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News from Other Journals and Websites

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NEWS FROM OTHER JOURNALS AND WEBSITES

Adam Clarke, Senior Editor

Bakhtadze, S., Dzhanlidze, M., & Khachapuridze, N. (2011). Changes in cognitive evoked potentials during non pharmacological treatment in children with attention deficit/hyperactivity disorder. *Georgian Medical News*, 192, 47–57.

This study investigated the effects of neurofeedback on the P3 component of the event related potentials in children with attention deficit/hyperactivity disorder. Results indicated normalization of the abnormal P3, which is atypical in children with AD/HD.

Bakhshayesh, A., Hansch, S., Wyschkon, A., Rezai, M., & Esser, G. (2011). Neurofeedback in ADHD: A single-blind randomized controlled trial. *European Child & Adolescent Psychiatry*, 20, 481–491.

This article reports a study of neurofeedback for ADHD using a randomized control trial design. Results indicate that neurofeedback effectively reduced inattention symptoms but not hyperactive symptoms.

Barragan Loayza, I., Sola, I., & Juando Prats, C. (2011). Biofeedback for pain management during labour. *Cochrane Database of Systematic Reviews*, 6, CD006168.

This review evaluated the use of biofeedback in prenatal lessons for managing pain during labor. The review concluded that EMG biofeedback may have some positive effects in the early stages of labor, but as labor progresses, additional pain relief is needed.

Bloom, R., Przekop, A., & Sanger, T. (2010). Prolonged electromyogram biofeedback improves upper extremity function in children with cerebral palsy. *Journal of Child Neurology*, 25, 1480–1484.

This study examined the daily use of EMG biofeedback to improve use of the upper extremity muscles in children with cerebral palsy and upper extremity motor deficits. Eleven children with cerebral palsy received 5 hr per day of EMG biofeedback for 1 month. Results showed significant improvement in 10 children.

Desantis, D., Leonard, M., Preston, M., Barrowman, N., & Guerra, L. (2011). Effectiveness of biofeedback for dysfunctional elimination syndrome in pediatrics: A systematic review. *Journal of Pediatric Urology*, 7, 342–348.

This review evaluated results from 27 studies for the use of biofeedback as a noninvasive treatment for Dysfunctional Elimination Syndrome in people younger than the age of 18. The review concluded that biofeedback is effective in approximately 80% of children, but further investigation was needed.

Fonseca, L., Tedrus, G., Fondello, M., Reis, I., & Fontoura, D. (2011). EEG theta and alpha reactivity on opening the eyes in the diagnosis of Alzheimer's disease. *Clinical EEG & Neuroscience: Official Journal of the EEG & Clinical Neuroscience Society (ENCS)*, 42, 185–189.

This study evaluated the use of EEG theta and alpha reactivity on opening the eyes, in the diagnosis of Alzheimer's disease.

Fonseca, L., Tedrus, G., Prandi, L., & Andrade, A. (2011). Quantitative electroencephalography power and coherence measurements in the diagnosis of mild and moderate Alzheimer's disease. *Arquivos de Neuro-Psiquiatria*, 69(2B), 297–303.

This study aimed to evaluate the use of a QEEG in the diagnosis of Alzheimer's disease. The Alzheimer's group had greater absolute power in the delta and theta bands, greater theta/alpha ratio, and less frontal alpha and beta coherence. Classification accuracy was found to be 72.3%. QEEG measures provided a classification accuracy of 95.3% of subjects with Alzheimer's disease.

Hale, T., Smalley, S., Walshaw, P., Hanada, G., Macion, J., McCracken, J., . . . Loo, S. (2011). Atypical EEG beta asymmetry in adults with ADHD. *Neuropsychologia*, *48*, 3532–3539.

The aim of this study was to investigate whether abnormal brain laterality occurs in adults with ADHD who do not have comorbid language impairment. Adults with ADHD showed pronounced rightward beta asymmetry in inferior parietal regions (P8-P7) during a continuous performance task.

Henriques, G., Keffer, S., Abrahamson, C., & Horst, S. (2011). Exploring the effectiveness of a computer-based heart rate variability biofeedback program in reducing anxiety in college students. *Applied Psychophysiology & Biofeedback*, *36*, 101–112.

This article reports the results of two studies that used heart rate variability biofeedback to reduce anxiety. These studies indicated that heart rate variability biofeedback can be used to reduce anxiety and poor mood in college students.

Howland, R., Shutt, L., Berman, S., Spotts, C., & Denko, T. (2011). The emerging use of technology for the treatment of depression and other neuropsychiatric disorders. *Annals of Clinical Psychiatry*, *23*(1), 48–62.

This review described a number of emerging technologies being used for the treatment of depression and other neuropsychiatric disorder. Technologies included repetitive transcranial magnetic stimulation, magnetic seizure therapy, vagus nerve stimulation, deep brain stimulation, cortical brain stimulation, and quantitative electroencephalography.

