, The Journal of Psychiatry*, 1, 69-74.



COLLABORATIVE AND INTEGRATIVE APPROACHES TO ADHD

- Dr. Bernstein has nothing to disclose
- No Big Pharma money in this talk!



APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD

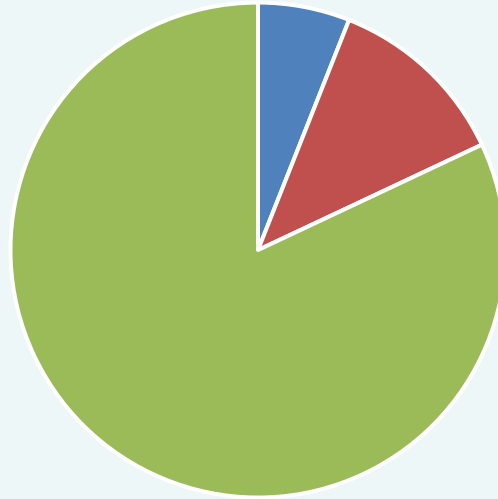




APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD

The 2007 and 2011 National Children's Health Interview Survey
<https://www.cdc.gov/nchs/slait/nsch.htm>

For those responding to survey
ADHD med 6 % (big pharma money)
CIMED in 12% of children (no big money yet)



■ ADHD med ■ CIMED ■ no treatment ■



APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD

Interventions should ideally be:

- Resilience Promoting
- Universally/Culturally Acceptable
- Safe/Effective
- Easy/Accessible
- Lessen stigma/not promote anxiety or stress

Dray J, Bowman J, Wolfenden L, Campbell E, Freund H, Hodder R, Wiggers J. Systematic review of universal resilience interventions targeting child and adolescent mental health in the school setting: review protocol. *Syst Rev.* 2015 Dec 29;4:186. doi: 10.1186/s13643-015-0172-6.



APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD: COLLEGIAL

- Respect across disciplines
- Time for Communication
- Shared Language
- Cultural Competence
- Aware of Parental Pressures

Herman KC, Reinke WM, Bradshaw CP, Lochman LE, Borden L, Darney D. Increasing Parental Engagement in School-Based Interventions Using Team Engagement and Motivation Methods. Pages 223-236 in Ed. Weist MD, Lever NA, Bradshaw CP and Owens JS (2014) Handbook of School of School Mental Health, Second Edition. .Springer: New York.



APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD: LEAD IS TOXIC

- Lead Free Water +
- Low Stress Prenatal +
- Adequate Nutrition =

Lower rates of ADHD - Especially for boys!

Ji Y, Hong X, Wang G, Chatterjee N, Riley AW, Lee LC, Surkan PJ, Bartell TR, Zuckerman B, Wang X. A Prospective Birth Cohort Study on Early Childhood Lead Levels and Attention Deficit Hyperactivity Disorder: New Insight on Sex Differences. *J Pediatr.* 2018 Aug;199:124-131.e8. doi: 10.1016/j.jpeds.2018.03.076. Epub 2018 May 8.



APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD: FOOD SHOULD NOURISH

- Healthy Vending Machines
- No artificial colors or flavors
- Ingredient labels

Esparham A, Evans RG, Wagner LE, Drisko JA. Pediatric Integrative Medicine Approaches to Attention Deficit Hyperactivity Disorder (ADHD). *Children (Basel)*. 2014 Aug 27;1(2):186-207. doi: 10.3390/children1020186.

McCann D, Barrett A, Cooper A, et al. Food additives and hyperactive behavior in 3-year-old and 8/9-year-old children in the community: a randomised, double-blinded, placebo-controlled trial. *Lancet*. 2007;370:1560–1567. doi: 10.1016/S0140-6736(07)61306-3.



APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD: SHARED MISSION

- 1. EDUCATION VIEW: Support Academic Achievement
- 2. PUBLIC HEALTH VIEW: Prevent Morbidity and Mortality
- Reading ability → educational attainment
- Higher childhood IQ → predicts better outcomes
- Conduct problems in childhood → poorer educational attainment and occupational functioning in adults

Ramos Olazagasti MA, Castellanos FX, Mannuzza S, Klein RG. Predicting the Adult Functional Outcomes of Boys With ADHD 33 Years Later. *J Am Acad Child Adolesc Psychiatry*. 2018 Aug;57(8): 571-582.



APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD: CRITICAL NEEDS

- Antisocial behaviors predict poorer educational achievement
- Core symptoms remain for many at age 18
- Nonalcohol substance use disorder → worse outcomes

Ramos Olazagasti MA, Castellanos FX, Mannuzza S, Klein RG. Predicting the Adult Functional Outcomes of Boys With ADHD 33 Years Later. *J Am Acad Child Adolesc Psychiatry*. 2018 Aug;57(8): 571-582.



APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD

- Educational interventions to reduce Test Anxiety
- ADHD + co-morbid Anxiety → Can respond to CBT!
- The study included 94 children of which approximately 11% met criteria for comorbid mild-to-moderate ADHD
- Less than 2/3 with ADHD had inattentive type (n = 61) and just less than 1/3 had combined (n = 27) subtype.

