Evidence Based Practice

"Evidence-based practice is the integration of best research evidence with clinical expertise of patient values".

Sackett, D.L., Straus, S.E., Richardson, W.S., Rosenberg, W., and Haynes, R.B. (2000). Evidence Based Medicine: How to Practice and Teach EMB (2nd Edition). London, Great Britton: Churchill Livingstone.

Evidence Based Practice

"Guidelines should be based on broad careful consideration of the relevant empirical literature...Recommendations on specific interventions should take into consideration the level of methodological rigor and clinical sophistication of the research supporting the intervention...The evaluation of treatment efficacy places greatest emphasis on the evidence derived from sophisticated empirical methodologies, including quasi experiments and randomized controlled experiments or their logical equivalents" (1053-1054).

Author (December, 2002). Criteria for Evaluating Treatment Guidelines. American Psychologist, 57(12), 1052-1059.

BEST TREATMENT FOR ADHD

"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). <u>Nonmedication treatments for adult ADHD</u>. Washington, DC: American Psychological Association Press, p. 3.

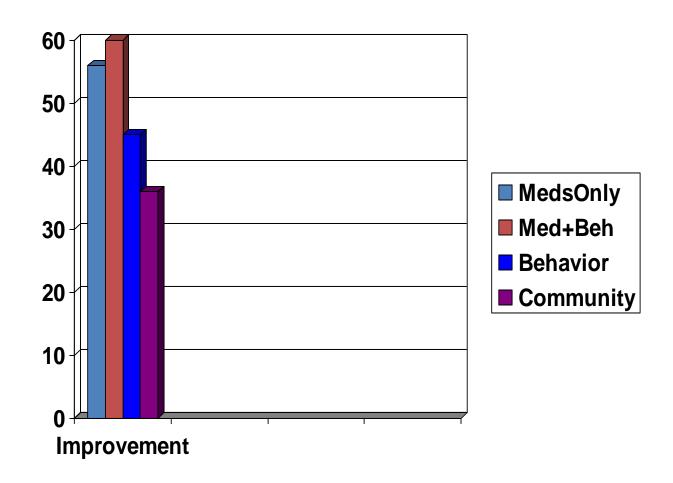
Treatment of AD/HD

- 1. Diagnosis
- 2. Psychoeducation about AD/HD
- 3. Medication
- 4. Accommodation

Barkley, R. A. (1998). <u>ADHD in Children, Adolescents, and Adults: Diagnosis, Assessment, and Treatment</u>. New England Educational Institute, Cape Cod Symposia, August, Pittsfield, MA.

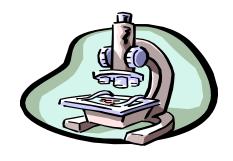
Barkley, R.A. (2006). <u>Attention-Deficit Hyperactivity Disorder</u>. New York, NY: Guilford, p. 6

MTA OUTCOMES



(MTA Cooperative Group. Achieves of General Psychiatry. 1999; 56:1073-1086.)

MTA Study



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

NIMH Research Treatment for Attention Deficit Hyperactivity Disorder (ADHD): The Multimodal Treatment Study – Questions and Answers. From website:

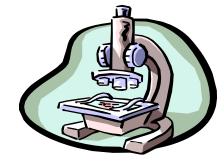
www.nimh.nih.gov/chilfhp/mt.aqu.cfm

MTA Study

- "Based on these findings, we concluded that for AD/HD symptoms, a closely monitored medication approach of the MTA was superior to behavioral treatment alone and routine community treatment that included medication. Combined treatment offered slightly greater benefits than medication management alone for AD/HD symptom reduction as well as for other domains, such as peer relations, parent-child relations and academic outcomes." (p. 64)
- Combined group used 20% less medication than Medication Only group.
- 24-month follow-up same basic results.

