



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

## Clinical Corner

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## CLINICAL CORNER

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D. Corydon Hammond, PhD, Editor

*The purpose of the Clinical Corner is to provide responses to clinically oriented questions which may not, in many cases, have been evaluated yet by research. The personal opinions expressed in the column are exactly that, the opinions of the individual authors, often based on their clinical experience. The opinions shared belong to the authors and are not necessarily those of ISNR or the Journal of Neurotherapy. Nonetheless, it is hoped that the diversity of opinion expressed in this column will stimulate thought and the further exchange of ideas. Readers are invited to send questions for consideration to: D. Corydon Hammond, PhD, University of Utah School of Medicine, PM&R, 30 North 1900 East, Salt Lake City, UT 84132 (E-mail address: D.C.Hammond@m.cc.utah.edu).*

In this issue, Clinical Corner examines interhemispheric neurofeedback training. Margaret Ayers, Chuck Davis, Valdeane Brown, and Susan Othmer are some of the pioneers in the area of simultaneously training the two hemispheres, often at homologous sites and each utilize different approaches. Chuck Davis (with his Roshi system, which uniquely combines neurofeedback with light or magnetic stimulation that is driven by the person's own EEG) has typically recommended training at homologous sites (e.g., Fp1 and Fp2, F3 and F4, C3 and C4)

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with two monopolar leads. Val Brown has advocated similar training at C3 and C4, but with multiple inhibits, and inhibiting emergent variability in the EEG rather than amplitude. Although Margaret Ayers often trains within one hemisphere at a time, she is perhaps the first clinician to have used bipolar (sequential) interhemispheric training. Depending on the clinical problem and the patient's EEG patterns, she may train at F3-F4, O1-O2, P3-P4, and also T3-T4 when there are not problems with migraines, seizures, or a history of head injuries (Ayers, 1999). The Othmers have evolved in their clinical model from intrahemispheric work to extensively using interhemispheric training with a bipolar montage.

I have asked Susan Othmer to discuss their current model for interhemispheric training. She has provided readers with a very practical and clinically oriented paper. This is followed by a theoretical, scientifically oriented paper by David Kaiser, PhD, that provides clinicians with serious food for thought. Dr. Kaiser reviews literature both on the brain and EEG literature in relationship to homologous versus non-homologous electrode sites.

#### REFERENCE

- Ayers, M. E. (1999). Assessing and treating open head trauma, coma, and stroke using real-time digital EEG neurofeedback. Chapter in J. R. Evans & A. Abarbanel (Eds.), *Introduction to quantitative EEG and neurofeedback* (pp. 203-222). New York: Academic Press.