Gould KL, Porter M, Lyneham HJ, Hudson JL. Cognitive-Behavioral Therapy for Children With Anxiety and Comorbid Attention-Deficit/Hyperactivity Disorder. JAACAP. July 2018 Volume 57, Issue 7, Pages 481–490.e2



APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD

- Hypothetical Case example
- 8 year old male 3rd grader has a 504 plan for ADHD
- Disruptive behavior in the classroom includes:
 - Running out of the classroom
 - Calling out instead of raising his hand
 - Verbal aggression on the playground
- What is Next?



APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD





APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD

- Middle School and High School
- Especially Acute Time Pressures on Staff
- Age of Consent Differs Between HIPAA and FERPA and State Laws

- Sibley MH, Olson S, Morley C, Campey M and Pelham WE. Jr. A school consultation intervention for adolescents with ADHD: barriers and implementation strategies. 2016 Child and Adolescent Mental Health; 21(4): 2016: 183-191.



APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD

- Team meeting
- What were the critical elements of the 504 plan?
- What might be needed in addition to what was already provided?
- Who should be the invited participants to the meeting ?
- What are shared goals?
- What might be some areas with lack of consensus agreement?

Herman KC, Reinke WM, Bradshaw CP, Lochman LE, Borden L, Darney D. Increasing Parental Engagement in School-Based Interventions Using Team Engagement and Motivation Methods. Pages 223-236 in Ed. Weist MD, Lever NA, Bradshaw CP and Owens JS (2014) Handbook of School of School Mental Health, Second Edition. .Springer: New York.



APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD

- Why Not Medication Only?

Hinshaw SP, Owens EB, Wells KC, Kraemer HC, Abikoff HB, Arnold LE, Conners CK, Elliott G, Greenhill LL, Hechtman L, Hoza B, Jensen PS, March JS, Newcorn JH, Pelham WE, Swanson JM, Vitiello B, Wigal T. Family processes and treatment outcome in the MTA: negative/ineffective parenting practices in relation to multimodal treatment. *J Abnorm Child Psychol.* 2000 Dec;28(6):555-68.



APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD

- Medication + Behavior Therapy=
- Potentiation of effect
- SUBCOMMITTEE ON ATTENTION-DEFICIT/HYPERACTIVITY DISORDER, STEERING COMMITTEE ON QUALITY IMPROVEMENT AND MANAGEMENT. Clinical Practice Guideline for the Diagnosis, Evaluation, and Treatment of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents
[www.pediatrics.org/ cgi/doi/10.1542/peds.2011-2654](http://www.pediatrics.org/cgi/doi/10.1542/peds.2011-2654)
[doi:10.1542/peds.2011-2654](https://doi.org/10.1542/peds.2011-2654)



APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD: STAFF AND PARENTS

- Recent Study of 199 children with ADHD inattentive type at UCSF and UC Berkley over 4 years
- Looked at the impact of Child life and attention skills (CLAS) vs. Parent Focused Treatment (PFT)
- PFT and CLAS groups both had improved symptoms of inattention, organization, social skills, academics
- CLAS had improvements for positive and negative parenting behavior as well as inattention, organization, social skills and academics.

Haack LM, Villodas M, McBurnett K, Hinshaw S, Pfiffner LJ. Parenting as a Mechanism of Change in Psychosocial Treatment for Youth with ADHD, Predominantly Inattentive Presentation. *J Abnorm Child Psychol.* 2017 Jul;45(5):841-855. doi: 10.1007/s10802-016-0199-8.



A SHOUT OUT TO DR. STEVE PLISZKA, M.D.

- Pliszka SR, Crismon ML, Hughes CW, Corners CK, Emslie GJ, Jensen PS, McCracken JT, Swanson JM, Lopez M; Texas Consensus Conference Panel on Pharmacotherapy of Childhood Attention Deficit Hyperactivity Disorder. The Texas Children's Medication Algorithm Project: revision of the algorithm for pharmacotherapy of attention-deficit/hyperactivity disorder. *J Am Acad Child Adolesc Psychiatry*. 2006 Jun;45(6):642-57.



APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD





FDA APPROVED STIMULANTS FOR ADHD

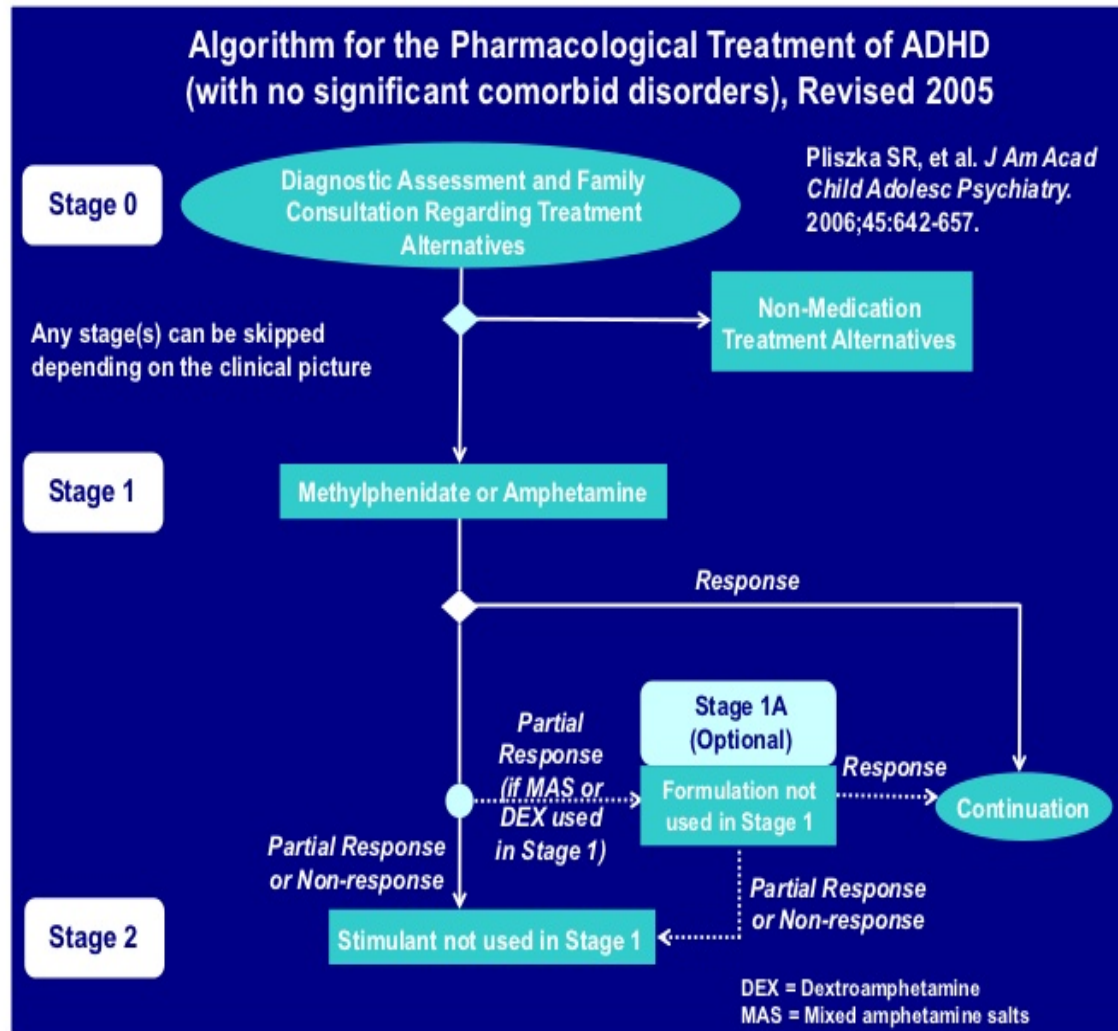
Approved stimulant products for ADHD:

Immediate-Release Stimulants	Long-Acting, Formulated Stimulants	Non-Stimulants	Long-Acting, Prodrug Stimulants
Amphetamine	Amphetamine SR	Atomoxetine	Lisdexamfetamine dimesylate
<i>D</i> -methylphenidate	Dexmethylphenidate XR		
Methylphenidate	Methylphenidate CD		
Mixed amphetamine salts	Methylphenidate LA		
	Methylphenidate patch		
	Mixed amphetamine salts XR		
	OROS* methylphenidate		