Jensen, P.S., Abikoff, H.B., Arnold, L.E., Epstein, J., Greehill, L.L., Hechtman, L., Hinshaw, S.P., March, J.S., Newcorn, J.H., Swanson, J.M., Vitello, B., Wells, K. and Wigal, T. (2006-2007). A 24-Month Follow-up to the NIMH MTA Study. The New CHADD Information and Resource Guide to AD/HD. Landover, MD: CHADD, pp. 64-67.

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). <u>Social Competence in Children</u>. New York, NY: Springer, p. 55.

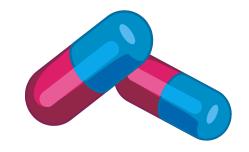
AD/HD Response Rate to Stimulant Titration

"If methylphenidate (sic., ritalin) is not effective or if there are side effects then the next alternative is dextroamphetamine (sic., dexedrine)...If the diagnosis has been appropriately made, the response rate is about 80% to 96%."

Mahoney, W. (2002). The Use of Stimulant Medication in the Treatment of Attention Deficit Hyperactivity Disorder. Pediatrics & Child Health, 7 (1), pp. 693-696; From website: www.ncbi.nlm.nih.gov/pmc/articles/PMC2796531.



AD/HD and Medication



 "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)

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

Alternative and Integrative Medicine Treatments of AD/HD & LD

- 56% of those with Anxiety use alternative treatments.
- 53% with Depression
- 16% of hospital offer CAM therapies
- Highest rates used by those with serious and debilitating conditions

Dittmann, M. (June, 2004). Alternative Health Care Gains Steam. Monitor On Psychology, 35 (6), pp. 42-44.

Complementary & Alternative Treatments

There is more to life than "symptom reduction"

- Can meet your goals?
- Can you fulfill your roles?
- Do you have a good quality of life?
- Are you happy?
- Are you anxious and/or depressed?
- Etc.

Ramsay, R. (2010). <u>Nonmedication treatments for adult ADHD</u>. Washington, DC: American Psychological Association Press, p. 3.



Alternative and Integrative Medicine Treatments of AD/HD & LD

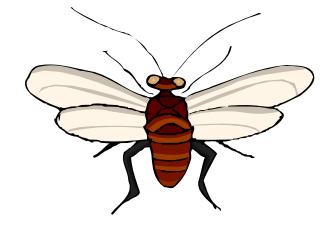
- "Today's complementary and alternative medicine is tomorrow's mainstream, but first it must meet with rigorous scientific evaluation."
- –Alan Leshner, Ph.D., National Advisory Council for Complementary and Alternative Medicine and CEO of the American Association for the Advancement of Science (p. 44).

Dittmann, M. (June, 2004). Alternative Health Care Gains Steam. Monitor On Psychology, 35 (6), pp. 44.

Alternative and Integrative Medicine Treatments of AD/HD & LD

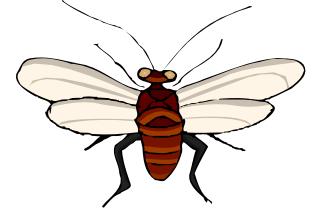
"We should all eat dung, because a thousand flies can't be wrong!"

Russell Barkley, Ph.D.



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





When to question if a treatment is legitimate:

- when no research in peer-reviewed journal is available;
- when they say, "traditional medicine, etc." refuses to accept what they are saying;
- if most professionals would not use the method; and
- when the person pushing the treatment says, "...prove me wrong... (p.4).

Silver, L. (Summer, 2001). Controversial Therapies, Theme Editor's Summary. <u>Perspectives</u>, <u>27</u> (3), pp.1 and 4.

Complementary and Alternative Treatments

What should the research study have?

- 1. Random assignment into groups.
- 2. A control group where everyone in the group gets no treatment and/or a placebo, or "sham" treatment.
- The research subjects and researcher should be "blind" to which treatment subjects are receiving.
- 4. A large group of subjects: 1 is no good, 1000 is much better.
- 5. Have the results been replicated?
- 6. Who paid for the study?

