

Origami Paper Folding Intervention Changes Alpha Oscillations Associated with Better Cognitive Ability in Normal Older Adults

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Abstracts will be considered for both poster and platform presentations

Cognitive/Behavioral disorders

Origami has often been used to engage spatial attention and cognitive motor skills. The current study aims to understand the effect of origami training on cognitive aging. We tested the hypothesis that origami training enhances cognitive functions such as visual spatial attention. Better cognitive ability such as enhanced visual attention has been linked to lower alpha frequencies in age related neurological diseases (1). In this study, 36 cognitively-normal participants between ages 65-80 were randomly assigned to a reading, origami, or placebo group for eight weeks. The origami group consisted of 12 group members with a mean age of 73.25 ± 5.40 where 41% males and 58% were females. Pre- and post- interventions EEG signals were collected while performing the Bluegrass Short-Term (BeST) memory task. These measures would decrease the alpha power during intervention to increase speed of information processing. Origami participants showed decrease in right occipital sites (-0.003 uV2, p<0.05). Participants in the reading group showed increase in alpha power in the left frontal (0.002 uV2, p=0.009), and right frontal lobe (0.006 uV2, p=0.01). The reading group did not show changes in posterior sites. Finally, the age matched control group showed no statistical significant change. The results are consistent with other cognitive interventions claim to increase general cognitive function for patients with normal aging or dementia (2). Our results suggest that origami intervention enhance cognitive function by increasing attention and long term memory performance mediated by alpha waves in the right visual cortex in older adults. The training also transfers to untrained task performance, i.e. faster reaction times in BeST task, and enhanced visual attention that was not part of the intervention.