*OROS=osmotic release oral system

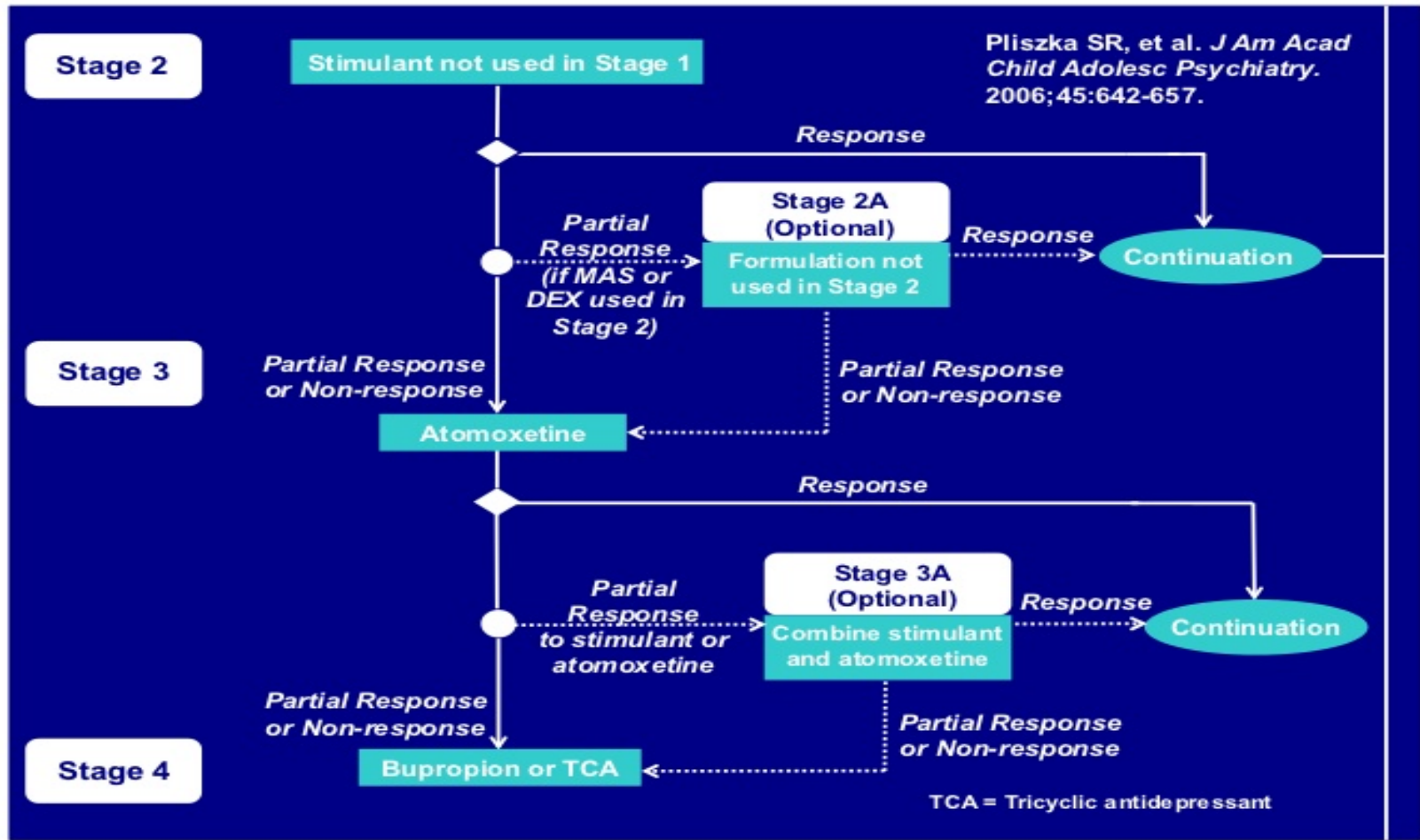


TEXAS ALGORITHM



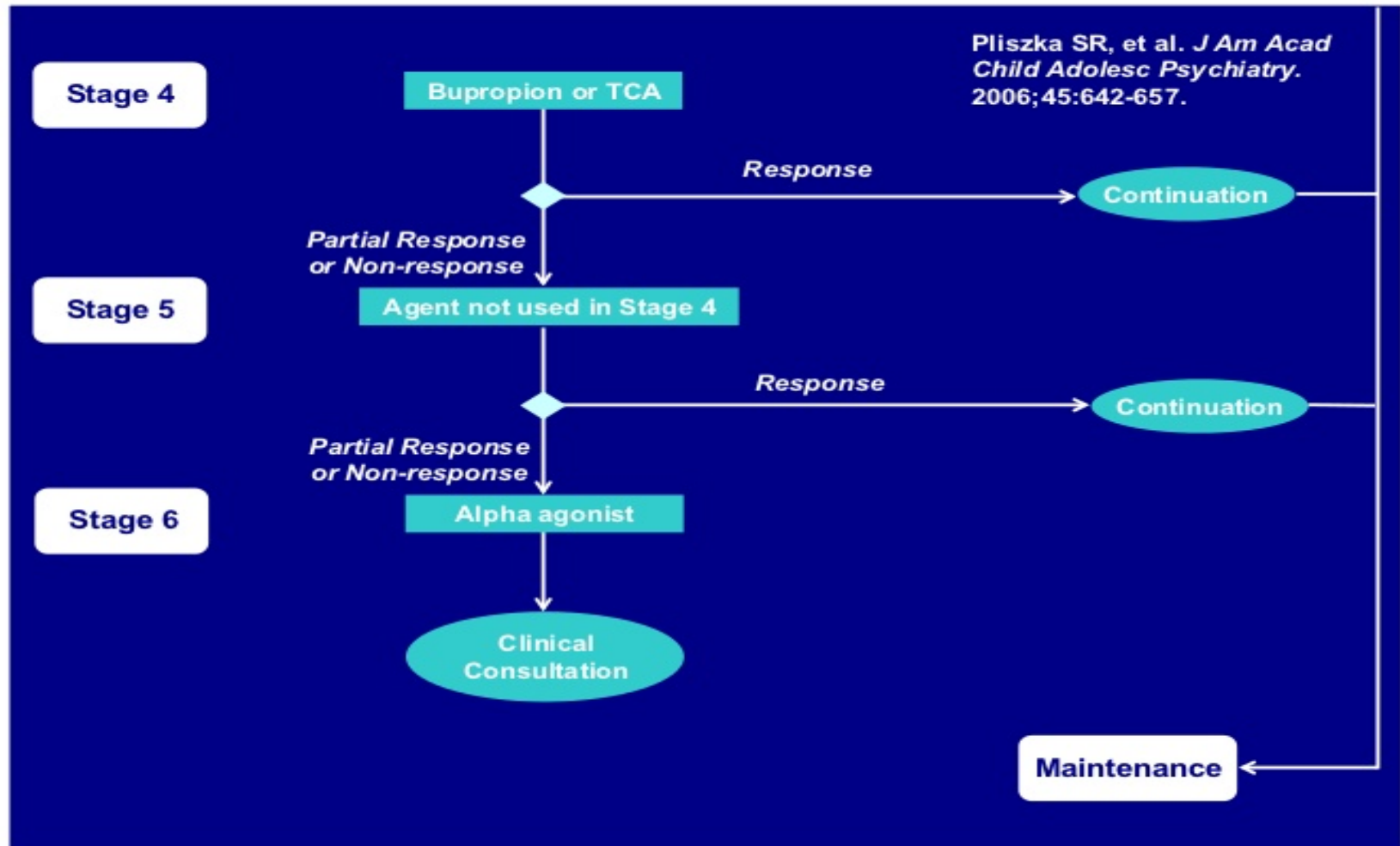


TEXAS ALGORITHM





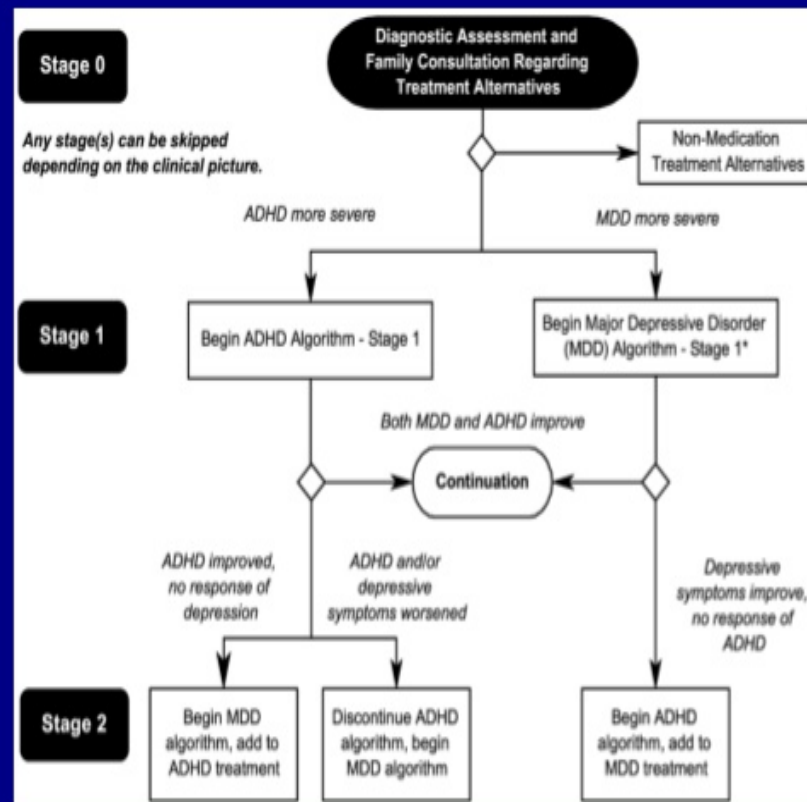
TEXAS ALGORITHM





ADHD AND DEPRESSION

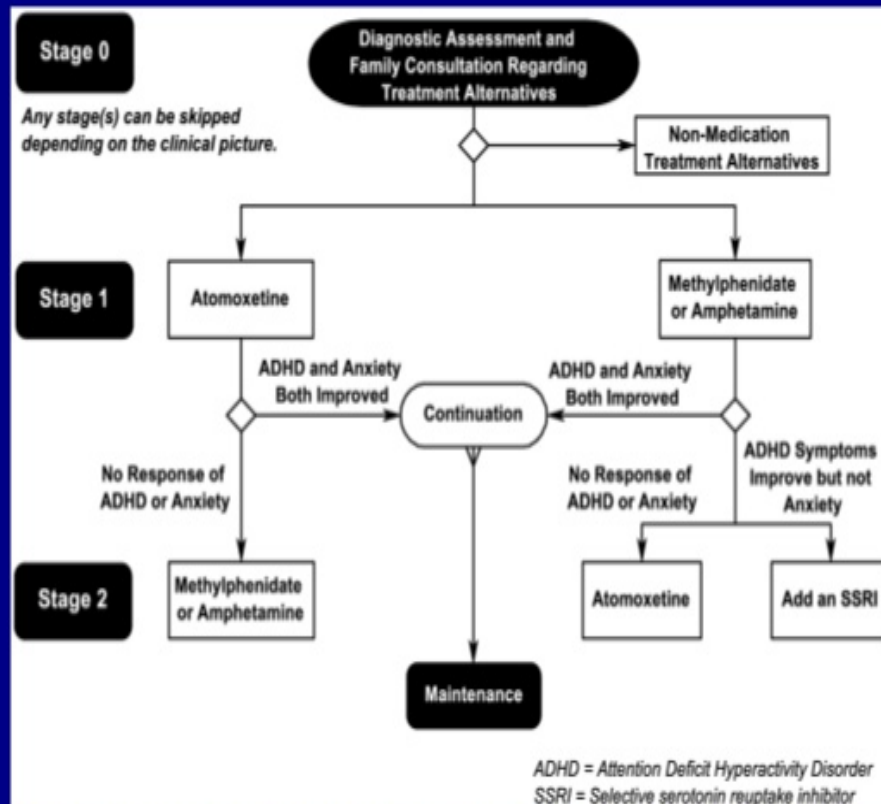
TMAP Algorithm: Pharmacologic Management of ADHD and Comorbid Depressive Disorder





ADHD AND ANXIETY

TMAP algorithm for pharmacologic management of ADHD and comorbid anxiety disorder:



Pliszka SR et al. *J Am Acad Child Adolesc Psychiatry* 2006; 45(6) 642-657



ADHD AND TIC D/O

TMAP algorithm for pharmacologic management of ADHD with comorbid tic disorder:





ADHD AND AGGRESSION

TMAP algorithm for pharmacologic management of ADHD and aggression:





SECOND LINE MEDICATIONS ADDED TO STIMULANTS

Possible Medical Side Effects of Dopamine Blockers

Weight Gain (or Loss)

Changes in Blood Glucose, Cholesterol, TG

Sleepy

Irritable

Breast development

Use and Characteristics of Antipsychotic/Methylphenidate Combination Therapy in Children and Adolescents with a Diagnosis of Attention-Deficit/Hyperactivity Disorder. Scholle O, Banaschewski T, Enders D, Garbe E, Riedel O.J Child Adolesc Psychopharmacol. 2018 Jul/Aug;28(6):415-422. doi: 10.1089/cap.2018.0024. Epub 2018 May 16.



