



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

News from Other Journals and Websites

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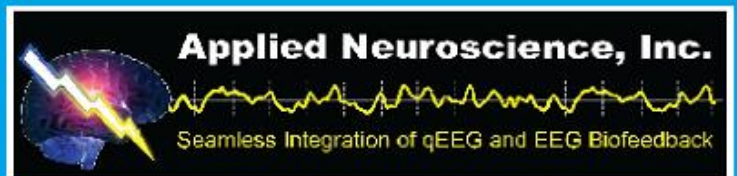
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NEWS FROM OTHER JOURNALS AND WEBSITES

David A. Kaiser, PhD, Editor

Innumerable papers have been published since last this section appeared, or so it seems. To reduce information overload, only EEG papers are included this quarter. The backlog of neuroimaging and relevant mental health papers will be described with later issues.

Authors are encouraged to submit recent preprints or reprints for this section and anyone can submit reviews or recommend websites. Contact David Kaiser at dakaiser@mail.rit.edu

RECENT MUST-READ PAPERS

Egner, T., Strawson, E., & Gruzelier, J. H. (2002). EEG signature and phenomenology of alpha/theta neurofeedback training versus mock feedback. *Applied Psychophysiology & Biofeedback*, 27, 261-270.

Alpha-theta neurofeedback facilitates production of higher within-session theta/alpha ratios than does non-contingent feedback relaxation.

Thatcher, R. W., Biver, C. J., & North, D. M. (2003). Quantitative EEG and the Frye and Daubert standards of admissibility. *Clinical Electroencephalography*, 34, 39-53.

The authors convincingly depict how quantitative EEG meets all Daubert standards of scientific knowledge and how science and techni-

cal aspects of quantitative EEG also match recent Supreme Court standards of “technical” and “other specialized” knowledge.

ELECTROENCEPHALOGRAPHY

Aftanas, L. I., Varlamov, A. A., Reva, N. V., & Pavlov, S. V. (2003). Disruption of early event-related theta synchronization of human EEG in alexithymics viewing affective pictures. *Neuroscience Letters*, *340*, 57-60.

Alexithymia is indexed by disrupted early frontal synchronization in the upper theta band.

Anderer, P., Saletu, B., Semlitsch, H. V., & Pascual-Marqui, R. D. (2002). Structural and energetic processes related to P300: LORETA findings in depression and effects of antidepressant drugs. *Methods and Findings in Experimental and Clinical Pharmacology*, *24*, 85-91.

ERP-tomography identified changes in brain areas predominantly involved in depression and in antidepressant action.

Benar, C., Aghakhani, Y., Wang, Y., Izenberg, A., Al-Asmi, A., Dubeau, F., et al. (2003). Quality of EEG in simultaneous EEG-fMRI for epilepsy. *Clinical Neurophysiology*, *114*, 569-580.

Recording the EEG simultaneously with fMRI remains an extremely delicate operation due to the fluctuating magnetic fields inside an active MRI machine.

Bresnahan, S. M., & Barry, R. J. (2002). Specificity of quantitative EEG analysis in adults with attention deficit hyperactivity disorder. *Psychiatry Research*, *112*, 133-44.

ADHD adults show elevated theta activity during eyes open baselines compared to controls.

Cajochen, C., Wyatt, J. K., Czeisler, C. A., & Dijk, D. J. (2002). Separation of circadian and wake duration-dependent modulation of EEG activation during wakefulness. *Neuroscience*, *114*, 1047-1060.

The circadian pacemaker facilitates frontal EEG activation by preventing the intrusion of low-frequency EEG components (which increase progressively during wakefulness).

Clarke, A. R., Barry, R. J., Bond, D., McCarthy, R., & Selikowitz, M. (2002). Effects of stimulant medications on the EEG of children with attention-deficit/hyperactivity disorder. *Psychopharmacology (Berlin)*, *164*, 277-284.

Use of stimulant medications resulted in normalization of the EEG, primarily changing theta and beta bands.

Clarke, A. R., Barry, R. J., McCarthy, R., Selikowitz, M., Brown, C. R., & Croft, R. J. (2003). Effects of stimulant medications on the EEG of children with ADHD predominantly inattentive type. *International Journal of Psychophysiology*, *47*, 129-137.