VERY IMPORTANT NOTE



 As Goodman (2010) says, "As always, any experimental treatments should be shared with your treatment professional." (p. 15)

Goodman, B. (June, 2010). Five popular approaches to treating ADHD. <u>Attention</u>, <u>17 (3)</u>, pp. 14-15.

 Hence, you should share with your allopathic doctor (M.D./D.O.) any complimentary and alternative (CAM) treatments you are using. You should also share any allopathic treatments with your CAM health provider.

VERY IMPORTANT NOTE



"The consequences of taking St. John's Wort with other drugs can be serious...The bottom line is: if you use other medications, talk to your doctor and pharmacist before taking St. John's Wort to find out if there is the potential for harm."

Author (March, 2004). St. John's wort drug interactions. <u>The Harvard Medical School, Family Health Guide</u>. From website: <u>www.health.harvard.edu/fhg/updates/update0304.shtml</u>.

Dr. Blake's Old Philosophy

 If a parent wanted to treat their child's Combined Type AD/HD with, "essence of eyes of knute to cure their AD/HD and to make sure their child never has a bad hair day". I would hit them over the head with a stack of doubleblind research. To which they would respond by making sure they took their child for the essence of eyes of knute treatment.

Dr. Blake's Realization

 We live in a free country and part of living in a free country everyone may choose the treatment they want for their disorders and for their illnesses as well as their children's illnesses; whether they are backed by science or not.

Dr. Blake's Realization

- There are reasons people cannot use traditional allopathic approaches:
 - Religious convictions
 - Medical conditions (high blood pressure, etc.)
 - Job requirements (airline pilot, etc.)
 - Fears due to bad things allopathic practioners have done in the past (not report negative data for the use of medications, etc)
 - Etc.

Dr. Blake's New Philosophy

- Begin by telling the client/client's parents the treatment modalities backed up with the most double-blind research.
- If they balk discuss and attempt to dispel their concerns by explaining the relevant research.
- If they continue to balk ask them what type of Complimentary and Alternative (CAM)
 Treatment they would like to try.

Dr. Blake's New Philosophy

 Then provide them the information about the efficacy of the CAM treatment they desire. Part of this would include offering to teach the client to be a consumer of research (e.g., what is Double-Blind Research, Random Assignment, etc.) and to review the research with them. Do a literature search using the resources on the following pages.

Dr. Blake's New Philosophy

 If after doing the literature review with them and they continue to want the CAM technique, but you believe the research and your clinical experience does not merit its use you can say you do not recommend it. But, now they have informed consent and they can try it and ask them to tell you how it works out. If it doesn't work they may be more likely to try more allopathic approaches.

CHADD's Website



www.chadd.org

CHADD's National Resource Center

www.helpforadhd.org

(a program of CHADD, funded by the Centers for Disease Control)

"What We Know" sheets:

- #6: Complementary and Alternative Treatments
 www.help4adhd.org/en/treatment/complementary/wwk6
- #6a: Complementary and Alternative Treatments: Neurobiofeedback (EEG Biofeedback) and ADHD www.help4adhd.org/en/treatment/complementary/wwk6a
- #18: Coaching for Adults with ADHD www.help4adhd.org/en/living/coaching/wwk18



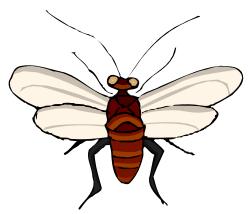
Other CHADD Resources on Complementary and Alternative

Treatments

- Cook, P. (1997). Knowledge is Power: Guidelines for Being an Informed Health Care Customer. <u>Attention!</u>, <u>4</u> (2), pp. 14-17.
- December 2003 edition of <u>Attention!</u> Available from CHADD.
- Arnold, E. (August, 2006). Alternative and Complementary Treatments for AD/HD. <u>Attention!</u>, <u>13</u> (4), 30-35
- Ingersoll, B. (October 26, 2006). Complementary
 Treatments for AD/HD. Paper Presented at the 18th
 Annual CHADD International Conference, Chicago, IL.