APPROACH TO COLLABORATIVE CARE AND THERAPIES FOR ADHD





VIDEO GAMES

- More digital medial use → ADHD symptoms
- 24 months later in 15 – 16 years old adolescents
- Take Home:
- More Green Time and Less Video Game Time
- Ra CK, Cho J, Stone MD, De La Certa J, Goldenson NI, Moroney E, Tung I, Lee SS, Leventhal AM. Association of Digital Media Use With Subsequent Symptoms of Attention-Deficit Hyperactivity Disorder among Adolescents. JAMA. 2018; 320(3): 255-263.



INTEGRATIVE APPROACHES AND ADHD





INTEGRATIVE APPROACHES TO ADHD

- Omega 3 Fatty Acids

Wilens TE, Carrellas NW, Zulauf C, Yule AM, Uchida M, Spencer A, Biederman J. Pilot Data Supporting Omega-3 Fatty Acids Supplementation in Medicated Children with Attention-Deficit/Hyperactivity Disorder and Deficits in Emotional Self-Regulation. *J Child Adolesc Psychopharmacol*. 2017 Oct;27(8):755-756. doi: 10.1089/cap.2017.0080. Epub 2017 Jun 29.



INTEGRATIVE APPROACHES TO ADHD

- Deficiency of Magnesium and Zinc may provoke all types of ADHD symptoms
- Deficiency of Ferritin may also be linked to Hyperactivity

Mahmoud MM, El-Mazary AA, Maher RM, Saber MM. Zinc, ferritin, magnesium and copper in a group of Egyptian children with attention deficit hyperactivity disorder. *Ital J Pediatr.* 2011 Dec 29;37:60. doi: 10.1186/1824-7288-37-60.



INTEGRATIVE APPROACHES TO ADHD

- Micronutrients may improve ADHD symptoms

Popper CW. Pharmacologic alternatives to psychostimulants for the treatment of attention-deficit/hyperactivity disorder. Child Adolesc Psychiatr Clin N Am. 2000 Jul;9(3):605-46, viii.



INTEGRATIVE APPROACHES TO ADHD

- Acetyl-L-Carnitine

Abbasi SH, Heidari S, Mohammadi MR, Tabrizi M, Ghaleiha A, Akhondzadeh S. Acetyl-L-carnitine as an adjunctive therapy in the treatment of attention-deficit/hyperactivity disorder in children and adolescents: a placebo-controlled trial. *Child Psychiatry Hum Dev.* 2011 Jun;42(3):367-75. doi: 10.1007/s10578-011-0220-y.

Arnold LE, Amato A, Bozzolo H, Hollway J, Cook A, Ramadan Y, Crowl L, Zhang D, Thompson S, Testa G, Kliewer V, Wigal T, McBurnett K, Manos M. Acetyl-L-carnitine (ALC) in attention-deficit/hyperactivity disorder: a multi-site, placebo-controlled pilot trial. *J Child Adolesc Psychopharmacol.* 2007 Dec;17(6):791-802. doi: 10.1089/cap.2007.018.



INTEGRATIVE APPROACHES TO ADHD: TECH

- Neurofeedback (NF)?
- No differences in ADHD baseline symptoms between groups were found.
- Post-treatment, teachers reported significantly lower ADHD symptoms in the MPH group ($p = 0.01$), but parents reported no differences between the groups.
- .Sudnawa KK, Chirdkiatgumchai V, Ruangdaraganon N, Khongkhatithum C, Udomsubpayakul U, Jirayucharosak S, Israsena P. Effectiveness of Neurofeedback Versus Medication in Treatment of ADHD. *Pediatr Int.* 2018 Jun 22. doi: 10.1111/ped.13641. [Epub ahead of print]



INTEGRATIVE APPROACHES TO ADHD: TECH

- Not yet proven: Executive Function training via Computer Games
- Evo delivers AKL-T01 NeuroRacer

Abbasi J, Adam Gazzaley, MD, PhD: Developing Prescribable Video Games. *JAMA*. 2018 Jul 3;320(1):16-18. doi: 10.1001/jama.2018.4985.

Bisoglio J, Michaels TI, Mervis JE, Ashinoff BK. Cognitive enhancement through action video game training: great expectations require greater evidence. *Front Psychol* (2014) 5:136.10.3389/fpsyg.2014.00136

Dovis S, Van der Oord S, Wiers RW, Prins PJ. Improving executive functioning in children with ADHD: training multiple executive functions within the context of a computer game. a randomized double-blind placebo controlled trial. *PLoS One*. 2015 Apr 6;10(4):e0121651. doi: 10.1371/journal.pone.0121651. eCollection 2015.