Stimulant medications appear to act to increase cortical arousal in children with ADHD, normalizing their EEG.

Clarke, A. R., Barry, R. J., McCarthy, R., Selikowitz, M., Clarke, D. C., & Croft, R. J. (2003). EEG activity in girls with attention-deficit/hyperactivity disorder. *Clinical Neurophysiology*, *114*, 319-328.

Girls with ADHD exhibit abnormalities in their EEGs, with far less variance in their EEG profiles than boys. There may be distinct groups of girls with ADHD who are not being referred for clinical treatment.

Curran, E. A., & Stokes, M. J. (2003). Learning to control brain activity: A review of the production and control of EEG components for driving brain-computer interface (BCI) systems. *Brain & Cognition*, *51*, 326-336.

To date, motor imagery has been the most commonly used task, but other cognitive tasks, including those used in imaging studies, may prove to be more effective.

Davalos, D. B., & Bennett, T. L. (2002). A review of the use of single-photon emission computerized tomography as a diagnostic tool in mild traumatic brain injury. *Applied Neuropsychology*, *9*, 92-105.

SPECT may be a useful tool in the detection of MTBI and in treatment planning despite the lack of studies (only nine relevant ones).

Fell, J., Elfadil, H., Klaver, P., Roschke, J., Elger, C. E., & Fernandez, G. (2002). Covariation of spectral and nonlinear EEG measures with alpha biofeedback. *International Journal of Neuroscience*, *112*, 1047-1057.

A sharpening of the alpha peak during biofeedback training clearly precedes an increase of alpha amplitude.

Fernandez, T., Harmony, T., Fernandez-Bouzas, A., Silva, J., Herrera, W., Santiago-Rodriguez, E., et al. (2002). Sources of EEG activity in learning disabled children. *Clinical Electroencephalography*, *33*, 160-164.

Learning disabled children showed more theta activity in the frontal lobes and control children more alpha in occipital areas, supporting the maturational lag hypothesis.

Gatzonis, S. D., Roupakiotis, S., Kambayianni, E., Politi, A., Triantafyllou, N., Mantouvalos, V., et al. (2002). Hemispheric predominance of abnormal findings in electroencephalogram (EEG). *Seizure*, *11*, 442-444.

EEG from 13K patients was reviewed to determine laterality patterns of abnormal findings. A strong left predominance (79% vs. 21%) was noted for epileptiform discharges; the left hemisphere may be more vulnerable to nosological processes.

Goldman, R. I., Stern, J. M., Engel, J., Jr., & Cohen, M. S. (2002). Simultaneous EEG and fMRI of the alpha rhythm. *Neuroreport*, *13*, 2487-2492.

Increased alpha power was correlated with decreased MRI signal in multiple regions of occipital, superior temporal, inferior frontal, and cingulate cortex, and with increased signal in the thalamus and insula.

Hughes, J. R., DeLeo, A. J., & Melyn, M. A. (2000) The electroencephalogram in attention deficit hyperactivity disorder: Emphasis on epileptiform discharges. *Epilepsy & Behavior*, *1*, 271-277.

Definite epileptiform activity was seen in 30% of ADHD children—which may contribute to deficits in attention and movement issues.

Johnstone, S. J., Barry, R. J., & Dimoska, A. (2003). Event-related slow-wave activity in two subtypes of attention-deficit/hyperactivity disorder. *Clinical Neurophysiology*, *114*, 504-514.

Early frontal negative and late posterior positive slow-wave components were reduced in ADHD combined type, but not ADHD inattentive type, relative to controls.

Karadag, F., Oguzhanoglu, N. K., Kurt, T., Oguzhanoglu, A., Atesci, F., & Ozdel, O. (2002). Quantitative EEG analysis in obsessive compulsive disorder. *International Journal of Neuroscience*, *113*, 833-847.

Relative theta powers were increased and alpha powers were decreased in OCD patients, particularly in the frontotemporal region.

Knott, V. J. (2002). Quantitative EEG methods and measures in human psychopharmacological research. *Human Psychopharmacology*, *15*, 479-498.

Recommends methodological standards that ensure valid pharmaco-EEG profiling (i.e., central impact of medications).

