ADD

Healing vs Drug Treatment

A Pediatrician Sees the Light

Bose Ravenel, M.D., F.A.A.P.

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Experience and Reason

- 31 years private practice
- 11 years academic pediatrics
- Observed inexorable rise in rate of Dx and Rx – narrative of “80% genetic” and neurobiological illogical and pseudo-science basis
- 2008 co-authored *The diseasing of America’s Children* (Thomas Nelson)

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Neuro-biological /Genetic Model
Lack of Scientific Proof

- Agency for Health Care Research and Quality (AHRQ) 1999
- 1998 NIH Consensus Conference
- 2002 State of the Science Text

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AHRQ
Agency for Health Care Research and Quality

- Government sponsored panel of leading experts
- Review of 87 highest quality studies among 2,405 citations
- *The etiology of ADHD is unknown, and the disorder may have several different causes.*

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1998 NIH Consensus Development Conference

- *Problems of diagnosis include differentiating this entity from other behavioral problems and determining the appropriate boundary between the normal population and those with ADHD.*

- *There is no independent valid test for ADHD.*

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2002 State of the Science
Jensen and Cooper, Eds

- *“Up-to-date, state-of-the-art review of what is known concerning the disorder by the world’s leading authorities*.”
- There is no evidence of a natural threshold between ADHD and "normal" behavior.
- The assumption that the ADHD symptoms arise from cerebral malfunction has not been supported even after extensive investigations. - - - Wm. B. Carey
- No single cause of ADHD has yet been identified, and its exact etiology and pathophysiology remain obscure.

  - - - P. S. Jensen and C. K. Conners

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But Don't the Drugs *Work*?

- Schachter 2001 meta-analysis
- MTA study (1999, 2004, 2007)
- Oregon Evidence-based Practice Center Dec 2007 Update 2
- UCLA study of Finnish teens
- Raine study Australia 2010

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Schachter 2001 Meta-analysis

- 62 placebo-controlled randomized trials 1981-1999 from among 2,402 reviewed
- Poor quality of study design
- No trial over 28 weeks
- Strong indication of publication bias, little effectiveness even for short-term improvement

- - - Canadian Medical Association Journal Vol 165, 1475-1488

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MTA Study 1999, 2004, 2007

- Widely proclaimed as “the definitive study”
- Initial outcome data positive . . . faded
- William Pelham (study participant, designed the behavioral treatment): “*There’s no indication that medication is better than nothing in the long run*.” – and -- MTA authors “exaggerated benefits” --- BBC News 11/12/07
- Stimulant-treated children displayed nearly four-fold more delinquent behaviors than non-medication group after study began.

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Drug Effectiveness Review Project Dec 2007 Update

- Oregon Evidence-based Practice Center - Oregon Health & Science University
- Exhaustive review on *effectiveness* ("real" clinical benefit in average users vs "efficacy" for FDA approval in short-term studies)
- *"Good quality evidence on the use of drugs to affect outcomes relating to global academic performance, consequences of risky behaviors, social achievements, etc. is lacking."*

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UCLA Study of Finnish Teens

J. of Amer. Acad. Ch. and Adol. Psychiatry Dec 2007

- Five articles from population based study of ADHD in Finnish teens
- Prospective study of cohort of 9,432 children surveyed at adolescence
- Outcome among American teens, most of whom are treated with stimulants similar to outcome among Finnish teens most of whom are *not* treated.

- - - **From Medscape Medical News Jan 29, 2008**

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Raine Study Australia 2010

- Prospective, longitudinal 8-year follow-up study of 2,868 Western Australia children
- >10 mm Hg increase in diastolic BP vs untreated ADHD controls
- Odds ratio for performing below grade level 10.5-fold increase among ever-treated with stimulants

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What Has Changed in One Generation?
A Rational Hypothesis

- Child-rearing (a.k.a “parenting”)
- Electronic stimuli
- Nutritional and dietary practices
- Educational practices
- Toxic environment

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Child-rearing
Self-control vs self-esteem

- Diana Baumrind longitudinal research
- Bandura and self-efficacy, internal agency
- Baumeister et al self-esteem
- Strayhorn research on self-control
- Aunola et al *Child Development* research on impact of parenting

