Transcranial Direct Current Stimulation (tDCS) Effect on Motor Skill Transfer Across Tasks

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Research Question

Does transcranial direct current stimulation (tDCS) enhance the transfer of motor skill ?

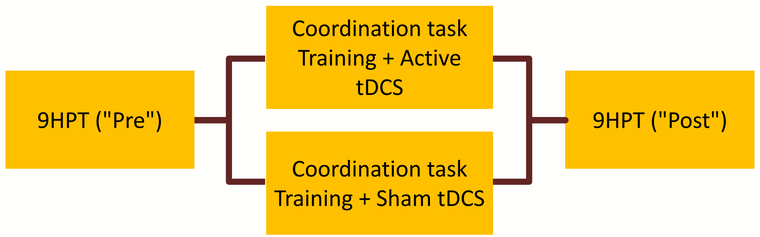
Methods

- 10 healthy, right-handed participants trained on a coordination task (Figure 1) using their non-dominant hand.
- Performance on the 9 Hole Peg Test (9HPT) (Figure 2) was assessed before and after motor training (average of 3 trials).

Figure 1

Figure 2

- Assigned to one of 2 tDCS groups:
  - ✓ Active stimulation during training: Electrical current stimulation for 20 minutes at current density of up to 2mA: n=5
  - ✓ Sham (inactive) stimulation + training: control condition that delivers 1-minute of stimulation only at beginning and end of session : n=5



- Anode placed over C4; cathode placed over left supraorbital area (Figure 3)

Figure 3

Background

Transcranial direct current stimulation (tDCS) is a non-invasive form of brain stimulation that has been used to help improve motor control. This project investigates the effect of tDCS on the transfer of motor learning to an untrained task.

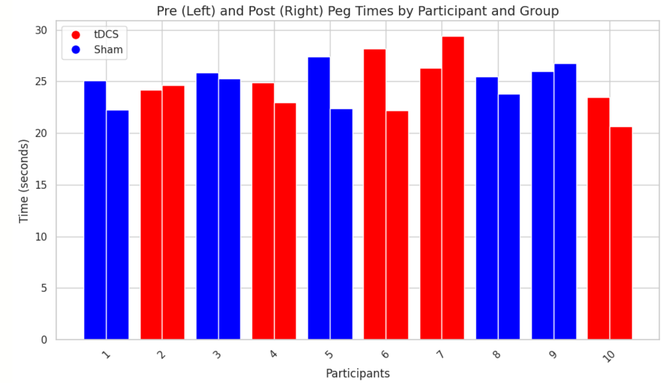
Conclusion

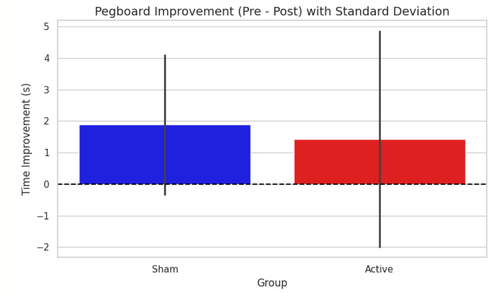
While the data suggests that both groups improved 9HPT performance from before to after stimulation, the high variability and small sample size limit the ability to draw strong conclusions regarding the effect of tDCS on the transference of motor tasks. Future studies may want to include a larger sample size to get a more accurate analysis.

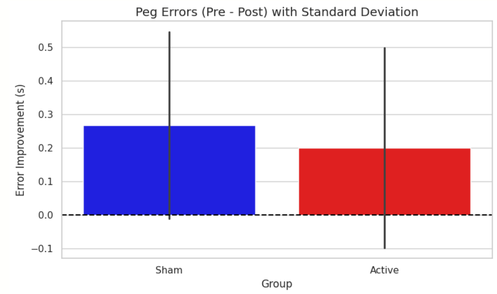
Acknowledgement

I would like to thank Dr. Schaefer, Jessica Trevino, Alexi Reed, Keston Kajitani and Triton Johnson for their support throughout the process of completing this FURI project. I am extremely grateful for their assistance in all aspects of managing this project.

Results







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