Mann, M., Smith, B. D., Tola, K., & Farley, L. (2002). Alcoholic tendency and EEG arousal in women: Effects of family history and personality under emotional stimulation. *International Journal of Neuroscience*, *112*, 639-661.

A positive family history of alcoholism alone or predisposing personality characteristics alone were less aroused than those without alcoholism predispositions when exposed to nonverbal positive and negative emotional stimuli.

McManis, M. H., Kagan, J., Snidman, N. C., & Woodward, S. A. (2002). EEG asymmetry, power, and temperament in children. *Developmental Psychobiology*, *41*, 169-177.

Right frontal activation is associated with children who begin life with high reactivity and who develop fearful reactions to unfamiliar events in the second year of life.

Na, S. H., Jin, S. H., Kim, S. Y., & Ham, B. J. (2002). EEG in schizophrenic patients: Mutual information analysis. *Clinical Neurophysiology*, *113*, 1954-1960.

EEGs show left hemispheric hypotemporality in schizophrenia.

Park, H. J., Kwon, J. S., Youn, T., Pae, J. S., Kim, J. J., Kim, M. S., et al. (2002). Statistical parametric mapping of LORETA using high density EEG and individual MRI: Application to mismatch negativities in schizophrenia. *Human Brain Mapping*, *17*, 168-178.

Schizophrenics exhibited current density reductions of mismatch negativity in the left superior temporal gyrus and the left inferior parietal gyrus.

Poblano, A., Rothenberg, S. J., Fonseca, M. E., Cruz, M. L., Flores, T., & Zarco, I. (2003). Salivary testosterone and EEG spectra of 9- to 11-year-old male children. *Developmental Neuropsychology*, *23*, 375-384.

Delta relative power decreased and alpha relative power increased in the higher salivary testosterone boys compared to low testosterone boys.

Polo, M. D., Escera, C., Yago, E., Alho, K., Gual, A., & Grau, C. (2003). Electrophysiological evidence of abnormal activation of the cerebral network of involuntary attention in alcoholism. *Clinical Neurophysiology*, *114*, 134-146.

Deviant tones and novel sounds produce ERP abnormalities in alcoholic patients, suggesting impaired involuntary attention mechanisms in chronic alcoholism.

Rangaswamy, M., Porjesz, B., Chorlian, D. B., Choi, K., Jones, K. A., Wang, K., et al. (2003). Theta power in the EEG of alcoholics. *Alcoholism, Clinical & Experimental Research*, *27*, 607-615.

Increased absolute theta power was seen in alcohol-dependent subjects at central and parietal regions, which may reflect an imbalance in the excitation-inhibition homeostasis in the cortex.

Rangaswamy, M., Porjesz, B., Chorlian, D. B., Wang, K., Jones, K. A., Bauer, L. O., et al. (2002). Beta power in the EEG of alcoholics. *Biological Psychiatry*, *52*, 831-842.

Beta power in all three bands of resting EEG (Beta 1 (12.5-16 Hz), Beta 2 (16.5-20 Hz), and Beta 3 (20.5-28 Hz)) is elevated in alcoholics, especially so in males.

Schmid, R. G., Tirsch, W. S., & Scherb, H. (2002). Correlation between spectral EEG parameters and intelligence test variables in school-age children. *Clinical Neurophysiology*, *113*, 1647-1656.

Intelligence test variables correlated positively with alpha power and negatively with spectral power of lower frequency bands.

Volf, N. V., & Passynkova, N. R. (2002). EEG mapping in seasonal affective disorder. *Journal of Affective Disorders*, *72*, 61-69.

Differential hemispheric contributions of EEG spectra may discriminate between the varieties of depression or different depressive states.

ONLINE RESOURCES

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chive: I think the photographers didn't claim copyright on some of these older images because of the blue tinge permeating most of the photos, a tinge readily corrected by any image-editing program nowadays.

US Fish and Wildlife Service

<http://pictures.fws.gov/>

NASA (Hubble and historical images)

<http://www.nasa.gov/gallery/photo>

<http://nix.nasa.gov>

National Oceanographic & Atmospheric Administration (NOAA)

<http://www.photolib.noaa.gov>

Photo Editors

Adobe Photoshop

<http://www.adobe.com>

Paintshop Pro

<http://www.jasc.com>

Iranfan (freeware image viewer)

<http://www.tucows.com>