



Live Seminar Update October 2013

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Neba Health AD/HD EEG Diagnosis

“Abundant evidence exists for abnormal electroencephalogram (EEG) patterns occurring in this disorder (AD/HD, sic). While such findings are pertinent to the neurobiological etiology of ADHD, they also speak to the possibility that EEG measures might be useful for clinical diagnosis. The most common finding in children and adults with the disorder is increased fronto-central...”

Neba Health AD/HD EEG Diagnosis

“...theta band activity, believed to be associated with arousal...An earlier meta-analysis of EEG studies...found an effect size difference between ADHD and control groups of 1.31, which is substantial, with an average of 32% excess theta band power in the ADHD group...Results of some research examining the predictive accuracy of this ratio for diagnosis of ADHD generally find 85-95%...

Neba Health AD/HD EEG Diagnosis

“accuracy rate but with 16-18% of ADHD cases being misclassified as normal ratios...increased theta band activity has also been associated with other disorders such as bipolar and substance used disorders and may not be specific to ADHD and that theta/beta ratio cannot identify comorbidities in cases having ADHD, thus making it a poor stand-alone measure for diagnosis” (p. 15)

Reference

Barkley, R.A. (September, 2013). A Cautionary Note About Using the EEG for Clinical Diagnosis of ADHD. The ADHD Report, 21(6), 15.

QEEG, Diagnosis and AD/HD

“We found both distinct and common task-related neurophysiological impairments in ADHD subtypes. Our results suggest that task-induced changes in EEG oscillations provide an objective measure, which in conjunction with other sources of information might help distinguish between ADHD subtypes and therefore aid in diagnoses and evaluation of treatment.”

Reference

**Mazaheri, A. et al. (October 11, 2013).
Differential Oscillatory Electroencephalogram
Between Attention-Deficit/Hyperactivity
Disorder Subtypes and Typically Developing
Adolescents. Biological Psychiatry,
doi:10.1016/j.biopsych.2013.08.023.
Published online.**

AD/HD, CD and Substance Use

“Our findings demonstrate that although comorbid CD predicted worse ADHD outcomes, there was a significant interaction such that adolescents with CD who were treated with medication had significantly better substance use outcomes than those that received placebo” (p. 3).

Tamm, L., et al. (September, 2013). Predicting Treatment Response in Adolescents with ADHD and Who Use Substances. The ADHD Report, 21(6), 1-5.

Stimulant Medication, Substance Abuse & AD/HD

“These results provide an important update and suggest that treatment of attention-deficit/hyperactivity disorder with stimulant medication neither protects nor increases the risk of later substance use disorders (p. 740).

Humphreys, K. et al. (July, 2013). Stimulant Medication and Substance Use Outcomes: A Meta-analysis. Journal of the American Medical Association Psychiatry, 70(7), 740-749. doi:10.1001/jamapsychiatry.2013.1273.

AD/HD, Inattentive Presentation (Restrictive) Not in DSM-5

“Although the DSM committee did not provide a specific rationale for dropping the inattentive (restrictive) presentation, it is telling that many of the work group’s proposals that may have increased the prevalence of ADHD were not included in the DSM-5. For example, the proposal to generate a new criteria set to use with adults was also dropped, perhaps because doing so would increase prevalence rates among adults” (p. 14)

Reference

**Roberts, W., and Milich, R. (September, 2013).
Follow-up Comments on DSM-5: A Further
Step Backward! The ADHD Report, 21(6), 14.**

AD/HD and Trusting Behavior

“Results: Investments were higher in ADHD participants than in healthy participants except for partners who played fair with constant neutral expressions. ADHD patients did not adapt their behavior to the fairness of the trustee. In the presence of emotional facial cues, ADHD and healthy participants transferred more monetary units to happy rather than angry-looking trustees. Differences in investment behavior were not linked to deficits in emotion-recognition abilities or cognitive dysfunctions. Conclusion: Alterations in interaction behavior and in the formation of a general attitude toward social partners could be shown in adults with ADHD”.

Reference

Lis, S., et al. (April 5, 2013). Social Interaction Behavior in ADHD in Adults in a Virtual Trust Game. Journal of Attention Disorders, doi: 10.1177/1087054713482581.

White Matter Differences in Adults with AD/HD

“Decreased FA (fractional anisotropy, sic.) in adults with childhood ADHD regardless of current ADHD might be an enduring trait of ADHD. White matter tracts with decreased FA connect regions involved in high-level as well as sensorimotor functions, suggesting that both types of processes are involved in the pathophysiology of ADHD.”

Reference

Cortese, S., et al. (October 15, 2013). White matter alterations at 33-year follow-up in adults with childhood attention-deficit/hyperactivity disorder. Biological Psychiatry, 74(8), 591-598. doi: 10.1016/j.biopsych.2013.02.025. Epub 2013 Apr 6.

fMRI, Inhibition & AD/HD

“Patients with ADHD have consistent functional abnormalities in 2 distinct domain-dissociated right hemispheric fronto-basal ganglia networks, including the inferior frontal cortex, supplementary motor area, and anterior cingulate cortex for inhibition and dorsolateral prefrontal cortex, parietal, and cerebellar areas for attention. Furthermore, preliminary evidence suggests that long-term stimulant medication use may be associated with more normal activation in right caudate during the attention domain” (p. 185).

