

# July 2014 Website Updates

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# AD/HD and Risky Behavior

- **AD/HD children and adolescents are much more at risk of substance abuse, risky sexual behavior obesity and binge eating than their non-disabled peers.**
- **AD/HD individuals are 1.5 times more at risk of substance abuse disorder regardless of demographics.**
- **They start using substances earlier, become dependent significantly faster have significantly less remittance.**
- **AD/HD people smoke 2 to 3 times more.**
- **Rates are even higher for those with comorbid Oppositional Defiant Disorder and/or Conduct Disorder**

# AD/HD and Risky Behavior

- Those with AD/HD have higher average weight and significantly more obesity
- They have more unwanted pregnancies, become sexual significantly earlier, have more partners, more sexually transmitted diseases and use contraceptives less than non-AD/HD youth
- Impulsivity is connected to risk-taking behaviors
- Inattention connected to not being self-aware and concerned about long-term outcomes.
- Those with AD/HD may be less able to attend to signals of hunger and satiation than their non-AD/HD peers.

# AD/HD and Risky Behavior

- AD/HD dopamine deficiencies have been linked to bingeing and obesity, delay aversion and poor response inhibition
- Using stimulant medication with those with AD/HD can reduce overeating and substance abuse
- Programs that focus on the academic success and family functioning of AD/HD youth have been shown to be most successful in helping with the above.
- Psychoeducation of youth with AD/HD should start very early regarding healthy eating, exercise, substance abuse and sexual development

# Reference

**Schoenfelder, E. N., and Kollins, S.H. (June, 2014). Prevention of Health Risk Behaviors in ADHD Youth: Is ADHD Treatment Enough? The ADHD Report, 22(4), 1-7.**

# AD/HD and Multisensory Education Tools

**Using multisensory education tools (sounds, texts, aural presentation, pictures, etc.) helps those with AD/HD retain knowledge over longer periods of time than not using them.**

Fabio, R.A., and Antonietti, A. (June, 2014). Hypermedia Tools Enhance Learning in AD/HD Students. The ADHD Report, 22(4), 8-9.

# Motor Delays in AD/HD Subtypes

- **50 years of research has demonstrated those with AD/HD have motor deficits**
- **Researchers found young children with Combined Type AD/HD have and Inattentive AD/HD have the same amount of motor deficits**
- **The Inattentives showed more motor difficulties when they were older than the Combined Types**
- **Inattentives may be identified later than Combined types and thus receive treatment later and/or they may have different neuromotor difficulties**

Vasserman, M., Bender, H.A., and MacAllister, W. S. (2014). Motor Skills Development in Children With . Inattentive Versus Combined Subtypes of ADHD. Applied Neuropsychology: Child, 3(2), 141-151. DOI: 10.1080/21622965.2012.759466

# Time Perception in Animals

- **The smaller the species and higher it's metabolism the quicker it experiences the passage of time.**
- **Prey species appear to experience the passage of time faster than predator.**

Healey, K., McNally, L., Ruxton, G.D., Cooper, N., and Jackson, A.L. (October, 2013). Metabolic rate and body size are linked with perception of temporal information. *Animal Behavior*, 86(4), 685-696.  
DOI: 10.1016/j.anbehav.2013.06.018.



# The Brain, Time, Space and Social Relationship

**The right inferior parietal lobule appears to process spatial, temporal and social proximity to self.**

Parkinson, C., Liu, S., and Wheatley, T. (January 29, 2014). A Common Cortical Metric for Spatial, Temporal, and Social Distance. Journal of Neuroscience, 34(5), 1979-1987. 10.1523/JNEUROSCI.2159-13.2014.

# AD/HD: Time Duration & Delayed Gratification

- **Children without AD/HD do not differ from those with AD/HD in the estimation in the duration of time that has past and delay of gratification.**
- **However, if someone has problems with temporal processing ability they have a strong tendency of having problems with delayed gratification whether they are AD/HD, or not they are AD/HD.**

Reinelt, T., Wirth, A., Rauch, W., and Gawrilow, C. (March 21, 2014). Duration Discrimination Predicts Delay of Gratification In Children with and without ADHD. Procedia-Social and Behavioral Sciences, 126, 220-221. DOI: 10.1016/j.sbspro.2014.02.383.

