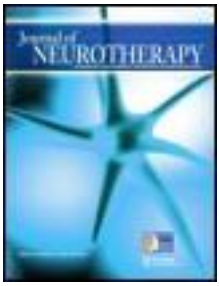

Journal of Neurotherapy: Investigations in Neuromodulation, Neurofeedback and Applied Neuroscience

News from Other Journals and Websites

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NEWS FROM OTHER JOURNALS AND WEBSITES

David A. Kaiser, PhD, Editor

Our *journal club continues this month with a review of Gevins' recent work and Llinas' amazing "discovery" of what most neurofeedback clinicians have known for years. Also included is a list of online sites that provide free or inexpensive clinician listings.*

Authors are encouraged to submit reprints or preprints of recent research for review in this section. Everyone is encouraged to submit reviews of any peer-reviewed papers that may be relevant to the readership of this journal. Website recommendations are also requested. Send this material to David A. Kaiser, PhD, at dakaiser@skiltopo.com or P.O. Box 491956, Los Angeles, CA 90049.

RECENT MUST-READ PAPERS

McEvoy, L.K., Smith, M.E., & Gevins, A. (2000). Test-retest reliability of cognitive EEG. *Clinical Neurophysiology*, *111*, 457-463. Anyone who has recorded EEG during task or challenge conditions quickly becomes aware of the fact that EEG is more reliable during active tasks than during resting conditions. The use of the term ''baseline'' to describe resting conditions, however, perpetuates a misconception about EEG in the minds of the uninitiated, in terms of stability, homogeneity, and typicality of eyes-closed or eyes-open conditions. During rest it is extremely difficult to control for the state of vigilance, anxiety and cognitive processing. On the other hand, task requirements constrain mental processing and behavior, and this results in

highly reliable EEG recordings, a finding known for some time now (e.g., Fernandez et al., 1993).

In McEvoy et al. (2000), EEG was recorded from twenty-eight sites in twenty adults during resting, psychomotor performance, and working memory conditions. Data were recorded twice, seven days apart. Circadian and ultradian effects in the EEG were controlled by recording data at the same time of day. Four EEG components of spectral power were analyzed for stability: frontal midline theta, posterior theta, posterior slow alpha (approx. 9-10 Hz), and posterior fast alpha (approx 10.5-11.5 Hz). Frequency components were tailored for each subject: 1 Hz bands centered around an individual's peak frequency bands were analyzed. (Recognition that frequency components are not homogeneous across individuals is another strength of this work.) Seven-day retest reliability coefficients were determined to be higher in task conditions (r-values from 0.83 to 0.97, mean 0.93) than for resting conditions (0.76 to 0.95, mean 0.84). Within-session stability varied even more during resting conditions (0.74 to 0.93) than challenge conditions (0.92 to 0.99). Despite the variation in task complexity and subject performance, EEG was highly stable across all tasks. In fact certain behavioral measures (i.e., accuracy) proved less reliable than task-related EEG. This paper strengthens the case for using task QEEG to assess cognitive function. *(Review by David Kaiser, PhD)*

Llinas, R.R., Ribrary, U., Jeanmonod, D., Kronberg, E., & Mitra, P.P. (1999). Thalamocortical dysrhythmia: a neurological and neuropsychiatric syndrome characterized by magnetoencephalography (MEG). *Proceedings of the National Association of Science*, *96*, 15222-15227. Llinas and his colleagues propose a possible mechanism underlying certain medical conditions including depression, tinnitus, and Parkinson's disease, which they call "thalamocortical dysrhythmia." Eyes-closed MEG data were recorded from nine patients and nine controls. Patients exhibited increased low-frequency theta rhythmicity and widespread coherence. The authors believed that this widespread low-frequency activity impairs function in that it continuously constrains the dynamic organization of the brain. Depending upon the localization of these limitations in the thalamocortical network, one neurological condition or another will present. Thus, according to this hypothesis, the etiological boundaries between neurological and psychiatric disorders may yield. Many disorders, once thought to be stable, isolated products of dysfunctional brain structures or neurotransmitters, may turn out to be mutable constructs best explained in the temporal and rhythmic domains. McCormick (1999) commented on Llinas' pilot study in *Nature Medicine*, wondering whether the "rosetta stone" for a number of neurological disorders had been uncovered. This work, with its warm media and scientific reception, is good news to the field of neurofeedback. Someone other than neurofeedback prac-

titioners is finally exploring the relationship between thalamocortical rhythms and mental and neurological disorders. *(Review by David Kaiser, PhD)*

