News from Other Journals and Websites

David A. Kaiser PhD
Published online: 08 Sep 2008.

To cite this article: David A. Kaiser PhD (2003) NEWS FROM OTHER JOURNALS AND WEBSITES, Journal of Neurotherapy: Investigations in Neuromodulation, Neurofeedback and Applied Neuroscience, 7:2, 69-76, DOI: 10.1300/J184v07n02_05
To link to this article: http://dx.doi.org/10.1300/J184v07n02_05

PLEASE SCROLL DOWN FOR ARTICLE

© International Society for Neurofeedback and Research (ISNR), all rights reserved. This article (the "Article") may be accessed online from ISNR at no charge. The Article may be viewed online, stored in electronic or physical form, or archived for research, teaching, and private study purposes. The Article may be archived in public libraries or university libraries at the direction of said public library or university library. Any other reproduction of the Article for redistribution, sale, resale, loan, sublicensing, systematic supply, or other distribution, including both physical and electronic reproduction for such purposes, is expressly forbidden. Preparing or reproducing derivative works of this article is expressly forbidden. ISNR makes no representation or warranty as to the accuracy or completeness of any content in the Article. From 1995 to 2013 the Journal of Neurotherapy was the official publication of ISNR (www.Isnr.org); on April 27, 2016 ISNR acquired the journal from Taylor & Francis Group, LLC. In 2014, ISNR established its official open-access journal NeuroRegulation (ISSN: 2373-0587; www.neuroregulation.org).

THIS OPEN-ACCESS CONTENT MADE POSSIBLE BY THESE GENEROUS SPONSORS
This month’s plethora of articles reflects the growing need to evaluate patients with EEG and other neuroimaging techniques prior to and during treatment intervention.

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 PAPER


The authors examine the dominant frequency during infancy and early childhood in 29 children. This longitudinal study attempts to find the best frequency bins to capture both the dominant frequency activity over posterior sites and what appears to be a functionally independent dominant frequency over central sites—presumably, a precursor to the sensorimotor rhythm. Infants watched a spinning bingo wheel to standardize behavioral and attentional states; 4 year olds a Baby Einstein-like video. EEG was recording from all 29 children at 5, 10, 14, 24, and 51 months of age. Relative power using an average reference montage was calculated in order to assess where peak activity occurred between 3 and 12 Hz.
The author’s characterization of dominant frequency activity during this eyes-open attentive task is a bit confusing, given that significantly more relative power was exhibited in lower frequency bands (3-6 Hz) than the 6-9 Hz band which was identified as dominant. Determining an individual’s dominant frequency during rest or low challenge conditions should probably best be handled without computation—merely wait until bursts appear in the EEG record and note the morphology and frequency of such bursts. The authors performed this general procedure in a second analysis and this confirmed what quantification did not: 6-9 Hz captures posterior alpha rhythms by 10 months of age. For children 4 years old (and presumably older), the 6-10 Hz band is recommended. Some evidence of functional dissociation between central and posterior rhythms is suggested, though not definitively. Unlike the posterior rhythm which continued to increase with age, the central rhythm peaked slightly in frequency in the second year of life when major changes are occurring in locomotor behavior. The mechanisms behind development changes in the dominant frequency, be they myelination, general neuronal maturation, density of neuronal assemblies, or other mechanisms, have yet to be determined.

**ELECTROENCEPHALOGRAPHY**


Good methylphenidate responders had EEG profiles of cortical hypoarousal compared to poor responders.


EEG synchronization (8-10 Hz) occurs in humans (cf. Clemente et al., 1964 for cats) after drinking and reflects the drive reducing and rewarding qualities of oral stimulation and consummatory behavior.


Chronic pharmaco-EEG response pattern reflects both sedating and activating actions in regional specific areas.

The authors recommend systematic cognitive tasking, termed “neuropsychological EEG activation,” during standard EEG recordings to identify seizure-precipitating factors.

**NEUROIMAGING**


The human amygdala may be recruited during affective states, but is not necessary for the production of these states.


Depressive pseudodementia show decreased CBF in the temporo-parietal region, which differs from normal depression profiles.


One-tenth of newly diagnosed patients and one-fourth with chronic active epilepsy develop cerebral, hippocampal or cerebellar atrophy over 3.5 years.