Reference

**Hart, H. et al. (February, 2013). Meta-analysis of Functional Magnetic Resonance Imaging Studies of Inhibition and Attention in Attention-deficit/Hyperactivity Disorder: Exploring Task-Specific, Stimulant Medication, and Age Effects. Journal of the American medical Association Psychiatry, 70(2), 185-198.
doi:10.1001/jamapsychiatry.2013.277.**

AD/HD and Extended Time Testing

“Extra time conferred an advantage to the ADHD group, suggesting that extended time accommodations are not specific and perhaps not necessary for all college students with an ADHD diagnosis”.

de Miller, L. A., Lewandowski, L. J., Antshel, K. M. Journal of Attention Disorders April 16, 2013 1087054713483308

AD/HD Genotype and Medication

“This meta-analysis indicates that SLC6A3 VNTR is not a reliable predictor of methylphenidate treatment success in ADHD. Our study leaves unanswered the question of whether other genetic polymorphisms or nongenetic factors may contribute to the observed heterogeneity in treatment response across ADHD subjects”

Reference

Kambeitz, J., et al. (April 16, 2013). Meta-analysis of the association between dopamine transporter genotype and response to methylphenidate treatment in ADHD. Pharmacogenomics. doi: 10.1038/tpj.2013.9. [Epub ahead of print]

Does Cogmed Work with AD/HD?

“Critical issues in interpreting existing studies include lack of alignment between demonstrated outcomes and the hypothesized model of therapeutic benefit of CWMT (Cogmed Working Memory Training, sic.), issues with equivalence of control conditions, and individual differences that may moderate treatment response. Collectively, the strengths and limitations of the studies reviewed suggest that CWMT is best defined as a Possibly Efficacious Treatment for youth with ADHD.”

Reference

**Chacko, A., et al. (2013). Cogmed working memory training for youth with ADHD: a closer examination of efficacy utilizing evidence-based criteria. Journal of Clinical Child and Adolescent Psychology. From website:
<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0056567/>.**

Reference

“This introduction to the Second Special Issue on Evidence-Based Psychosocial Treatments for Children and Adolescents provides background information on the development of this 10-year update and explains how this issue expands on the initial special issue on “empirically supported psychosocial treatments” published in 1998. The introduction also provides a summary of the contents of the present issue and the information covered in the articles contained herein. Also summarized are the criteria used to evaluate the level of evidence for each treatment, as well as the criteria used to evaluate the methodological rigor of the studies that are reviewed. The introduction concludes with comments about the advances that have been made in the past decade, with the hope that this second special issue will serve to stimulate further research and expansion of the evidence base for child and adolescent psychosocial treatments to ameliorate youth clinical problems”(p. 1).

Reference

Silverman, W.K., et al. (2008). The Second Special Issue on Evidence-Based Psychosocial Treatments for Children and Adolescents: A 10-Year Update. Journal of Clinical Child and Adolescent Psychiatry, 37(1), 1-7. From website:

<http://www.tandfonline.com/doi/abs/10.1080/15374410701817725>.

More on SCT

“Youth with ADHD-IT high in SCT exhibited uniquely elevated withdrawal, as well as low leadership and low peer-directed relational and overt aggression, which were not accounted for by co-occurring disorders. This high-SCT group was also the only group to have more homework problems than the ADHD-CT group, but only when other disruptive behavior disorders were absent. The distinctiveness of the high-SCT group, which was primarily evident in social as opposed to academic functioning, provides partial support for the external validity and clinical utility of SCT”.

Reference

Marshall, S.A., et al. (May 25, 2013). Social and Academic Impairment in Youth with ADHD, Predominately Inattentive Type and Sluggish Cognitive Tempo. Journal of Abnormal Child Psychology. DOI: 10.1007/s10802-013-9758-4.

Cortical Thickness, Development and AD/HD

“Notably, cortical thickening or minimal thinning (greater than $-.007$ mm/year) was found exclusively among individuals who remitted...Adult ADHD status is linked with the developmental trajectories of cortical components of networks supporting attention, cognitive control, and the default mode network. This informs our understanding of the developmental pathways to adult ADHD” (p. 599).

Reference

Shaw, P., et al. (October 15, 2013). Trajectories of cerebral cortical development in childhood and adolescence and adult attention-deficit/hyperactivity disorder. Biological Psychiatry, 74(8), 599-606. DOI: 10.1016/j.biopsych.2013.04.007. Epub 2013 May 28.

Antisocial Behavior & AD/HD

“The high-activity *COMT* genotype in ADHD is associated with antisocial behavior in part via impaired social understanding. Impaired executive control was also associated with the high-activity *COMT* genotype but may not lie on the risk pathway to antisocial behavior. The findings demonstrate the importance of testing links between genotype, intermediate phenotype, and clinical outcome in the same sample to identify potential risk pathways” (p.1317-1323).