EEG THEORY AND PRACTICE

Debener, S., Beauducel, A., Nessler, D., et al. (2000). Is resting anterior EEG alpha asymmetry a trait marker for depression? Findings for healthy adults and clinically depressed patients. *Neuropsychobiology*, *41*, 31-37. Temporal instability of anterior alpha (8-13 Hz) asymmetry may be a characteristic feature for depression, which also suggests that anterior alpha asymmetry is not a trait marker for depression.

Aeschbach, D., Matthews, J.R., Postolache, T.T., et al. (1999). Two circadian rhythms in the human electroencephalogram during wakefulness. *American Journal of Physiology*, *277*, R1771-1779. Two distinct circadian rhythms in spectral power density, one centered at theta (4.25-8.0 Hz), the other at high-frequency alpha (10.25-13.0 Hz), were observed in nineteen subjects across forty hours of sustained wakefulness. Subjective alertness, plasma melatonin, and body temperature all paralleled the wax and wane of alpha activity across the day. The authors suggest these two rhythms reflect different aspects of the circadian rhythm in arousal.

Bresnahan, S.M., Anderson, J.W., & Barry, R.J. (1999). Age-related changes in quantitative EEG in attention-deficit/hyperactivity disorder. *Biological Psychiatry*, *46*, 1690-1697. QEEG from midline sites of twenty-five children, twenty-five teens and twenty-five adults diagnosed with ADHD were compared with age-matched normal controls. Theta activity was elevated across all age groups compared with normals whereas relative beta activity decreased with age. These findings may support the notion that decreased beta activity is linked to hyperactivity and increased theta activity to impulsivity.

Baving, L., Laucht, M., & Schmidt, M.H. (1999). Atypical frontal brain activation in ADHD: preschool and elementary school boys and girls. *Journal of American Academy of Children & Adolescent Psychiatry*, *38*, 1363-1371. Boys with ADHD exhibit a less right-lateralized frontal activation pattern during baseline conditions compared to normal boys, whereas girls with ADHD displayed a more right-lateralized frontal activation pattern than normal girls. This finding stresses the importance of gender-specific analyses in ADHD.

Semerci, Z.B. (2000). Neurological soft signs and EEG findings in children and adolescents with Gilles de la Tourette syndrome. *Turkish Journal of*

Pediatrics, *42*, 53-55. Non-specific EEG abnormalities and neurological soft signs were detected in the majority of Tourette's cases. Both findings were associated with low-performance IQ.

MENTAL HEALTH AND NEUROLOGICAL DISORDERS

The MTA Cooperative Group (1999). A 14-month randomized clinical trial of treatment strategies for attention-deficit/hyperactivity disorder. The MTA Cooperative Group. Multimodal Treatment Study of Children with ADHD. *Archives of General Psychiatry*, *56*, 1073-1086. Symptoms and positive functioning in ADHD children improved nearly as well with stimulant medication therapy only as with a combined treatment of medication and behavioral treatment. Either approach was superior to behavioral treatment alone or routine community care.

Zito, J.M., Safer, D.J., dosReis, S., et al. (1999). Psychotherapeutic medication patterns for youths with attention-deficit/hyperactivity disorder. *Archives of Pediatric and Adolescent Medicine*, *153*, 1257-1263. Doctor office visits for ADHD for youths nearly doubled from 1989 to 1996 (3.6% of all youth visits in 1996). The frequency of stimulant therapy also increased during this time frame within these visits (77% in 1996).

Biederman, J., Mick, E., Prince, J., et al. (1999). Systematic chart review of the pharmacologic treatment of comorbid attention deficit hyperactivity disorder in youth with bipolar disorder. *Journal of Children & Adolescent Psychopharmacology*, *9*, 247-256. Mood stabilization is a prerequisite for successful treatment of ADHD in children with both ADHD and manic symptoms.