# Body Map of Emotional Sensations

**Finish researchers asked several hundred people from all over the world to draw where they experience certain emotions in their bodies. There appears to be specific body maps of sensations experienced when individuals experience specific emotions. Research thus far has suggested these maps are cross cultural and are hard wired. This knowledge may eventually be able to help mental health professionals better know how clients are feeling and may help to diagnose mental health disorders.**

**Nummenmaa, L., Glerean, E. Hari, R., and Hietanen, J.K. (December 30, 2013). Body Maps of Emotions. Proceedings of the National Accademy of Sciences of the United States of America. DOI: 10.1073/pnas.1321664111**

# Research on Foreign Language Learning

- **Having foreign language learners repeatedly listen to phonemes that may sound the same to them of the language they are trying to learn and providing feedback at the same time helps faster learning to occur.**
- **Having students listen to several people saying the same word over and over of a foreign language with different accents, dialects, etc. facilitates learning.**
- **Video games may be helpful as may be boosting working memory and attention span through training before beginning foreign language learning.**

Wyner, G. (July/August, 2014) How to Teach Old Ears New Tricks. Scientific American Mind, 25(4), 25-25.

# Fish Oil and AD/HD

- **A recent study determined that fish oil does not lower aggression rates in children with disruptive behavior disorders.**
- **Vayarin (a special EPA approved omega 3 fatty acid food) improved 60% of the childrens' symptoms with AD/HD after 3 months. However, it may be cost prohibitive to use, take too long to get a response and many children refuse to take it because of it's very bad taste.**

Dean, A., Bor, W., Adam, K., Bowling, G. and Bellgrove, M. (April, 2014). A Randomized, Controlled, Crossover Trial of Fish Oil Treatment for Impulsive Aggression in Children and Adolescents with Disruptive Behavior Disorders. *Journal of Child and Adolescent Psychopharmacology*. April 2014, 24(3): 140-148. doi:10.1089/cap.2013.0093.

Nguyen, S, et al. (April 8, 2014). Efficacy of EPA Enriched Phosphatidylserine-Omega-3 (Vayarin) on Children with ADHD (P7.336). *Neurology*, 82(10-Suppliment P7.336). From website: [http://www.neurology.org/content/82/10\\_Supplement/P7.336](http://www.neurology.org/content/82/10_Supplement/P7.336).

# Sluggish Cognitive Tempo and Social/Emotional Adjustment

- **Students with AD/HD and SCT had higher rates of AD/HD symptoms, depression/anxiety, emotional regulation difficulties and social adjustment concerns than those without SCT.**
- **They also had problems with social impairment but not a global social interaction problem.**

Flannery, A.J., Becker, S.P., and Luebbe, A.M. (April 1, 2014). Does Emotion Dysregulation Mediate the Association Between Sluggish Cognitive Tempo and College Students' Social Impairment? Journal of Attention Disorders, 18(6). DOI: 10.1177/1087054714527794.

# More on Sluggish Cognitive Tempo

- **Symptoms seen in SCT appear different from those seen in the inattention seen in AD/HD.**
- **SCT appears to be a distinct and separate disorder from AD/HD.**

Garner, A.A., et al. (July 8, 2014). Does Sluggish Cognitive Tempo Fit Within a Bi-Factor Model of ADHD? [Journal of Attention Disorders](https://doi.org/10.1177/1087054714539995). DOI: 10.1177/1087054714539995.

# Neural Patterns, Working Memory and AD/HD

**Those with AD/HD appear to have a hyperactivation of the striatum and mediotemporal regions of the brain while conducting tasks that involve categorization and working memory. This knowledge may some day be used to aid in diagnosing AD/HD.**

**Yuanyuan, L., Fei, L., Ning, H., Lanting, G., Huang, X., Su, L., and Qiyong, G. (August 4, 2014). Neural hyperactivity related to working memory in drug-naive boys with attention deficit hyperactivity disorder. Progress In Neuro-Psychopharmacology and Biological Psychiatry, **53**, 116-122. DOI: [10.1016/j.pnpbp.2014.03.013](https://doi.org/10.1016/j.pnpbp.2014.03.013).**



# The Quotient AD/HD Test

This is a Food and Drug Administration Approved objective test of impulsivity, hyperactivity and inattentiveness that is normed for individuals 5 to 55. The patient sits at a computer terminal and dons sensors on their head and legs that the computer can use to track their movements while they take the test. The test is similar to a continuous performance test (CPT). This test is sold through Pearson. In my opinion more research needs to be done on this test before it is ready for primetime. Also it should never be used without a traditional AD/HD assessment to determine diagnosis.

