

# CHANGES IN ELECTROENCEPHALOGRAPHIC QUANTITATIVE ANALYSIS IN PATIENTS TREATED WITH EMDR

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*EMDR basic working theory assumes that traumatic memories remain unprocessed because the innate information processing system is stuck by the psycho-physiological effects of trauma. Traumatic events are stored in their original form, and the recall of traumatic memories causes a high level of disturbance.*

*Left-right rhythmic stimulations of EMDR seem to remove the block in the traumatic memories processing and help memories storing mechanism function at an adaptive level. In recent years many scientific researches have focused on the opportunity to assess the functional connection between different brain areas through quantitative analysis of EEG.*

*According to the aim of this presentation, our attention was drawn to the correlation between slow bands (4-7 Hz) and the activity in the sub-cortical areas involved in working memory and, also, high frequency ranges (>36 Hz) and cortical activities during sensorial stimuli processing. There are a few quantitative EEG studies on patients with PTSD. The EEG analysis of subjects with childhood abuse history revealed less synchronization in the two hemisphere's functioning compared to normal control subjects.*

*EEG quantitative analysis in abused children showed a higher intra-hemispheric left coherence and a lower intra-hemispheric right coherence in comparison with normal control subjects. According with these results, the aim of this presentation is to test if there are recordable changes in the intra and inter hemispheric synchronization between brain areas where information processing occurs (limbic system, prefrontal cortical area, posterior cortical areas) in patients with PTSD after EMDR treatment.*

**Key-words:** PTSD, EMDR, EEG