Kimbrell, T.A., Little, J.T., Dunn, R.T., et al. (1999). Frequency dependence of antidepressant response to left prefrontal repetitive transcranial magnetic stimulation (rTMS) as a function of baseline cerebral glucose metabolism. *Biological Psychiatry*, *46*, 1603-1613. Repetitive transcranial magnetic stimulation (rTMS) may have an antidepressant effect in some individuals. Electrophysiologic data suggests that high frequency rTMS (10-20 Hz) enhances neuronal firing efficacy and low frequency rTMS (1 Hz) produces the opposite effect. The present study supported these observations: a better response to 20 Hz was associated with the degree of baseline hypometabolism whereas response to 1 Hz rTMS was associated with baseline hypermetabolism.

Conca, A., Konig, P., & Hausmann, A. (2000). Transcranial magnetic stimulation induces 'pseudoabsence seizure.' *Acta Psychiatric Scandinavia*,

101, 246-249. Reports a single case of repetitive transcranial magnetic stimulation (rTMS) in a depressed individual which, combined with drugs modulating the norepinephrine turnover, may have contributed to the occurrence of a complex partial seizure.

Grant, B.F. (2000). Estimates of US children exposed to alcohol abuse and dependence in the family. *American Journal of Public Health*, *90*, 112-115. One quarter of U.S. children are exposed to familial alcohol abuse or alcohol dependence.

Aanavi, M.P., Taube, D.O., Ja, D.Y., & Duran, E.F. (1999). The status of psychologists' training about and treatment of substance-abusing clients. *Journal of Psychoactive Drugs*, *31*, 441-444. The vast majority of psychologists (91% surveyed) are involved to some degree with substance abusers in their clinical practice, although relatively few have formal education or training in substance abuse.

Carson, A.J., Ringbauer, B., MacKenzie, L., Warlow, C., & Sharpe, M. (2000). Neurological disease, emotional disorder, and disability: they are related: a study of 300 consecutive new referrals to a neurology outpatient department. *Journal of Neurology, Neurosurgery, & Psychiatry*, *68*, 202-206. Half of patients referred to general neurology outpatient clinics suffer from anxiety and depressive disorders. These patients were more disabled and had more somatic symptoms, though few received psychiatric treatment.

Chemerinski, E., & Robinson, R.G. (2000). The neuropsychiatry of stroke. *Psychosomatics*, *41*, 5-14. Depressive and anxiety disorders, and possibly other psychiatric conditions, inhibit physical recovery from stroke and limit the quality of life of patients recovering from stroke.

Zhang, Q.W., Natelson, B.H., Ottenweller, J.E., et al. (2000). Chronic fatigue syndrome beginning suddenly occurs seasonally over the year. *Chronobiology International*, *17*, 95-99. Chronic fatigue syndrome onset peaks from November through January and ebbs from April through May. An infectious illness may be responsible for triggering onset.

Garralda, E., Rangel, L., Levin, M., Roberts, H., & Ukoumunne, O. (1999). Psychiatric adjustment in adolescents with a history of chronic fatigue syndrome. *Journal of American Academy of Children & Adolescent Psychiatry*, *38*, 1515-1521. In adolescents, chronic fatigue syndrome may enhance the risk for or share common predisposing factors with anxiety and depressive disorders.

ONLINE RESOURCES

Online directories of mental health practitioners. Except for At Health, clinician listings are provided free of charge–simply visit the site and complete a form. Some forms are brief, others request specifics about your practice such as therapies used, office hours, conditions treated. The order of sites below reflects my opinion about the prominence and value of each directory (most visited/useful to treatment-seeking public on top).

Mental Health Net
mentalhelp.net/mhn/yellowpages/db.cgi?signup_form=1

At Health ($28 for 15 mo) *athealth.com/proform.html*

Neurofeedback Yellow Pages *www.skiltopo.com/clinics/*
1,000 neurofeedback practitioners listed. (operated by David Kaiser, PhD)

Find-a-Therapist
www.findingstone.com/professionals/find-a-therapist.htm

Drug Abuse USA
www.drug-abuse.com/membership/nonmembers.html

Psyfidential (psychotherapists only)
www.clinicalregistry.com/app.html

Therapist Finder
www.therapistfinder.com/cgi-bin/tforder-therapist.cgi

PsychWatch *www.psychwatch.com*

Who's Who in Mental Health on the Web
idealist.com/wwmhw/profiles/new.html

Mental Health Network *www.mentalhealth.net*

AAA Natl Dir'y of M.H. Professionals *www.dirs.com/contact/list.htm*