

Research Validates Brain Stimulating Device

Oct 17, 2017 | Posted by [Patricia Derrick](#) | [Front](#) | [0 comments](#)

Brainpaths Effective Brain Stimulating Device: fMRI Study Using BCS (braille character stimulator)

US National Library of Medicine National Institute of Health dated February 15, 2013: Design and evaluation of an innovative MRI-compatible Braille stimulator with high spatial and temporal resolution.

In a study published by NCBI [NCBI.nlm.nih.gov] February 15, 2013 and conducted in Warsaw, Poland December 2, 2012

[<http://www.researchgate.net/publication/233940534>] researchers successfully concluded: a direct tactile stimulation device designed to allow investigation of somatotopic organization of brain sensory areas, stimulates the brain of the user. A Braille Character Stimulator (BCS) designed to be used with fMRI scans, was used with 11 sighted adult subjects undergoing an fMRI (functional magnetic resonance imaging), providing the technology to use fMRI's to find solutions and investigate the sensory stimulation of the brain. BCS devices provide flat-topped pins – same size and dimensions as Braille – allowing fingertip touching that stimulates the brain. Other direct tactile stimulation devices were also included in this study.

The fMRI experiment with eleven right-handed sighted adult subjects touching protruding pins as directed and the stimulation reflecting parameters of the natural stimulus, showed significant activations in several cortical areas, including bilateral primary (SI) and secondary somatosensory (SII) cortices, bilateral premotor and supplementary motor areas, inferior frontal gyri, inferior temporal gyri and precuneus, as well as contralateral (to the stimulated hand) thalamus.

The results validate the use of the fingertip tracing stimulators as a delivery method of effective stimuli application in fMRI studies, in both sighted and visually impaired subjects. This study describes the design and experimental evaluation of an innovative MRI-compatible stimulator, enabling precise and stable delivery of standardized pins with high temporal resolution, but without any meaning to the characters or pins.

The results of the NCBI study validate the use of direct tactile stimulation devices – validating the devices as methods of effective stimuli application in fMRI studies, without surgery and without invasive methodology.

Using an fMRI-compatible stimulator showing significant brain stimulation, provides evidence of brain stimulation with high spatial and temporal resolution, such as Brainpaths devices. Significant activations in several cortical areas, including bilateral primary (SI) and secondary somatosensory (SII) cortices provide a method and apparatus to increase relaxation, improve memory, and relieve anxiety, depression and stress.

With Brainpaths new USPTO Patented technology, patent issued September 15, 2015, Brainpaths will continue to undergo fMRI (functional Magnetic Resonance Imaging), measuring brain activity by detecting changes associated with blood flow, clearly demonstrating stimulation to the sensory motor cortex and other areas of the brain.