Sonuga-Barke E, Brandeis D, Holtmann M, Cortese S. Computer-based cognitive training for ADHD: a review of current evidence. *Child Adolesc Psychiatr Clin N Am* (2014) 23(4):807–24



INTEGRATIVE APPROACHES TO ADHD: TECH

10 APPS for ADHD were reviewed for ease of use,
fun quality, accuracy of claims

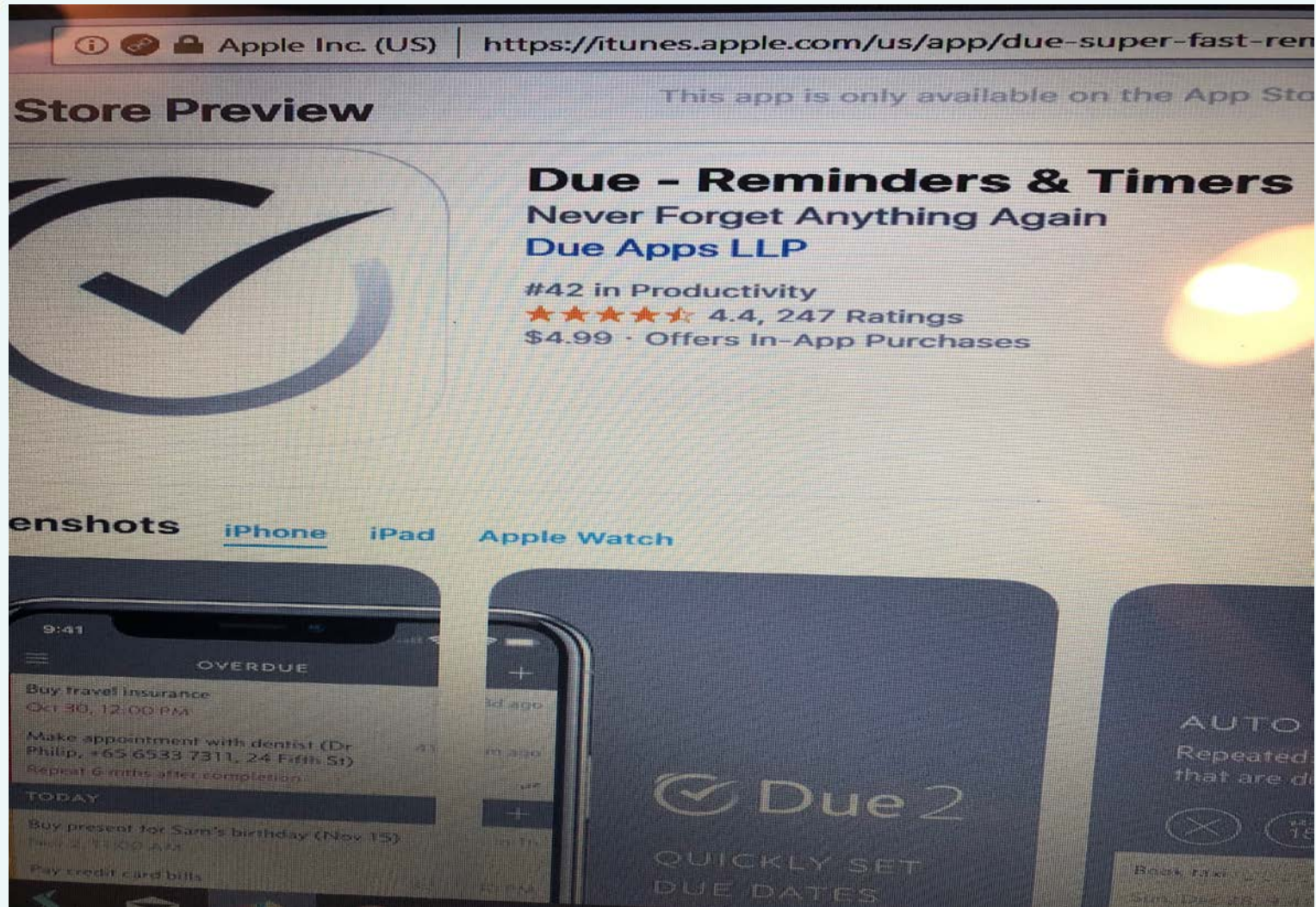
In general APPS did not perform as promised

Remember the Milk, DUE, Calendar may be helpful

Powell L, Parker J, Robertson N and Harpin V. Attention Deficit Hyperactivity Disorder: Is There an App for That? Suitability Assessment of Apps for Children and Young People With ADHD. JMIR Mhealth Uhealth. 2017 Oct; 5(10): e145.



