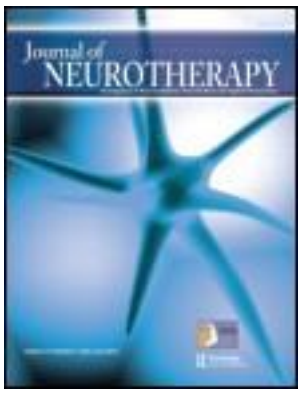

Journal of Neurotherapy: Investigations in Neuromodulation, Neurofeedback and Applied Neuroscience

News from Other Journals and Websites

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NEWS FROM OTHER JOURNALS AND WEBSITES

David A. Kaiser, PhD, Editor

Neurotherapy papers continue to appear in other journals. Quantitative EEG papers seem on the rise. 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/.

ELECTROENCEPHALOGRAPHY

Heinrich, H., Gevensleben, H., Freisleder, F. J., Moll, G. H., & Rothenberger, A. (2004). Training of slow cortical potentials in attention-deficit/hyperactivity disorder: Evidence for positive behavioral and neurophysiological effects. *Biological Psychiatry*, *55*, 772-775.

ADHD symptomatology was reduced by a quarter after slow cortical potential feedback training.

Ramaratnam, S., Baker, G. A., & Goldstein, L. (2003). Psychological treatments for epilepsy. *Cochrane Database System Reviews*, CD002029.

A review of psychological treatments. EEG biofeedback improved cognitive and motor functions; educational interventions improved understanding of epilepsy, coping and medication compliance. Relaxation therapy was unsuccessful.

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Heywood, C., & Beale, I. (2003). EEG biofeedback vs. placebo treatment for attention-deficit/hyperactivity disorder: A pilot study. *Journal of Attention Disorders*, *7*, 43-55.

The Terrace effect revisits the field of neurofeedback, albeit mildly. The Terrace effect is when a limited or confounded design is interpreted (or misinterpreted, that is) in such a way as to undermine better-designed studies of the past.

Allen, J. J., Urry, H. L., Hitt, S. K., & Coan, J. A. (2004). The stability of resting frontal electroencephalographic asymmetry in depression. *Psychophysiology*, *41*, 269-280.

Asymmetry scores display good internal consistency and exhibit modest stability over 8- and 16- week assessment intervals in depressed individuals.

Roche, R. A., Dockree, P. M., Garavan, H., Foxe, J. J., Robertson, I. H., & O'Mara, S. M. (2004). EEG alpha power changes reflect response inhibition deficits after traumatic brain injury (TBI) in humans. *Neuroscience Letters*, *362*, 1-5.

Brain injury patients may be less capable of maintaining a state of alpha desynchronization.

Flor-Henry, P., Lind, J. C., & Koles, Z. J. (2004). A source-imaging (low-resolution electromagnetic tomography) study of the EEGs from unmedicated males with depression. *Psychiatry Research*, *130*, 191-207.

Left anterior functional hypoactivation during challenge was indicative of depression. Also, spatial challenge best separated depressed from controls.

Ozge, A., Toros, F., & Comelekoglu, U. (2004). The role of hemispheral asymmetry and regional activity of quantitative EEG in children with stuttering. *Child Psychiatry & Human Development*, *34*, 269-280.

QEEG analysis showed increased delta activity, especially in right frontal and parietal regions and decreased alpha frequency in bi-frontal regions of the stutterers.

Kim, D. J., Jeong, J., Kim, K. S., Chae, J. H., Jin, S. H., Ahn, K. J., et al.(2003). Complexity changes of the EEG induced by alcohol cue exposure in alcoholics and social drinkers. *Alcohol Clinical Experimental Research*, *27*, 1955-1961.

When subjects are exposed to alcohol cues, changes in EEG complexity are observed in frontal, right posterior temporal, and occipital areas.

Finnigan, S. P., Rose, S. E., Walsh, M., Griffin, M., Janke, A. L., McMahon, K. L., et al. (2004). Correlation of quantitative EEG in acute ischemic stroke with 30-day NIHSS score: Comparison with diffusion and perfusion MRI. *Stroke, 35*, 899-903.

Acute qEEG data might be used to monitor and predict stroke evolution.

Louden, W. (2004). The role of EEGs in the treatment and prognosis of epilepsy. *Nursing Times*, *100*, 36-38.

The significance of what is recorded in an EEG can be easily misunderstood or misinterpreted–as we are well-aware.

Rangaswamy, M., Porjesz, B., Chorlian, D. B., Wang, K., Jones, K. A., Kuperman, S., et al. (2004). Resting EEG in offspring of male alcoholics: beta frequencies. *International Journal of Psychophysiology*, *51*, 239-251.

Increased EEG beta power may be a likely marker of risk for developing alcoholism.

Newton, T. F., Kalechstein, A. D., Hardy, D. J., Cook, I. A., Nestor, L., Ling, W., et al. (2004). Association between quantitative EEG and neurocognition in methamphetamine-dependent volunteers. *Clinical Neurophysiology*, *115*, 194-198.