<http://www.quotient-adhd.com/>

# Tobacco, Nicotine Patches, Pregnancy and AD/HD

**Researchers discovered that although the link between prenatal maternal tobacco use may have a causal link to future AD/HD the link may not be as strong as once thought. They also found that pregnant mothers who substitute nicotine patches for tobacco use may also increase the chances their child will develop AD/HD.**

Zhu, J.L., Olsen, J, Liew, Z., Li, J., Niclasen, J., and Obel, C. (July 21, 2014). Parental Smoking During Pregnancy and ADHD in Children: The Danish National Birth Cohort. [Pediatrics](https://doi.org/10.1542/peds.2014-0213). DOI: 10.1542/peds.2014-0213.

# Parkinson's Disease & AD/HD

**Mutations to the sodium-coupled dopamine transporter have been linked to early-onset Parkinson's Disease and to increase the risk of having AD/HD. This may also lead to a risk of substance addiction.**

Hansen, F.H., et al. (July 1, 2014). Missense dopamine transporter mutations associate with adult parkinsonism and ADHD. [The Journal of Clinical Investigation](#), **124(7)**, 3107-3120. DOI: 10.1172/JCI73778.

# Disabled Preschoolers and Language Development

**Disabled preschoolers benefit most in language development when placed in classes with linguistically typically developing preschoolers.**

**Justice, M. J., Logan, J.A.R., Tzu-Jing, L., and Kaderavek, J.N. (July 25, 2014). Peer Effects in Early Childhood Education: Testing the Assumptions of Special-Education Inclusion. Psychological Science. DOI: 10.1177/0956797614538978.**

# Good Classroom Acting Out

**Having children act out what they read and learn in class can help them better understand and learn what they have been taught. It allows multisensory learning and can be done physically and/or by computer programs.**

Glenberg, A. (July 22, 2014). How Acting Out in School Boosts Learning: Insights from embodied cognition. Scientific American. From website: <http://www.scientificamerican.com/article/how-acting-out-in-school-boosts-learning/>.

# Reading Skills and IQ

**Having good reading skills as a child is correlated to having a higher IQ; even in identical twins. Reading may help children better develop their imagination, abstract thinking, problem solving skills more than not reading.**

**Ritchie, S.J., Bates, T.C., and Pomin, R. (July 24, 2014). Does Learning to Read Improve Intelligence? A Longitudinal Multivariate Analysis in Identical Twins From Age 7 to 16. Child Development. DOI: 10.1111/cdev.12272.**

# 4<sup>th</sup> Grade Shift Learning to Read Vs. Reading to Learn

**Most research to date indicates that most children crack the code of learning to read by fourth grade. Hence, fourth grade curriculums assume most children can read and thus can read to learn. New research indicates most children develop at different rates at cracking the code with automatic word, pseudo-word and non-word processing and this can occur between third and fifth grades. This was established by using evoked potential recording of the N 400 brain waves.**

**Coch, D. (July 16, 2014). The N400 and the fourth grade shift. Developmental Science. DOI: 10.1111/desc.12212.**

# VWFA and Visual Stimuli

**The Visual Word Form Area (VWFA) of the left hemisphere of the brain primary function is to process complex visual stimuli in groups not words, per se. It turns out the VWFA is activated because individual words are complex visual stimuli. The VWFA is part of a community of brain areas coopted to help with reading processing.**

**Vogel, A.C., Petersen, S.E. and Schlagger, B.L. (March 20, 2014). The VWFA: It's Not Just For Words Anymore. Frontiers in Human Neuroscience. DOI: 10.3389/fnhum.2014.00088.**



# Research on First Grade Math Curriculum

**It was found that direct instruction and drill was significantly better than manipulatives/calculators and movement/music to teach mathematics.**

**Morgan, P.L., Farkas, G., and Maczuga, S. (2014). Which Instructional Practices Most Help First-Grade Students With and Without Mathematics Difficulties? Educational Evaluation and Policy Analysis, 20(10), 1-22. DOI: 10.3102/0162373714536608.**

# Is There More than One Good Reading Strategy?

**Diffusion Tensor Imaging (DTI) was used to determine how good readers read aloud and understand what they read. Results indicate good readers have a variety of ways to process what they read that matches their unique neuroanatomy.**

Graves, W.W., et al. (June, 2014). Anatomy is strategy: Skilled reading differences associated with structural connectivity differences in the reading network. Brain and Language, 133, 1-13: DOI: 10.1016/j.bandl.2014.03.005.