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Diana Baumrind, Ph.D

- Noted researcher studied outcomes from three styles of parenting
- Longitudinal, prospective 30 year studies in the 1970s
- Worst outcomes Permissive parenting
- Best outcomes Authoritative parenting (powerful love and powerful discipline)

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Albert Bandura, Ph.D
Self-efficacy

- Canadian moved to Stanford University
- Seminal research on social learning and antecedents of behavior
- Importance of self-efficacy vs external agency - - - *Self-Efficacy: The Exercise of Control*. Worth Publishers 1997

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Self-esteem Research ~ Baumeister

Psychological Science in the Public Interest 2003

- Review > 15,000 articles including self-esteem
- Only articles with objective data
- No evidence to support prevailing psychological view attributing behavioral and social problems to low self-esteem
- Primarily raising self-esteem → narcissism
- A favorable view of self should be promoted on the basis of performing well and behaving morally. *By the same token, we think it appropriate and even essential to criticize harmful or unethical behavior and lazy or deficient performance, without worrying that someone's self-esteem might be reduced*.

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Strayhorn on Self-control

J. Am. Acad. Child Adoles. Psychiatry, 41:1, January 2002

- Self-control is a psychological skill whose high development could potentially prevent, or aid in the treatment of, vast amounts of psychopathology.
- Self-Control: Toward Systematic Training Programs ~ 2nd of two articles

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Aunola study

Child Development Dec 2005

- Longitudinal study K – 2 of parenting style and problem behavior outcomes
- Findings included significant impact on problem behaviors from parenting style
- (Authoritative) parenting pattern associated with better outcomes
- Parenting style led to behavioral outcomes rather than reverse

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Electronic Media

- Christakis 2004 *Pediatrics* study
- Landhuis 2007 *Pediatrics* study
- Jane Healy, Ph.D
- Richard DeGrandpre *Ritalin Nation*
- Swing et al *Pediatrics 2010* study
- Possible role of EMF (electromagnetic fields)

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Christakis study

Pediatrics 2004

- Longitudinal study of television exposure from ages 1 to 3 years and attention problems at age 7 years
- 1 SD increase in television watching at ages 1 and 3 followed by 28% incidence of attention problems at age 7

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Landhuis Longitudinal Study
Pediatrics 2007

- New Zealand 1,037 participants
- Watching over 2 to 3 hrs of TV daily in childhood led to increased attention problems in adolescence
- For each hour of TV watched OR increased 43% for attention problem in adolescence
- Controlled for baseline attention levels

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Swing *Pediatrics* 2010
TV and Video Games

- 1,323 middle childhood and 210 late adolescent/early adult subjects
- Significant association of television viewing and video game exposure to attention problems in childhood and adolescence
- Controlled for earlier attention problems and gender

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DeGrandpre
Ritalin Nation 1999

- Early life exposure to electronic stimuli leads to sensory addiction
- Following prolonged exposure, the brain's "wiring" itself is changed
- In the absence of the stimulation the individual experiences poor concentration and exhibits impulsive behavior.

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Jane Healy

Endangered Minds (1990) and *Failure to Connect* (1998)

- Educational psychologist, former advocate of computer exposure for children
- Research supports strong role of exposure to TV and computers to attention level and impulsivity
- Recommends avoiding *any* exposure to computers before age seven and restriction on television viewing

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EMF

Cell Phone and Wireless Exposure

- Emerging concern as exposure to EMF continues to increase
- Correlation (not proof of causation) with numerous effects including ***concentration, cognitive function***
- Powerful interests oppose critical analysis
- *Earthing* book presents compelling arguments in support of risks.

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Nutrition and Diet

- Leo Galland, M.D. research
- Ritalin vs Food-supplement Rx Alt. Med. Rev. 2003
- Meta-analysis on food coloring ~ Developmental and Behavioral Pediatrics Dec, 2004
- Lancet study 2007
- Oxford-Durham study
- Swedish study J. of Att. Dis. Mar, 2009

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Leo Galland, M.D.
Nutrition and ADD/ADHD

- Leo Galland, MD – Fellow, American College of Nutrition, past director of medical research at Gesell Institute for Human Development
- *Superimmunity for Kids* (1989)
- Has managed children with ADD/ADHD for 20 years with nutritional/dietary approach
- Low processed carbs, supplements and minerals (omega-3 FA, magnesium, zinc, others)