QEEG provides a sensitive measure of methamphetamine-associated alterations in brain function.

Coutin-Churchman, P., Anez, Y., Uzcategui, M., Alvarez, L., Vergara, F., Mendez, L., et al. (2003). Quantitative spectral analysis of EEG in psychiatry revisited: Drawing signs out of numbers in a clinical setting. *Clinical Neurophysiology*, *114*, 2294-2306.

QEEG was abnormal in 83% of 340 patients, and 12% of 67 normal subjects. Decrease in delta and theta bands were most indicative of brain dysfunction.

Reid, M. S., Prichep, L. S., Ciplet, D., O'Leary, S., Tom, M., Howard, B., et al. (2003). Quantitative electroencephalographic studies

of cue-induced cocaine craving. *Clinical Electroencephalography*, *34*, 110-123.

Cue-induced anxiety is associated with reduced high frequency and enhanced low frequency EEG activity.

Huettel, S. A., McKeown, M. J., Song, A. W., Hart, S., Spencer, D. D., Allison, T., et al. (2004). Linking hemodynamic and electrophysiological measures of brain activity: Evidence from functional MRI and intracranial field potentials. *Cerebral Cortex*, *14*, 165-173.

Unfortunately, for those hoping for a simple or evident correspondence, the relationship between ERPs and fMRI differs across brain regions.

Kamarajan, C., Porjesz, B., Jones, K. A., Choi, K., Chorlian, D. B., Padmanabhapillai, A., et al. (2004). The role of brain oscillations as functional correlates of cognitive systems: A study of frontal inhibitory control in alcoholism. *International Journal of Psychophysiology*, *51*, 155-180.

Theta and delta reduction are prominent at frontal cortex of alcoholics, suggesting deficient inhibitory control and information-processing mechanisms.

Polunina, A. G., & Davydov, D. M. (2004). EEG spectral power and mean frequencies in early heroin abstinence. *Progressive Neuropsychopharmacology & Biological Psychiatry*, *28*, 73-82.

Frequency shifts in alpha2 (esp. frontal and central) correlated with daily heroin consumption. Slowing of alpha1 mean frequency was associated with heroin addicts who abused high doses of the drug.

Razumnikova, O. M. (2004). Gender differences in hemispheric organization during divergent thinking: An EEG investigation in human subjects. *Neuroscience Letters*, *362*, 193-195.

Different hemispheric organization in men and women during creative thinking were observed.

Metzger, L. J., Paige, S. R., Carson, M. A., Lasko, N. B., Paulus, L. A., Pitman, R. K., et al. (2004). PTSD arousal and depression symptoms associated with increased right- sided parietal EEG asymmetry. *Journal of Abnormal Psychology*, *113*, 324-329.

Anxiety and right-sided posterior activation is specific to anxious arousal subtype.

Hermens, D. F., Williams, L. M., Lazzaro, I., Whitmont, S., Melkonian, D., & Gordon, E. (2004). Sex differences in adult ADHD: A double dissociation in brain activity and autonomic arousal. *Biological Psychology*, *66*, 221-233.

Adult ADHD males showed increased EEG theta activity whereas adult ADHD females were autonomically hypoaroused as indicated by decreased skin conductance level.

Hughes, S. W., Lorincz, M., Cope, D. W., Blethyn, K. L., Kekesi, K.A., Parri, H. R., et al. (2004). Synchronized oscillations at alpha and theta frequencies in the lateral geniculate nucleus. *Neuron*, *42*, 253-268.

Activation of the metabotropic glutamate receptor may be the potential mechanism whereby the thalamus promotes EEG alpha and theta rhythms in the intact brain.

Jausovec, N., & Habe, K. (2003). The "Mozart effect": An electroencephalographic analysis employing the methods of induced event-related desynchronization/synchronization and event-related coherence. *Brain Topography*, *16*, 73-84.

Mozart's music influences the level of EEG arousal, regardless of induced mood, musical tempo and complexity.

Perera, T. D., Luber, B., Nobler, M. S., Prudic, J., Anderson, C., & Sackeim, H. A. (2004). Seizure expression during electroconvulsive therapy: Relationships with clinical outcome and cognitive side effects. *Neuropsychopharmacology*, *29*, 813-825.

EEG features associated with ECT efficacy may reflect individual differences in inhibitory processes that terminate the seizure.

Reese, C., & Polich, J. (2003). Alcoholism risk and the P300 event-related brain potential: Modality, task, and gender effects. *Brain & Cognition*, *53*, 46-57.

P300 amplitude during specific tasks at certain sites reflects risk for alcoholism in young adults.

Minnix, J. A., Kline, J. P., Blackhart, G. C., Pettit, J. W., Perez, M., & Joiner, T. E. (2004). Relative left-frontal activity is associated with increased depression in high reassurance-seekers. *Biological Psychology*, *67*, 145-55.