Other CHADD Resources on Complementary and Alternative Treatments

Goodman, B. (June, 2010). Five popular approaches to treating ADHD. <u>Attention</u>, <u>17 (3)</u>, pp. 14-15.



Publications to Check Out CAM Therapies

- Ingersoll, B., and Goldstein, S. (1993). <u>Attention-Deficit</u>
 <u>Disorder and Learning Disabilities: Realities Myths</u>
 <u>and Controversial Treatments</u>. New York, NY:
 <u>Doubleday</u>.
- Silver, L. (Summer, 2001). Controversial Therapies, Theme Editor's Summary. <u>Perspectives</u>, <u>27</u> (3), pp.1 and 4.
- Arnold, L.E. (2002). <u>Contemporary Diagnosis and Management of Attention-Deficit/Hyperactivity</u>
 <u>Disorder</u>. Newtown, PA: Handbooks in Health Care.
- Rappaport, L.A., & Kemper, K.J. (2003). Complimentary and Alternative Therapies in Childhood Attention and Hyperactivity Problems. <u>Developmental and</u> <u>Behavioral Pediatrics</u>, <u>24</u>, pp. 4-8.

Publications to Check Out CAM Therapies

- Author (May, 2004). Dangerous Supplements:
 Still at Large. Consumer Reports, 69 (5),
 pp. 12-17.
- Barkley, R. A. (2005) <u>Taking Charge of ADHD:</u>
 <u>The Complete, Authoritative Guide for Parents (3rd edition).</u> New York: Guilford.
- Ramsay, R. (2010). <u>Nonmedication treatments</u> <u>for adult ADHD</u>. Washington, DC: American Psychological Association Press.

Place to Check CAM Therapies

Muskin, P.R. (2000). <u>Alternative Medicine and Psychiatry</u>. Washington, DC: American Psychiatric Association Press.



Places to Check CAM Therapies

• Field, T. (2008). <u>Complimentary and</u> Alternative Therapies Research.

Washington, DC: American Psychological

Association Press.



WEBSITES TO CHECK OUT CAM THERAPIES

•Cochrane Collaboration: <u>www.cochrane.org</u>

•Quackwatch: www.quackwatch.com

•My ADHD: www.myADHD.com

•National Adult Attention Disorder Association (ADDA) website:

www.add.org

- •International Dyslexia Association website: www.interdys.org.
- •Learning Disabilities Association of America: www.ldanatl.org

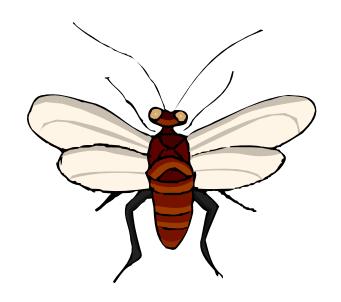
WEBSITES TO CHECK OUT CAM THERAPIES

National Center for Learning Disabilities:

www.ld.org

• LD OnLine:

www.ldonline.org



Places To Check Out "New" Treatments For AD/HD and LD: National Institute of Health (NIH)

- National Center for Complimentary and Alternative Medicine: www.nccam.nih.gov
- NCCAM Clearinghouse: 888-644-6226
- Some findings:
 - St. John's Wort (Hypericum Perforatum) no better than placebo with Major Depression. Now being studied with "Minor" Depression-There is some research that St. John's Wort can help with mild to moderate depression. *More* research is needed!

Dittmann, M. (June, 2004). Alternative Health Care Gains Steam. Monitor On Psychology, 35 (6), pp. 42-44.

Autor (March 2004). <u>Get the Facts: St. John's Wort and The Treatment of Depression</u>. National Center for Complementary and Alternative Medicine, National Institutes of Health, NCCAM Publication #: D005: www.nccam.nih.gov/health/stjohnswort/



Diet and ADHD

"While the available evidence is not conclusive that what a person eats causes hyperactivity and inattentiveness, there is every indication that people with ADHD, as well as the entire population for that matter should be attentive to what they eat." (p. 14)

Goodman, B. (June, 2010). Five popular approaches to treating ADHD. <u>Attention</u>, 17 (3), pp. 14-15.



