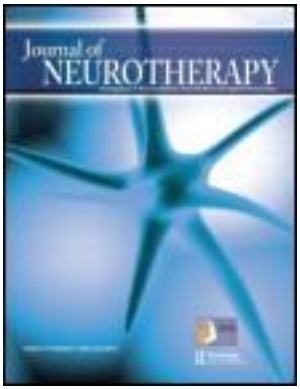

Journal of Neurotherapy: Investigations in Neuromodulation, Neurofeedback and Applied Neuroscience

News from Other Journals and Websites

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NEWS FROM OTHER JOURNALS AND WEBSITES

David Kaiser, PhD, Editor

Our journal club continues this month with a review of another journal's issue dedicated to neurofeedback, some (weak) evidence against the utility of nonlinear methods for EEG analysis, and the effects of stimulant medication therapy on TOVA scores. A list of online resources that provide free full-text journal articles is also provided.

Authors are encouraged to submit reprints or preprints of recent research for review in this section. Everyone is encouraged to submit reviews of peer-reviewed papers of interest to the Journal of Neurotherapy's readership. Website recommendations are also requested. Contact David A. Kaiser, PhD, at dakaiser@skiltopo.com or P.O. Box 491956, Los Angeles, CA 90049.

RECENT MUST-READ PAPERS

Special Issue on AD/HD, QEEG, Neurotherapy and Hypnosis. *Child Study Journal* (Summer 2000).

This article reviews the second *Child Study Journal* special issue (Summer 2000) devoted entirely to ADHD, QEEG, neurotherapy and hypnosis. The *Child Study Journal*, now in its 31st year as a quarterly publication, is devoted to the educational and psychological aspects of child development. This special issue focuses on both QEEG markers of Attention Deficit Disorder in articles by Barry Sterman, Arreed Barabasz and Marianne Barabasz as well as the effects of neurotherapy using alert hypnosis as an adjunctive technique in articles senior authored by Dennis Warner and Kathryn Ander-

son. The criteria for warranting a special issue of the internationally abstracted *Child Study Journal* include the requirement of significant findings, which shed new light on a major area of child development. This is the second time that QEEG, neurotherapy, and hypnosis as applied to the diagnosis and treatment of Attention Deficit/Hyperactivity Disorder (ADHD) has been selected as a special issue topic (the first appeared in 1996, Vol. 26, No. 1).

In the lead article (Sterman, 2000), M. Barry Sterman, Ph.D., of the UCLA School of Medicine, the man responsible for the breakthrough that began neurotherapy (Sterman & Friar, 1972), provides a comprehensive, highly useful and thoroughly referenced article explaining how quantitative EEG (QEEG) can and should be used in the diagnosis and treatment of ADHD. Beginning with an intriguing historical perspective, Dr. Sterman shows how topographic QEEG has disclosed several distinct patterns of abnormality in children diagnosed with ADHD, and has provided improved guidelines for pharmacological treatment. The article pinpoints the shortcomings of the DSM, beginning with the first introduction of the term "Attention Deficit Disorder" in the DSM II and continuing through the DSM IV (APA, 1994), which is used today as the primary diagnostic tool for ADHD. Indeed, while the conceptualization of ADHD as a physiological disorder has been accompanied by the discovery of a high incidence of unusually slow EEG patterns in these children as early as 1938 (Solomon, Bradley & Jasper, 1938) all revisions of the DSM, despite updating, rely entirely on a defined constellation of subjectively observed behavioral characteristics in the home, at school and in social situations to diagnose the disorder. Dr. Sterman provides a comprehensive survey of properly controlled research leading to the current ability to distinguish children with the disorder from controls with a specificity of 88% and a sensitivity of 93.7%. Furthermore, it is shown that QEEG features could be used to select the most appropriate medication. Together, the findings reviewed are robust in providing objective evidence that QEEG can serve as a reliable biological marker of ADHD, and that several different neurophysiological subtypes can be identified. Examples of actual EEG tracings taken by Dr. Sterman are provided showing that these deviant patterns literally jump out of studies of children with ADHD. Key background information on what to look for in topographic brain mapping is also highlighted before providing sections on other biological markers of the disorder and a section on the etiology of abnormal EEG patterns in those with ADHD.

The final section reviews treatment alternatives and provides a comprehensive basis for the use of neurotherapy. While it remains true that a number of studies of neurotherapy have relatively small numbers of subjects and some lack robust controls, Dr. Sterman shows how the results of neurotherapy have been consistent and impressive by comparison with pharmacological and other behavioral treatments.

