

Thursday, October 12th, 2pm EDT

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Lessons from studying behavioral and neural effects of transcranial direct current stimulation in primary progressive aphasia

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Transcranial direct current stimulation (tDCS)—a non-invasive technique that is easy to implement by trained clinicians—has been increasingly shown to be a valuable adjunct to speech and language therapy in stroke rehabilitation and recently in primary progressive aphasia (PPA), a neurodegenerative syndrome where language deficits are the first and foremost symptoms. Most studies in the field, however, report tDCS effects on small sample sizes (1-8 participants) in underpowered designs and analyses that usually include only one of the three PPA variants. I will present on the state-of-the science in neuromodulation approaches in PPA. I will also present the results of a large cohort of PPA participants treated under the same stimulation protocol. We tested the additive effects of 15 sessions of anodal tDCS over the left IFG (a main language production area) coupled with written language production/spelling therapy, in a sham-controlled, double-blind, within-subjects crossover design. Overall, tDCS was more effective than language therapy alone (sham): therapy gains lasted longer (up to 2 months) and generalized to untrained items. There were, however, differential effects of tDCS in each variant. Finally, we evaluated which brain areas may predict therapy outcomes. From all areas tested, only the volumes of the left hippocampus and the left fusiform predicted performance on trained and untrained items in writing/spelling. Finally, I will present some data on the mechanisms of tDCS over the left IFG looking at changes in functional connectivity using resting-state fMRI and changes in the inhibitory neurotransmitter GABA using magnetic resonance spectroscopy (MRS).

The lecture will be held at Johns Hopkins University. However, it will be broadcast live.

Viewing event at the University of South Carolina:

Room #140, Discovery I, 915 Greene Street, Columbia, SC 29208

Date: Thursday, October 12th, Time: **2pm – 3pm EDT**

The viewing event will be catered!

The lecture can also be followed online from your computer, tablet or smartphone, via the following GoToMeeting address (no password required): <https://global.gotomeeting.com/join/667426173>

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