

# Conscious Attention, Meditation, and Bilateral Information Transfer.

Posted At : March 9, 2013 4:32 PM | Posted By : [Tim Brunson, PhD](#)

Related Categories: Meditation

Recent findings indicate that conscious attention is related to large-scale information integration of various brain regions, including both hemispheres, that enables integration of parallel distributed modalities of processed information. There is also evidence that the level of information transference related to integration or splitting among brain regions, and between hemispheres, establishes a certain level of efficiency of the information processing. The level of information transference also may have modulatory influences on attentional capacity that are closely linked to the emotional arousal and autonomic response related to a stimulus. These findings suggest a hypothesis that changes in conscious attention, specifically during meditation could be reflected in the autonomic activity as the left-right information transference calculated from bilateral electrodermal activity (EDA). With the aim to compare conscious attention during meditation with other attentional states (resting state, Stroop task, and memory task), we performed bilateral EDA measurement in 7 healthy persons during resting state, Stroop task, neurofeedback memory test, and meditation. The results indicate that the information transference (ie, transinformation) is able to distinguish those attentional states, and that the highest level of the transinformation has been found during attentional processing related to meditation, indicating higher level of connectivity between left and right sides. Calculations other than pointwise transinformation (PTI) performed on EDA records, such as mean skin conductance level or laterality index, were not able to distinguish attentional states. The results suggest that PTI may present an interesting method useful for the assessment of information flow, related to neural functioning, that in the case of meditation may reflect typical integrative changes in the autonomic nervous system related to brain functions and focused attentional processing.

Clin EEG Neurosci. 2012 Nov 19. Bob P, Zimmerman EM, Hamilton EA, Sheftel JG, Bajo SD, Raboch J, Golla M, Konopka LM. Center for Neuropsychiatric Research of Traumatic Stress, Department of Psychiatry, First Faculty of Medicine, Charles University, Prague, Czech Republic.

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