

Cerebellar tDCS: A novel approach to augment aphasia treatment

Rajani Sebastian, Ph.D., CCC-SLP

Johns Hopkins University

People with post-stroke aphasia may have some degree of chronic deficit for which current rehabilitative treatments are variably effective. Accumulating evidence suggests that transcranial direct current stimulation (tDCS) may be useful for enhancing the effects of behavioral aphasia treatment. However, it remains unclear which brain regions should be stimulated to optimize effects on language recovery. This lecture will focus on the therapeutic potential of a novel tDCS stimulation site, the right cerebellum, in augmenting language recovery post stroke. Current evidence derived from neuroanatomical, functional neuroimaging and clinical studies indicate that the right cerebellum has a cardinal role in various aspects of cognitive and language processing. In addition, cerebellar tDCS studies in healthy individuals provide evidence that right cerebellar tDCS modulates human cognitive and language functions. I will present preliminary data investigating the behavioral effects of multiple consecutive cerebellar tDCS sessions coupled with naming therapy in stroke participants with chronic aphasia. Targeting the intact right cerebellum allows for the possibility of identifying a single target site that can be used across people with aphasia with varying lesion sites and size in the left hemisphere.