Improvements in spelling after QEEG-based neurofeedback in dyslexia: a randomized controlled treatment study. - Breteler MH - *Appl Psychophysiol Biofeedback* - 01-MAR-2010; 35(1): 5-11 (MEDLINE® is the source for the citation and abstract of this record)

Abstract:

Phonological theories of dyslexia assume a specific deficit in representation, storage and recall of phonemes. Various brain imaging techniques, including qEEG, point to the importance of a range of areas, predominantly the left hemispheric temporal areas. This study attempted to reduce reading and spelling deficits in children who are dyslexic by means of neurofeedback training based on neurophysiological differences between the participants and gender and age matched controls. Nineteen children were randomized into an experimental group receiving qEEG based neurofeedback (n = 10) and a control group (n = 9). Both groups also received remedial teaching. The experimental group improved considerably in spelling (Cohen's d = 3). No improvement was found in reading. An indepth study of the changes in the qEEG power and coherence protocols evidenced no fronto-central changes, which is in line with the absence of reading improvements. A significant increase of alpha coherence was found, which may be an indication that attentional processes account for the improvement in spelling. Consideration of subtypes of dyslexia may refine the results of future studies.

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