ADHD in adults exhibit reduction of the left orbitofrontal cortex. It’s uncertain whether this reflects a residual deficit or a specific type of adult outcome of the disease.

PTSD neuroimaging studies commonly show hippocampal volume reduction, increased amygdala activation after symptom provocation, and decreased activity of Broca’s area. All suggest the brain that may be damaged by psychological trauma.


During memory retrieval, brain-injured patients showed increased activity in frontal and occipital lobes, as well as the anterior cingulate. Hemispheric asymmetry was reduced in brain-injured patients compared to normal controls.


Asperger’s syndrome is associated with abnormalities in fronto-striatal pathways resulting in defective sensorimotor gating, and this may explain their difficulties inhibiting repetitive thoughts, speech and actions.


Women with childhood depression had higher right midfrontal alpha suppression, and men with childhood depression had higher left midfrontal alpha suppression.


One third of people with a mental illness suffer from a depressive disorder, highlighting the need for early diagnosis and effective treatment.

Right frontal and posterior cingulate regions are implicated in depression in current and past research. Depressed subjects showed more excitatory (21-30 Hz) activity in right superior and inferior frontal lobe (area 9/10/11).


R Repetitive transcranial magnetic stimulation to left frontal cortex produced significant antidepressant responses in 8 of 12 PTSD-plus-depressed patients. Comparable improvements were seen in anxiety, hostility, and insomnia, but not PTSD symptoms.


Patients with mania and unipolar depression show greater residual impairment in more posterior cortical function (temporal lobe) than frontal lobe function in remission.


Specific neurons in the anterior cingulate cortex are responsive to reward expectancy, a possible animal model for obsessive-compulsive disorder and drug abuse.


Affective illnesses may reflect an underdeveloped (or atrophied) prefrontal region, leading to loss of cortical modulation of limbic emotional networks.
MENTAL HEALTH AND NEUROLOGICAL DISORDERS


OCD subjects exhibit deficits in behavioral and cognitive inhibition, which may underlie the repetitive symptomatic behaviors of the disorder.


Two neglected dimensions for understanding human sex differences are ‘empathizing’ (female) and ‘systemizing’ (male). Autism may be considered as an extreme of the normal male profile.


Most studies indicate that slow-frequency repetitive TMS (rTMS) and higher frequency rTMS have antidepressant properties; however, effect sizes are heterogeneous and the durability of antidepressant effects is largely unknown.


Authors report three ADHD endophenotypes: a specific abnormality in reward-related circuitry that leads to shortened delay gradients, deficits in temporal processing, and deficits in working memory.


Mechanisms mediating short interval intracortical inhibition probably differ from those mediating long interval intracortical inhibition and interhemispheric inhibition.

While the majority of children with epilepsy have normal cognitive development, a few with frequent, recurrent seizures show progressive cognitive impairment. Animal models have yet to be developed that mimic human epileptic syndromes.


Most recent PTSD research finds impairment of attention or immediate memory or both.


Right hemisphere attentional deficits are implicated in schizophrenia.

**ONLINE RESOURCES**

The Web is the best resource we have to depict the nature of humanity in its entirety. As such, much of it is specialized, unexplored, and unknown. I’m grateful for the *JNT* readers who have directed me toward relevant websites of which I was not aware.

Kulkosky’s Bookmarks for History of Psychology
www.uscolo.edu/kulkosky/main.htm

The Biofeedback Center
www.drbiofeedback.com

Psychology books online in their entirety:
*The Interpretation of Dreams* by Sigmund Freud
*The Varieties of Religious Experience* by William James
www.psywww.com/books/index.htm

Careers in Psychology
www.psywww.com/careers/index.htm

Searchable Psych Jobs Listings
www.apa.org/
www.psychologicalscience.org/
Psychology Ph.D. program rankings  
www.socialpsychology.org/ranking.htm  
(UCLA, my alma mater, tied for second overall and first in clinical, and  
I thought they were only good at basketball.)

Psychology Journals online  
www.psywww.com/resource/journals.htm

Luscher Color Test-Personality profiles in 5 minutes  
www.supervert.com/shockwave/colortest