INTEGRATIVE APPROACHES TO ADHD





INTEGRATIVE APPROACHES TO ADHD


or-Adults/Living-with-ADHD-A-Lifespan-Disorder/Apps-for-ADHD

Disorder | Apps for ADHD

Apps for ADHD

Smart phone calendars

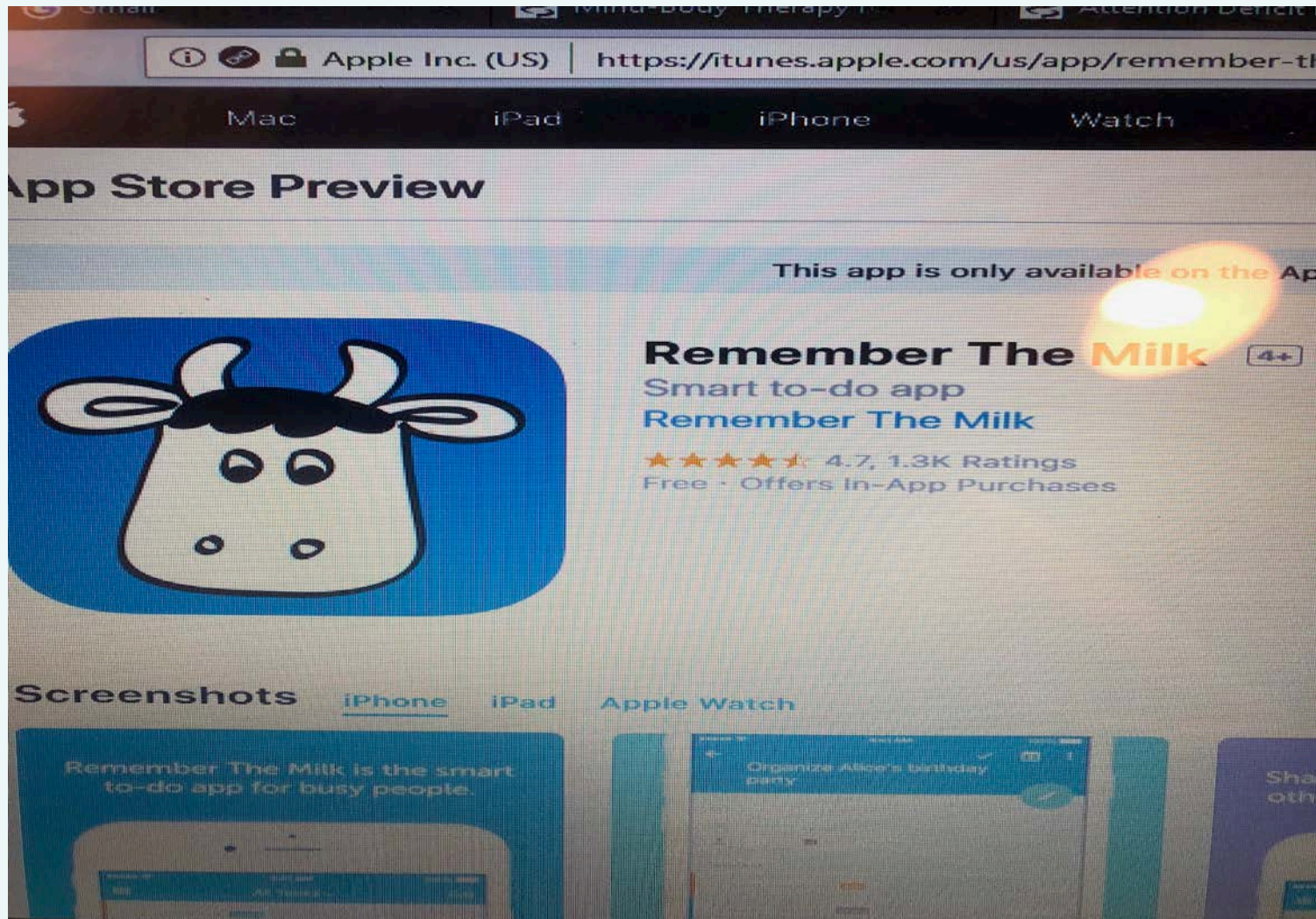
- Most smart phones come with calendars that connect to email service calendars
- Once you've entered appointments and events on your email calendar, it will sync with the smartphone calendar
- Smartphone calendar will sound an alarm when tasks or appointments come up



Executive Functions Supported: *Monitoring and self-activating for tasks*



INTEGRATIVE APPROACHES TO ADHD





INTEGRATIVE THERAPIES FOR ADHD





INTEGRATIVE APPROACHES

- Tai Chi and Karate/High Impact Running/Exercise
- Helpful

- Meditation/Mindfulness/Yoga
- Breathing strategies
- Mindfulness in the Present Moment
- Doesn't require special equipment
- If done at home also can reduce the stress parents experience

Grassmann V, Alves MV, Santos-Galduróz RF, Galduróz JC. Possible Cognitive Benefits of Acute Physical Exercise in Children With ADHD. *J Atten Disord.* 2017 Mar;21(5):367-371. doi: 10.1177/1087054714526041. Epub 2016 Jul 28.

Herbert A and Esparham A. Mind-Body Therapy for Children with Attention-Deficit/Hyperactivity Disorder. *Children* 2017, Apr; 4 (31): 1-31. doi:10.3390



INTEGRATIVE THERAPIES FOR ADHD



philomafinno



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INTEGRATIVE APPROACHES TO ADHD: CREATIVE ARTS

- More research needed, although intuitively appealing!
- No conclusive research driven data.
- Sánchez-López M, Pardo-Guijarro MJ, Del Campo DG, Silva P, Martínez-Andrés M, Gulías-González R, Díez-Fernández A, Franquelo-Morales P, Martínez-Vizcaíno V; Movi-Kids group. Physical activity intervention (Movi-Kids) on improving academic achievement and adiposity in preschoolers with or without attention deficit hyperactivity disorder: study protocol for a randomized controlled trial. *Trials*. 2015 Oct 12;16:456. doi: 10.1186/s13063-015-0992-7.
- Helle-Valle A, Binder PE, Anderssen N, Stige B. Is restlessness best understood as a process? Reflecting on four boys' restlessness during music therapy in kindergarten. *Int J Qual Stud Health Well-being*. 2017 Jun;12(sup1):1298266. doi: 10.1080/17482631.2017.1298266.

QUESTIONS

?