Itoh, T., Sumiyoshi, T., Higuchi, Y., Suzuki, M., & Kawasaki, Y. (2011). LORETA analysis of three-dimensional distribution of delta band activity in schizophrenia: Relation to negative symptoms. *Neuroscience Research*, *70*, 442–448.

This study assessed the significance of altered delta activities to determine if specific regions of the brain are associated with psychotic symptoms. LORETA current density was greater for patients in the following areas: The left inferior temporal gyrus, right middle frontal gyrus, right superior frontal gyrus, right inferior frontal gyrus, and right parahippocampal gyrus. These regions were negatively correlated with negative symptoms but not positive symptoms.

Jadidi, F., Norregaard, O., Baad-Hansen, L., Arendt-Nielsen, L., & Svensson, P. (2011). Assessment of sleep parameters during contingent electrical stimulation in subjects with jaw muscle activity during sleep: A polysomnographic study. *European Journal of Oral Sciences*, *119*, 211–218.

This study evaluated the use of contingent electrical stimulation to inhibit jaw EMG in people who grind their teeth during sleep. Results indicated that contingent electrical stimulation can be used while asleep with minimal effect on the quality of sleep experienced by subjects.

Klassen, B., Hentz, J., Shill, H., Driver-Dunckley, E., Evidente, V., Sabbagh, M., . . . Caviness, J. (2011). Quantitative EEG as a predictive biomarker for Parkinson disease dementia. *Neurology*, *77*, 118–124.

This study evaluated QEEG measures as a marker for the development of dementia in subjects with Parkinson disease. The hazard of developing dementia was 13 times higher for those with low background rhythm frequency (lower than 8.5 Hz) than for those with high background rhythm frequency.

Lansbergen, M., Arns, M., van Dongen-Boomsma, M., Spronk, D., & Buitelaar, J. (2011). The increase in theta/beta ratio on resting-state EEG in boys with attention-deficit/hyperactivity disorder is mediated

by slow alpha peak frequency. *Progress in Neuro-Psychopharmacology & Biological Psychiatry*, 35(1), 47–52.

The objectives of this study were to confirm whether individuals with slow alpha peak frequency contribute to the finding of increased theta activity in ADHD and to explore the relation between resting-state brain oscillations and specific cognitive functions. Results suggested that increased theta/beta ratio in ADHD may reflect individuals with slow alpha peak frequencies as well as individuals with true increased theta activity.

Lansbergen, M., van Dongen-Boomsma, M., Buitelaar, J., & Slaats-Willemse, D. (2011). ADHD and EEG-neurofeedback: A double-blind randomized placebo-controlled feasibility study. *Journal of Neural Transmission*, 118, 275–284.

This study reports the result of a pilot study in which neurofeedback is used to treat children with attention-deficit/hyperactivity disorder. Subjects were randomly allocated to a treatment or placebo control condition. Both groups were found to improve over time. The study demonstrated that it is possible to conduct a placebo control trial, but double blinding may not be efficacious as automatic control of threshold levels may not be optimal.

Lee, T., Yu, Y., Chen, M., & Chen, T. (2011). Cortical mechanisms of the symptomatology in major depressive disorder: A resting EEG study. *Journal of Affective Disorders*, 131(1–3), 243–250.

This study examined QEEG abnormalities in subjects with major depressive disorder during an eyes-closed resting condition. The results suggest that cortical mechanisms are associated with symptom manifestation of cognitive distortion and somatic anxiety in major depressive disorder.

Millichap, J., Millichap, J., & Stack, C. (2011). Utility of the electroencephalogram in attention deficit hyperactivity disorder. *Clinical EEG & Neuroscience: Official Journal of the*

EEG & Clinical Neuroscience Society (ENCS), 42, 180–184.

This review concluded that an EEG is important in selected cases of attention deficit/hyperactivity disorder and is useful in the choice of medication, especially in children with lack of awareness and transient cognitive impairment.

Morarend, Q., Spector, M., Dawson, D., Clark, S., & Holmes, D. (2011). The use of a respiratory rate biofeedback device to reduce dental anxiety: An exploratory investigation. *Applied Psychophysiology & Biofeedback*, 36(2), 63–70.

This study evaluated the use of a respiratory rate biofeedback device to reduce anxiety in individuals visiting a dentist. Results indicated that subject who received the biofeedback condition had reduced stress compared to a control group.

Nagai, Y. (2011). Biofeedback and epilepsy. *Current Neurology & Neuroscience Reports*, 11, 443–450.

This review article evaluated the efficacy of slow cortical potential and sensory motor rhythm neurofeedback, as well as galvanic skin response biofeedback.

Nazari, M., Wallois, F., Aarabi, A., & Berquin, P. (2011). Dynamic changes in quantitative electroencephalogram during continuous performance test in children with attention-deficit/hyperactivity disorder. *International Journal of Psychophysiology*, 81, 230–236.

This study investigated EEG changes during a continuous performance task in children with attention deficit/hyperactivity disorder and controls. Switching from an eyes-closed condition to a CPT task induced an alpha power increase in children with ADHD and an alpha power decrease in controls. This was hypothesized as being associated with an arousal deficit in AD/HD.