# AD/HD Parents, Parenting Skills and Medication

**Parents with AD/HD placed on Vyvanse had better parenting skills and their children has less negative behaviors than parents with AD/HD taking placebos.**

Author (July 30, 2014). Parenting Skills Improve in ADHD Parents with Medication. [Penn State Hershey Newsroom](https://pennstatehersheynewsroom.org/blog/2014/07/30/parenting-skills-improve-in-adhd-parents-with-medication/). From website: <https://pennstatehersheynewsroom.org/blog/2014/07/30/parenting-skills-improve-in-adhd-parents-with-medication/>.

# Dyslexia, Kiaa019 Gene and Phonological Processing

**A knockout gene study in rats removing the Kiaa019 gene thought to control phonological processing in humans did indeed cause significant problems in phonological processing in rats. Hence, it appears the Kiaa019 gene may cause the phonological processing problems in human dyslexics.**

**Centanni, T.M., et al. (2014). Knockdown of the Dyslexia-Associated Gene *Kiaa0319* Impairs Temporal Responses to Speech Stimuli in Rat Primary Auditory Cortex. Cerebral Cortex, 24(7), 1753-1766. DOI: 10.1093/cercor/bht028.**

# Long-Term Effects of Fetal Alcohol Syndrome

**Researchers may have found the long-term effects of prenatal alcohol exposure appears to impair the development of visuospatial attention in those with Fetal Alcohol Syndrome. This may explain the neurology behind the attentional difficulties those with FAS tend to have.**

**Gautam, P., et al. (August 4, 2014). Developmental Trajectories for Visuo-Spatial Attention are Altered by Prenatal Alcohol Exposure: A Longitudinal fMRI Study. Cerebral Cortex. DOI: 10.1093/cercor/bhu162.**

# Genetics and Specific Learning Disorders

**Scientists discovered in a large longitudinal study of identical twins that about 50 percent of the variance in math and reading disorders is directly related to genetics.**

**Davis, O.S.P., et al. (2014). The correlation between reading and mathematics ability at age twelve has a substantial genetic component. Nature Communications. DOI: 10.1038/ncomms5204.**

# Three Types of Personalities Found in AD/HD Children

**Researches found three subtypes of temperament in Children with AD/HD They believe are biologically based:**

- 1. Normal emotion regulation**
- 2. Extreme positive approach motivation**
- 3. Extreme levels of anger**

**Karalunas, S.L., et al. (July 9, 2014). Subtyping Attention-Deficit/Hyperactivity Disorder Using Temperament Dimensions : Toward Biologically Based Nosologic Criteria. JAMA Psychiatry. DOI: 10.1001/jamapsychiatry.2014.763.**

# Sleep Problems & AD/HD

**Many children with AD/HD have transient sleep problems, but about 10% have persistent ones. The greater the severity of AD/HD symptoms, and/or number of comorbidities the greater the risk of persistent sleep problems. Children with AD/HD should be screened for and treated for sleep problems if they have them.**

Lycett, K., et al. (June 25, 2014). A prospective study of sleep problems in children with ADHD. [Sleep Medicine](https://doi.org/10.1016/j.sleep.2014.06.004). DOI: 10.1016/j.sleep.2014.06.004



# Lead and Behavior Problems in Chinese Children

**What is typically considered moderate level of lead in the blood can lead to internalizing and behavioral problems in children Chinese researchers found.**

**Jianghong, L., et al. (August 2014). Blood Lead Concentrations and Children's Behavioral and Emotional Problems: A Cohort Study. JAMA Pediatrics, 168(8), 737-745. DOI: 10.1001/jamapediatrics.2014.332.**