Reference

**Langley, K., et al. (December 6, 2010).
Genotype Link With Extreme Antisocial
Behavior: The Contribution of Cognitive
Pathways. Archives of General Psychiatry,
67(12):1317-1323.
DOI:10.1001/archgenpsychiatry.2010.163.**

AD/HD Neuroanatomy in Adults

“Anatomic gray matter reductions are observable in adults with childhood ADHD, regardless of the current diagnosis. The most affected regions underpin top-down control of attention and regulation of emotion and motivation. Exploratory analyses suggest that diagnostic remission may result from compensatory maturation of prefrontal, cerebellar, and thalamic circuitry”(p. 1122).

Reference

Proal, E., et al. (November, 2011). Brain Gray Matter Deficits at 33-Year Follow-up in Adults With Attention-Deficit/Hyperactivity Disorder Established in Childhood. Archives of General Psychiatry, 68(11), 1122-1134. DOI: 10.1001/archgenpsychiatry.2011.117.

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Long-term Outcome of AD/HD Children

“The multiple disadvantages predicted by childhood ADHD well into adulthood began in adolescence, without increased onsets of new disorders after 20 years of age. Findings highlight the importance of extended monitoring and treatment of children with ADHD” (p. 1295).

Klien, R.G., et al. (December, 2012). Clinical and Functional Outcome of Childhood Attention-Deficit/Hyperactivity Disorder 33 Years Later . Archives of General Psychiatry, 69(12), 1295-1303. DOI: 10.1001/archgenpsychiatry.2012.271.

Long-Term Effects of Stimulant Medication

“Patients with ADHD have consistent functional abnormalities in 2 distinct domain-dissociated right hemispheric fronto-basal ganglia networks, including the inferior frontal cortex, supplementary motor area, and anterior cingulate cortex for inhibition and dorsolateral prefrontal cortex, parietal, and cerebellar areas for attention. Furthermore, preliminary evidence suggests that long-term stimulant medication use may be associated with more normal activation in right caudate during the attention domain” (p. 185).

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Long-term Neurological Follow-up of AD/HD

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archgenpsychiatry.2011.117.**

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Antisocial Behavior, COMT Genotype & AD/HD

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doi:10.1001/archgenpsychiatry.2010.163.**

Autism Spectrum Disorder and Celiac Disease

“Although this study found no association between CD (Celiac Disease, sic.) or inflammation and earlier ASDs, there was a markedly increased risk of ASDs in individuals with normal mucosa but a positive CD serologic test result.”

Ludvigsson, J. et al. (September 25, 2013). A Nationwide Study of the Association Between Celiac Disease and the Risk of Autistic Spectrum Disorders. Journal of the American Medical Association Psychiatry, doi:10.1001/jamapsychiatry.2013.2048. Published online.

Predicting AD/HD Behavior in Pre-school

“Parent and clinician, but not teacher, behavior ratings were significant independent predictors of ADHD diagnosis and severity at 6-years-old. However, only clinician reports of preschoolers’ behaviors predicted laboratory measures of over-activity and inattention at follow-up. Cross-situationality is important for a diagnosis of ADHD during the preschool years. Among parents, teachers and clinicians, positive endorsements from all three informants, parent/teacher or parent/clinician appear to have prognostic value. Clinicians’ ratings of preschoolers’ inattention, impulsivity and hyperactivity are valid sources of information for predicting ADHD diagnosis and severity over time”.

Reference

O'Neill, S. et al. (October, 2013). Reliable Ratings or Reading Tea Leaves: Can Parent, Teacher, and Clinician Behavioral Ratings of Preschoolers Predict ADHD at Age Six? Journal of Abnormal Child Psychology. DOI: 10.1007/s10802-013-9802-4.

Oxytocin Spray and ASD

“Unlike medications taken orally, intravenously or otherwise, those sniffed up the nose gain direct access to the brain. Recent findings that intranasal administration is indeed safe and effective – and a revamped delivery system more elegant than a rolled-up twenty – have inspired a new appreciation of the sniff...”

Oxytocin Spray and ASD

“...The secret to the nose’s potential lies in the nerve fibers embedded in its tissue. The nasal cavity houses the endings of nerves that connect to the brain stem and olfactory bulb. Chemicals traveling through or alongside these fibers can bypass the intimidating blood brain barrier. Consisting of tight cellular junctions, this barrier prevents most molecules in the bloodstream from reaching the brain...”

Oxytocin Spray and ASD

“...The barrier keeps pathogens out; however, it also limits the types of medications used to treat brain disorders. Intranasal delivery thus opens the door to entire new classes of therapeutic molecules –or even therapeutic cells” (p. 14).

Oxytocin Spray and ASD

**The Status of Using Oxytocin Spray for ASD:
“Efficacy studies have yielded inconsistent results. Researchers are currently investigating whether the genotypes of patients can explain the variability in how they respond to treatment” (p. 14).**

Shure, C. (November/December, 2013). A Sniff of Therapy: Nasal Sprays May Open The Door For New Medications. Scientific American Mind, 24(5), 14.