The next article in this special issue (Barabasz & Barabasz, 2000) focuses on how to treat ADHD with alert hypnosis and neurotherapy. Traditional behavioral observation diagnostic procedures for ADHD are fraught with complications because the target behavioral symptoms are found in a variety of other disorders. The many-decades-old traditional treatments consisting of powerful side-effect-laden psychostimulant drugs and/or complex costly behavioral modification programs are at best symptom-focused and palliative in nature. The article brings together recent diagnostic and treatment advances derived from the neurological basis of the disorder and further establishes the basis for the use of QEEG and neurotherapy as the habilitative treatment of choice. This article also presents the procedural details of our Instant Alert Hypnosis (IAH) procedure also known as Instantaneous Neuronal Activation Procedure (INAP) as an adjunct to neurotherapy in the treatment of ADHD. ADHD diagnostic issues, demographics, traditional treatments, neurological basis, EEG assessment and implications for the use of hypnosis are discussed. Recent research investigations demonstrating the efficacy and promise of neurotherapy with and without Instant Alert Hypnosis are reviewed.

Other articles evaluate the effects of Alert Hypnosis with neurotherapy on beta/theta ratios (Anderson, Barabasz, Barabasz & Warner, 2000) and the effects of IAH as an adjunct to neurotherapy on the basis of behavioral criteria (Warner, Barabasz, & Barabasz, 2000). (*Reviewed by Arreed Barabasz, PhD*)

Copies of the *Child Study Journal*, *Special Issue on ADHD*, are available for $7.50 in the USA from Dr. Donald E. Carter; Editor, *Child Study Journal;* State University of New York; 1300 Elmwood Avenue; Buffalo, NY 14222.

EEG AND NEUROIMAGING

Pritchard, W.S., & Stam, C.J. (2000). Nonlinearity in human resting, eyes-closed EEG: an in-depth case study. *Acta Neurobiologiae Experimentalis*, *60*, 109-121.

Since linear methods of EEG analysis are better behaved, better understood, and computationally faster than nonlinear methods, nonlinear analysis must provide new and relevant information about an EEG signal. However, no difference was found between linear and nonlinear models in accounting for variance in a resting eyes-closed EEG recording from a representative normal subject. The element of nonlinear structure at occipital sites was judged to be trivial.

Forest, G., & Godbout, R. (2000). Effects of sleep deprivation on performance and EEG spectral analysis in young adults. *Brain and Cognition*, *43*, 195-200.

A night of total sleep deprivation reduced motor and memory performance and increased frontal and temporal theta and frontal beta activity.

Jausovec, N., & Jausovec, K. (2000). Differences in resting EEG related to ability. *Brain Topography*, *12*, 229-40.

Most QEEG parameters recorded during resting eyes open and closed conditions correlated weakly if at all with creativity and IQ. However coherence measures showed a strong relationship both with creativity and IQ scores.

Bush, G., Luu, P., & Posner, M.I. (2000). Cognitive and emotional influences in anterior cingulate cortex. *Trends in Cognitive Science*, *4*, 215-222.

The important role played by the anterior cingulate cortex in the regulation of both cognitive and emotional processing is discussion, along with current neuroimaging studies.

Schaefer, S.M., Abercrombie, H.C., Lindgren, K.A., et al. (2000). Six-month test-retest reliability of MRI-defined PET measures of regional cerebral glucose metabolic rate in selected subcortical structures. *Human Brain Mapping*, *10*, 1-9.

Resting PET measures demonstrate good test-retest reliability 6 months later for many subcortical structures.

Ricker, J.H. & Zafonte, R.D. (2000). Functional neuroimaging and quantitative electroencephalography in adult traumatic head injury: clinical applications and interpretive cautions. *Journal of Head Trauma Rehabilitation*, *15*, 859-868.

An overview of the use of procedures such as positron emission tomography, single photon emission computed tomography, and quantitative electroencephalogram in adults for accurate differential diagnosis of mild head trauma.

MENTAL HEALTH AND NEUROLOGICAL DISORDERS

Aggarwal, A. & Lillystone, D. (2000). A follow-up pilot study of objective measures in children with attention deficit hyperactivity disorder. *Journal of Paediatrics and Child Health*, *36*, 134-138.

After a prolonged period of stimulant medication therapy, TOVA impulsivity scores improved in 18 ADHD children, but inattention, response time, and response variability scores did not.