"Said simply, there is no reliable evidence that poor diet, too much sugar, too much caffeine, or food additives are causal factors for the widespread symptoms and impairments characteristic of ADHD." (p. 149)

Ramsay, R. (2010). <u>Nonmedication treatments for adult ADHD</u>. Washington, DC: American Psychological Association Press, p. 149.



Mineral Supplementation:

"Research support for the various forms of nutritional supplementation reviewed in this chapter is minimal, preliminary, and equivocal at best." (p. 148).

Ramsay, R. (2010). <u>Nonmedication treatments for adult ADHD</u>. Washington, DC: American Psychological Association Press, p. 149.

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Essential Fatty Acid Supplementation:

"Overall, however, EFA supplementation is not an adequate single treatment for ADHD for patients of any age, although it may be a complement to a treatment plan in cases of comorbid depression and to optimize good health practices." (p. 145).

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



- Barkley (2008) indicates that one in 20 ADHD children before the age of 6 may have a food allergy severe enough to irritate their the ADHD symptomatology, but this does not persist after age 6.
- Bottom line he states that diet, supplementation, Omega 3s, etc. do not work and may even be dangerous because children livers cannot break down supplements, etc. as well as adults.

Barkley, R.A. (2008). <u>Advances in ADHD: Theory, Diagnosis and Management</u>. J & K Seminars, LLC, 1861 Wichersham Lane, Landcaster, PA 17603, 800-801-5415, <u>www.jkseminars.com</u>, disc 7, track 7.

Complementary & Alternative Treatments Not Backed by Research

- Light Therapy
- Repetitive Transcranial Magnetic Stimulation
- Magnetic bed mattresses
- Vestibular and Cerebellar Exercises
- Massage
- Interactive Metronome
- Chiropractic treatment
- Vision therapy

- Acupuncture
- Mirror feedback
- Herbal & Homeopathic Treatments
- Tarantula venom

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

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

Neurobiofeedback and AD/HD

 Ramsay stated that support for neurobiofeedback is, "...tentative and not conclusive, and the percise mechanisms of change remain unclear..." (p.123).

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

 For further discussion of this hotly debated topic go to Dr. Blake's website's webinar extra slide page: www.drkevintblake.com. Possible Alternative Medicine Treatment for Working Memory Problems

- Working Memory Training:
 - Torkel Klingberg, M.D., Ph.D.
 - Karolinska Institute- Stockholm, Sweden
 - CogMed software company (RM Program)
 - AD/HD deficient in visual spatial working memory. Gets worse with age.
 - MAY help relieve executive functioning difficulties and reading comprehension problems in Combined Type AD/HD.
 - More Research is needed!

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

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

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Ingersoll, B. (October 26, 2006). <u>Complementary Treatments for AD/HD</u>. Paper Presented at the 18th Annual CHADD International Conference, Chicago, IL.

Klingberg, T. and Andersson, M. (October 28, 2006). Computerized Training of Working Memory in Children with AD/HD. Paper presented at the 18th Annual CHADD International Conference, Chicago, IL.

COGMED and **ADHD**



 Recent study has shown that the use of COGMED with stimulant medication reduces working memory deficits better than medication alone. Children with ADHD went up 1 SD in working memory and results held for 6 months.

Holms, J., Gathercole, S.E., Place, M., Dunning, D.L., Hilton, K.A. and Elloitt, J.G. (2009). Working memory deficits can be overcome: Impacts of training and medication on working memory in children with ADHD.

<u>Applied Cognitive Psychology</u>, From Wiley Interscience abstract: www3.interscience.wiley.com/journal/122462190/abstract?CRETRY+1& SRETRY=0

COGMED and ADHD



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- Treatment Group:
 - Significant gains in all types of working memory, even verbal STM and WM.
 Subjects follow directions better, too.
 - No significant drops in 6 months.
 - Significant increases in math and following directions in 6 months.