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Ritalin vs Food-supplements

Alternative Medicine Review 2003

- 20 children age 7-12 years with ADHD diagnosed by child psychologist
- Ritalin group (10) Ritalin 5 to 15 mg 2 to 3 times daily
- Supplement group given multiple vitamin, multiple mineral, phytonutrients, essential fatty acids and phospholipids (soy lecithin), probiotics, and amino acids
- Similar improvements in attention and self-control based upon IVA/CPT testing

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Meta-Analysis of Food Coloring

Developmental and Behavioral Pediatrics 2004

- Columbia University and Harvard University
- 15 double-blind, placebo controlled trials among 2156 references found from search
- Supports the hypothesis that AFCs promote hyperactivity in hyperactive children, as measured on behavioral rating scales

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Food Additives and Hyperactivity
Univ. Southampton, UK *Lancet* 2007

- Community-based, double-blind, placebo-controlled challenge of commonly consumed food additives
- Classroom and home ratings of behavior by teachers and parents
- Adverse effect was found for food additives in causing hyperactive behavior in 3-year-old and 8/9 year-old children.

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Oxford-Durham study

Pediatrics May 2005

- RDBC trial 117 children with Developmental Discoordination syndrome [ADHD]
- Placebo vs omega-3 + omega-6 FA, double cross-over half way through
- Average beneficial effect on ADHD Sx > 0.70 Conners index *over 6 months after rx*
- Schacter meta-analysis of MPH effect on ADHD 0.78 at 4 weeks but largely faded

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Omega-3/Omega-6 FA

J. of Attention Disorders March 2009

- Randomized 3-mo placebo controlled, one-way crossover trial followed by 3 months omega-3/6 for all participants (75 children and adolesccents 8-18 yrs)
- Daily dose 558 mg EPA, 174 mg DHA (omega-3), and 60 mg gamma linoleic acid (omega-6)
- At 3 months 26% responded with >25% reduction of ADHD Symptoms and CGI scale to near-normal.
- At 6 months 47% showed such improvement

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Educational Practices

- Kindergarten = First Grade
- Kindergrind
- No Child Left Behind
- LeFever study Tidewater, Va 79% of 770 young-for-age children rx for ADD

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National Association for Education of Young Children (NAEYC)

- Children entering kindergarten are now typically expected to be ready for what previously constituted the first grade curriculum. *As a result more children are struggling and failing.*

  - - - Position Statement Nov 1995

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Early Academic Instruction

Early Childhood Research and Practice

Spring 2002

- Study two years of pre-school prior to K three levels of formal instruction – low, medium, and high
- Outcome data four and six years later
- Direct correlation of exposure to formal instruction and outcomes, best outcome after least lowest instructional exposure
- *More distractible, less willing to follow directions* after higher level of didactic instruction

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Birth Date and ADD Diagnosis
Journal of Health Economics Sept.2010

- Elder et al. Michigan State University
  - Among children born in the six months after their state's K eligibility cutoff date, ADHD diagnosis rate 5.1 percent – 20 percent lower than the 6.4 percent overall diagnosis rate
  - Youngest children in fifth and eighth grades nearly twice as likely as older classmates to regularly use prescribed stimulants

- Evans et al. University of Notre Dame
  - Three data sets all found younger age correlated with increased rate of diagnosis
  - Authors concluded that "1.1 million children received an inappropriate diagnosis and over 800,000 received stimulant medication due only to relative maturity."

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Educational Practices
Dyslexia and Reading Instruction Method

- Dyslexia prevailing view = brain based
- Blumenfeld and Miller alternative hypothesis
- First exposure to reading instruction key
- Whole language followed by (20%) “dyslexia”
- Pure phonics virtually never followed by dyslexia

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What Natural Observation Supports This Model?