Stable relative right-frontal activity was associated with increased depression in low reassurance-seekers, while the opposite pattern was found in high reassurance-seekers.

NEUROIMAGING AND DISORDERS

Sokol, D. K., & Edwards-Brown, M. (2004). Neuroimaging in autistic spectrum disorder (ASD). *Journal of Neuroimaging*, *14*, 8-15.

Routine neuroimaging is not recommended for autism due to population heterogeneity. (Editor's Note: A misguided and shortsighted recommendation.)

Rohan, M., Parow, A., Stoll, A. L., Demopulos, C., Friedman, S., Dager, S., et al. (2004). Low-field magnetic stimulation in bipolar depression using an MRI-based stimulator. *American Journal of Psychiatry*, *161*, 93-98.

Echo-planar magnetic resonance spectroscopic imaging induces electric fields that are associated with mood improvement in bipolar disorder.

Beutel, M. E., Stern, E., & Silbersweig, D. A. (2003). The emerging dialogue between psychoanalysis and neuroscience: Neuroimaging perspectives. *Journal of American Psychoanalytic Association*, *51*, 773-801.

Can psychodynamic theory in contemporary medicine be reestablished with the assistance of neuroimaging?

Audenaert, K., Jansen, H. M., Otte, A., Peremans, K., Vervaet, M., Crombez, R., et al. (2003). Imaging of mild traumatic brain injury using 57Co and 99mTc HMPAO SPECT as compared to other diagnostic procedures. *Medical Science Monitor*, *9*, MT112-117.

Neuropsychological testing and SPECT showed focal abnormalities whereas CT and EEG did not detect structural lesions in six of eight patients.

Fountoulakis, K. N., Iacovides, A., Gerasimou, G., Fotiou, F., Ioannidou, C., Bascialla, F., et al. (2004). The relationship of regional cerebral blood flow with subtypes of major depression. *Progressive Neuropsychopharmacology & Biological Psychiatry*, *28*, 537-546.

rCBF of right frontal lobe suggests two distinct types of depression, atypical and melancholic.

May, J. C., Delgado, M. R., Dahl, R. E., Stenger, V. A., Ryan, N. D., Fiez, J. A., et al. (2004). Event-related functional magnetic resonance

imaging of reward-related brain circuitry in children and adolescents. *Biological Psychiatry*, *55*, 359-366.

Regions and time-courses of reward-related activity were similar to those observed in adults. Focus on the orbitofrontal cortex.

Daglish, M. R., & Nutt, D. J. (2003). Brain imaging studies in human addicts. *European Neuropsychopharmacology*, *13*, 453-458.

Heroin-related stimuli in addicted individuals provokes activation of anterior cingulate and orbitofrontal regions.

Dhossche, D. M. (2004). Autism as early expression of catatonia. *Medical Science Monitor*, *10*, RA31-39.

Neuroimaging studies show small cerebellar structures in both autism and catatonia, suggesting a common genetic etiology.

Vingerhoets, G., Deblaere, K., Backes, W. H., Achten, E., Boon, P., Boon, P. J., et al. (2004). Lessons for neuropsychology from functional MRI in patients with epilepsy. *Epilepsy & Behavior*, *5*, S81-89.

Reorganization of cognitive and motor function favors activation of contralateral homotopic areas.

Lanius, R. A., Williamson, P. C., Densmore, M., Boksman, K., Neufeld, R. W., Gati, J. S., et al. (2004). The nature of traumatic memories: A 4-T FMRI functional connectivity analysis. *American Journal of Psychiatry*, *161*, 36-44.

PTSD is associated with lateralized differences of brain connectivity, with decreased connectivity in multiple left brain regions but increased in some right brain regions.

Dematteis, M., Kahane, P., Vercueil, L., & Depaulis, A. (2003). MRI evidence for the involvement of basal ganglia in epileptic seizures: An hypothesis. *Epileptic Disorders*, *5*, 161-164.

The basal ganglia may act as part of a modulatory control system during seizures, rather than a propagation pathway.

ONLINE RESOURCES

Track the successes and failures as neuroscience emerges as humanity's newest approach to self-understanding.

Society for Neuroscience Monthly "Brain Briefings"

http://www.sfn.org/content//Publications/BrainBriefings/

New York Times Knowledge Network

http://www.nytimes.com/college/

Life Science Newsletter

http://news.biocompare.com/newssection.asp?newscat=4/

Scientific American Frontiers (watch videos online)

http://www.pbs.org/saf/

NOVA Program: Secrets of the Mind

http://www.pbs.org/wgbh/nova/mind/

Distributed Computing Movement

Donate unused CPU time to science. Projects range from neuroscience, to encryption, to climate projections, biomedical research, and extraterrestrial investigations.

http://directory.google.com/Top/Computers/Computer_Science/Distributed_Computing/

SETI at Home

Granddaddy of the movement: entering its fifth year , but still no ETs phoning home or here.

http://setiathome.ssl.berkeley.edu/