Holmes, J., Gathercole, S.E., and Dunning, D.L. (2009). Adaptive training leads to sustained enhancement of poor working memory in children. <u>Developmental Science</u>, <u>12</u>, F9-F15.

COGMED and ADHD



Second study:

- Children with low working memory for their age
- Random assignment into two groups: treatment and sham treatment/control
- Treatment group showed significant improvement in verbal short-term memory and verbal working memory. No difference found on visual-spatial working memory and visual-spatial short-term memory.

Holms, J., Gathercole, S.E., Place, M., Dunning, D.L., Hilton, K.A. and Elloitt, J.G. (2009). Working memory deficits can be overcome: Impacts of training and medication on working memory in children with ADHD. Applied Cognitive Psychology, From Wiley Interscience abstract: www3.interscience.wiley.com/journal/122462190/abstract?CRETRY+1&SRETRY= 0

COGMED

www.cogmed.com



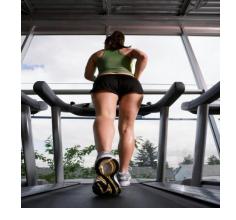
Exercise and ADHD



Ratey (2008) stated that aerobic exercise for 30 minutes a can increase dopamine and norepinephrine (two neurotransmitters related to ADHD) for up to 90 minutes. "For most of my patients, I suggest exercise as a tool to help them manage their symptoms along with their medication." (p. 164)

Ratey, J.J. (2008). <u>Spark: The revolutionary new science of exercise and the brain</u>. New York, NY: Little, Brown and Company.

ADHD & Exercise

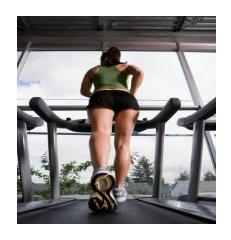


Barkley (2008) stated if you have combined type
 ADHD you should take a run just before an
 examination instead of review your notes one more
 time. He recommends people with ADHD have a
 regular mild aerobic exercise routine, too.

Barkley, R.A. (2008). <u>Advances in ADHD: Theory, diagnosis and</u> <u>management</u>. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; <u>www.jkseminars.com</u>; disc 7, track 11.

Excellent Book on Exercise and ADHD

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



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

- Immediate Intense Rewards & Change Them Often
- Provide Feedback, "at the point of performance!"
- Provide External Memory Prompts: PDA's, Watchminder-2 Watch, Motivators, Digital Audio Recorders, Attention Trainers, etc.: www.addwarehouse.com
- Use a token economy with the student

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

What Can I Do with Combined Type AD/HD Kids in The Classroom?

- Provide Increased Supervision: 30% Rule
- Assign a case manager
- Use Daily Report Cards
- Directly Teach:
 - Problem Solving, Time Management,
 Organizational Skills, Anger Management, Conflict resolution, Decision Making Skills

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

What Can I Do With Combined Type AD/HD Kids In The Classroom?

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

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

What Do I Do If They Still Will Not Use Medication With their Child?

- Possibly suggest the following:
 - CogMed
 - Token economies at school and home
 - Use Of daily report card communication between school and home
 - Psychoeducation to parents and to child about AD/HD
 - Consider AD/HD coaching and/or a professional organizer
 - Work with pediatrician and fitness coach to come up with daily rigorous exercise program for child
 - Use AD/HD prosthetic devices: Motivator, Attention Trainer, etc.
 - Accomodations: extended time testing, etc.

NOTE: THE ABOVE TREATMENT COURSE WILL PROBABLY NOT WORK AS WELL AS USING MEDICATION ALONG WITH THE ABOVE MENTIONED TREATMENT MODALITIES.

What Do I Do If They Still Will Not Use Medication?

Adults with AD/HD can additionally benefit from cognitive behavioral therapy (CPT) to help them control their symptomatology. This will <u>NOT</u> work with AD/HD children because they do not have sufficient frontal lobe abilities yet (internalized speech, visual spatial working memory, etc.) to benefit from it.

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