Ommundsen, N., Engedal, K., & Oksengard, A. (2011). Validity of the quantitative EEG statistical pattern recognition method in

diagnosing Alzheimer's disease. *Dementia & Geriatric Cognitive Disorders*, 31, 195–201.

The aim of this study was to evaluate the use of a QEEG in the diagnosis of Alzheimer's disease. The QEEG result was found to correlate with atrophy of the medial temporal lobe, but classification accuracy was poor.

Prasad, G., Herman, P., Coyle, D., McDonough, S., & Crosbie, J. (2010). Applying a brain-computer interface to support motor imagery practice in people with stroke for upper limb recovery: A feasibility study. *Journal of Neuroengineering & Rehabilitation*, 7, 60.

This article reports a pilot study in which a brain-computer interface system is used to provide neurofeedback to stroke participants. From the results it was concluded that a brain-computer interface system can be used to provide neurofeedback in poststroke rehabilitation.

Rubik, B. (2011). Neurofeedback-enhanced gamma brainwaves from the prefrontal cortical region of meditators and non-meditators and associated subjective experiences. *Journal of Alternative & Complementary Medicine*, 17, 109–115.

This study to evaluate the perceived effect of neurofeedback-enhanced gamma in prefrontal regions and to determine whether the experience was different between people who do or do not meditate. Increased gamma amplitude was associated with feelings of happiness and love, and reduced stress. Meditation was associated with a greater increase in gamma activity.

Spironelli, C., Angrilli, A., Calogero, A., & Stegagno, L. (2011). Delta EEG band as a marker of left hypofrontality for language in schizophrenia patients. *Schizophrenia Bulletin*, 37, 757–767.

Frontal hypoactivation has consistently been found in subjects with schizophrenia. Delta activity was used as a quantitative index of cortical inhibition in 17 paranoid schizophrenia

patients with prevailing positive symptoms and 17 matched control subjects. Results suggested schizophrenics had a functional deficit of Broca's area.

Stokes, D., & Lappin, M. (2010). Neurofeedback and biofeedback with 37 migraineurs: A clinical outcome study. *Behavioral & Brain Functions [Electronic Resource]: BBF*, 6(9).

This study evaluated the use of combined neurofeedback and hemoencephalography biofeedback to treat migraine sufferers in a clinical outpatient setting. Results indicated that 70% of subjects had at least a 50% reduction in migraine frequency, and this was sustained for more than a year.

Surmeli, T., & Ertem, A. (2011). Obsessive compulsive disorder and the efficacy of qEEG-guided neurofeedback treatment: A case series. *Clinical EEG & Neuroscience: Official Journal of the EEG & Clinical Neuroscience Society (ENCS)*, 42, 195–201.

This study evaluated the use of EEG-guided neurofeedback in 36 drug resistant people with obsessive compulsive disorder. Thirty-three subject showed clinically improvement, and this was maintained over 26 months in 19 subjects.

Teixeira, S., Velasques, B., Machado, S., Cunha, M., Domingues, C., Budde, H., ... Ribeiro, P. (2011). Gamma-band oscillations in fronto-central areas during performance of a sensorimotor integration task: A QEEG coherence study. *Neuroscience Letters*, 483, 114–117.

This study aimed to evaluate QEEG and cortical mechanisms involved in anticipatory actions with specific interest in gamma-band (30–100 Hz) activity. The results suggested that gamma plays an important role in reflecting binding of several brain areas in a complex motor task. These included the selection of movements, preparation and voluntary control of action, motor preparation, perception and execution of movement, and the integration of somatosensory and visual information.

Uhlhaas, P. (2011). High-frequency oscillations in schizophrenia. *Clinical EEG & Neuroscience: Official Journal of the EEG & Clinical Neuroscience Society (ENCS)*, 42, 77–82.

This study focused on the role of high frequency activity in the beta and gamma bands and specific cognitive processes during normal brain functioning and in schizophrenia. Results suggested that gamma activity greater than 60 Hz may have a crucial role for the understanding of cognitive dysfunctions in schizophrenia.

Weber, E., Koberl, A., Frank, S., & Doppelmayr, M. (2011). Predicting successful learning of SMR neurofeedback in healthy participants: Methodological considerations. *Applied Psychophysiology & Biofeedback*, 36(1), 37–45.

Attention deficit/hyperactivity disorder has been successfully treated using neurofeedback,

but training often takes a large number of sessions. The aim of this study was to determine whether performance during the early training sessions can be used to predict if a participant will learn to regulate the EEG rhythms. Results indicated that predictions could be made after the 11th training session.

Wise, V., McFarlane, A., Clark, C., & Battersby, M. (2011). An integrative assessment of brain and body function “at rest” in panic disorder: A combined quantitative EEG/autonomic function study. *International Journal of Psychophysiology*, 79, 155–165.

This study conducted a QEEG and autonomic assessment of panic disorder. The main findings were an overall reduction of spectral power in subjects with panic disorder and within the alpha-1 frequency band.