Moll, G.H., Heinrich, H., Trott, G., Wirth, S., & Rothenberger, A. (2000). Deficient intracortical inhibition in drug-naive children with attention-deficit hyperactivity disorder is enhanced by methylphenidate. *Neuroscience Letters*, *284*, 121-125.

Motor system excitability was evaluated in ADHD children using transcranial magnetic stimulation (TMS); ADHD-children had reduced intracortical inhibition compared to controls.

Safer, D.J. (2000). Are stimulants overprescribed for youths with ADHD? *Annals of Clinical Psychiatry*, *12*, 55-62.

Practical and legitimate concerns for stimulant treatment for youths with ADHD are discussed, including changes within the ADHD diagnosis, infrequent teacher-physician communications, and conduct disorder comorbidity.

Baron-Cohen, S., Ring, H.A., Bullmore, E.T. et al. (2000). The amygdala theory of autism. *Neuroscience and Biobehavioral Reviews*, *24*, 355-364.

Reviews the evidence for a social function of the amygdala. The amygdala appears to be one of several neural regions abnormal in autism.

Brady, K.T., Killeen, T.K., Brewerton, T., & Lucerini, S. (2000). Comorbidity of psychiatric disorders and posttraumatic stress disorder. *Journal of Clinical Psychiatry*, *Supplement 7*, 22-32.

Comorbidity in PTSD is very common. Substantial symptom overlap exists between PTSD and other psychiatric diagnoses, particularly major depressive disorder, and PTSD patients often self-medicate, resulting in substance use disorders.

Schneider, F., Habel, U., Kessler, C., Salloum, J.B., & Posse, S. (2000). Gender differences in regional cerebral activity during sadness. *Human Brain Mapping*, *9*, 226-238.

Cerebral correlates of emotional experience in males and females indicates a more focal and subcortical processing of sadness in men.

ONLINE RESOURCES

The distribution and control over information has been a primary source of conflict since the dawn of history. The battle rages on to this day, scarcely unchecked in the medical, legal, and religious fields. In fact entire careers, many prominent, are based on maintaining the status quo of inequality and inefficiency in these information distribution systems. But the information itself has now grown so vast and so powerful that its distribution can no longer be controlled by a select few. There's a saying on the Net, "Information wants to be free." Here are some recent actions contributing to this future:

CogNet *http://cognet.mit.edu/*

CogNet is a central repository of electronic resources in cognitive and brain sciences sponsored by MIT Press. It includes a searchable full-text library, as

well as an academic almanac, jobs listings, CV and bibliography utilities, virtual poster sessions, and discussion groups. The library contains a growing collection of MIT Press titles (currently 150) by such noted authors as William Calvin, Daniel C. Dennett, and Steven Pinker. Impressively, books can be viewed page by page in their entirety online. Membership is free during the development phase (scheduled to be complete by September 2000).

CogPrints *http://cogprints.soton.ac.uk/*
CogPrints is an e-print archive of published cognitive and brain science papers. Following the e-print model established by the Los Alamos Archive for Physics (http://xxx.lanl.gov/), CogPrints already sports a respectable collection of full-text publications, including journal papers by renown scientists such as Michael Posner, Nicholas Humphrey, and Daniel C. Dennett. Papers from *EEG & Clinical Neurophysiology, Nature*, the Proceedings of the National Academy of Sciences, and other respected journals are included in this archive. Also joining Cogprints in the e-print bandwagon is *Clinical Medicine Netprints* (*http://clinmed.netprints.org/*), a new preprint collection which includes papers from psychiatry, clinical psychology, and related fields.

Seeing the E-writing on the Wall
Nearly every journal publisher has developed or is in the process of developing an e-print archive for its journals. Some publishers counter this potential threat to their print revenues by charging for each article a user downloads or by restricting access to those people who already subscribe to the journal (which doesn't make great sense). Many are currently undergoing free trial periods, which I suspect will become for many permanent (information wants to be free). One of the original preprint archives, and still the most varied and interesting, comes from

Behavioral and Brain Sciences *http://www.princeton.edu/~harnad/bbs/*

Other full text journals online include:

Journal of Cognitive Neuroscience *http://jocn.mitpress.org/*

Archives of General Psychiatry and JAMA *http://pubs.ama-assn.org/*

New England Journal of Medicine *http://www.nejm.org*

One day in the near future all information may be free. But *knowledge*, that will still cost an arm and a leg.