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Amish

- Amish subculture traditional parenting; forego electronic stimuli; fresh farm raised foods without pesticides, chemicals, etc.; basic educational approaches
- Papolos childhood bipolar research on genetics in Amish ~ No ADD
- Indiana Pediatrician 0 referrals or dx of ADD among 800 Amish families

  - - - *Clinical Pediatrics* 2005

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Nutrition/Diet and Electronic Exposure
Case Study JH

- 11 yr old boy home-schooled
- Problems with reading, DSM attention items 9/9 positive for ADD-I
- Carbohydrate restriction + omega-3 supplement, restriction of electronics
- Two months later marked improvement, repeat DSM questions pos for only 1/9 items

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Electronic Exposure and Parenting
Case Study TP

- Concern about “ADHD” from age 3 DC teacher
- 2nd grade “hyper” and “focus” concern
- DSM criteria + ADHD and ODD
- Heavy electronic exposure
- Parent coaching + electronic restriction
- Dramatic improvement home and school by *six weeks* + DSM repeat normalized
- Three-year follow-up gains maintained

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ADHD on Rx

Case Study JG, age 8, 3rd grade boy

- Behavior problems age 3 on
- Rx for ADHD 2nd grade series of drugs and doses + med for sleep problems on treatment
- ADHD criteria home and school + ODD and Anxiety at home + teacher warning against stopping treatment
- Meds stopped, parent coaching

  Dramatic improvement within *two weeks*
- Follow-up DSM normal at one month, teacher +++ input
- At three year follow-up “model student”

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ADHD Multi-drug Treatment

Case Study ME, age 11, 6th grade boy

- Dx ADHD, Depression, anxiety disorder
- Rx Adderall + Zoloft, then Strattera +Zoloft
- Major behavior, sleep problems, academic near-failure, poor peer relations persisted
- Withdrawn off all drugs over 3 months (Dec ’05)
- Parenting, electronic stimuli restriction, nutritional and dietary intervention
- April 2006 2 A’s, 6 B’s, one C, sleeping well, marked behavioral improvement H and S
- June, 2007 ADD DSM questionnaire of 3 teachers 0 behaviors elevated for 2, only 3 of 18 on 3rd
- Oct 2008 3 A’s 3 B’s, doing well 9th grade 1st Qtr - + feedback teachers and peers, self-motivated
- Jan 2011 11th grade continues to do well drug-free.

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ADHD and chronic GI problems
Patient History

- Nov 2013 1st visit: 9 ½ yr old female on zantac for 7 years, stimulant for ADHD for 5 ½ years
- Fall 2012 Evaluation by pediatric GI at regional academic center for GI problems – "celiac ruled out with blood test" and rx continued zantac
- History included + for 8 symptoms of gluten sensitivity (Rodney Ford) and + 16 symptoms "moderate" on Candida Questionnaire (William Crook in The Allergy & Asthma Cure by Fred Pescatore MD 2003)
- Clinical impression: Probable gluten sensitivity and candida (yeast) overgrowth

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Patient History
Lab results

- Cyrex Array 3 gluten panel showed elevation in six wheat/gluten related epitomes including wheat germ agglutinin IgG, Alpha Gliadin 17-mer IgG, Omega Gliadin 17-mer IgG, Transglutaminase-2 IgG, Transglutaminase-6 IgG, and equivocal for Transglutaminase-3 IgG.
- *The elevated transglutaminase antibodies*

  suggested celiac disease
- IgG food panel *** reactivity for egg, dairy, and gluten/wheat

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Patient History

Intervention

- GFCFEF diet (gluten, casein, egg) diet, digestive enzymes, probiotic, Amazon AF herbal anti-yeast, vitamin D 6,000 units/day with vitamin K2 90 mcg/day, magnesium
- Wean off zantac and concerta with assistance of primary care pediatrician

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Patient History
Outcome

- Full implementation of diet and supplements by late January, 2014
- Follow-up March 24, 2014:
  - Completely weaned off zantac and concerta for past month – teacher NOT informed
  - School behaviors improved to point that teacher unsolicited commented "(Pt) is ***doing much better – you must have adjusted her dose of medication***."
  - GI symptoms virtually resolved
  - M observed that pt's bad breath had improved and clinical improvement followed giving the AF herbal remedy.

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Summary

- Drug Treatment driven by pseudo-science
- Academic literature dominated by uncritical, Big Pharma funded and conducted studies, and short term studies
- No long-term studies supporting drug effectiveness
- Drug side effects (depression) labeled “co-morbid” justifying additional drugs
- Nutritional and common-sense solutions ignored, falsely claimed proven “not to cause ADD”

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Disease, Food, and Medicine

"Let food by thy medicine and medicine be thy food"

- - - Hippocrates

"The doctor of the future will give no medicine, but will interest his patients in the care of the human frame, in diet, and in the cause and prevention of disease."

- - - Edison (around 1902)

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