

RESULTS (N = 52)





Baseline differences in Flanker unsurprising given broad range of pre-test scores across participants: (and modest N)



Broad range of Stroop pre-test scores across participants also, but:



Despite broad range of Flanker scores. test-retest reliability was relatively good ... Suggesting that, had it existed, an effect of tDCS on Flanker should have been detectable (after controlling for baseline differences)



For Stroop, test-retest reliability was not very good... Suggesting that, if it exists, an effect of tDCS on Stroop would be hard to detect (i.e., individual performance may be unstable and thus an unreliable dependent variable)



DISCUSSION

Data collection may(?) resume (target was 60/condition)

Currentlv...

- · No effect of anodal tDCS over PFC on cognitive control (i.e., Flanker or Stroop incongruency effects) ... with our montage and stimulation parameters
- Results highlight importance of taking individual differences into account: If we had only compared post-test performance, we would have erroneously concluded that anodal tDCS produces a highly significant (7%!) detriment in cognitive control in Flanker!
- Reminders:
- · When using tasks with large individual differences, test large sample and/or use pre- vs. post-test design
- Also consider test-retest reliability (not great for Stroop)

Future

 Test montage which current modeling suggests may better stimulate PFC: anode placed posterior to PFC, so midpoint of current is over PFC (Datta et al., 2012)

Datta, et al. (2012). Inter-individual variation during transcranial direct current normalization of dose using MRI-derived computational models. *Frontiers in* mburgio MJ, orr JM. (2018). Effects of prefrontal tDCS on executive function considerations revealed by meta-analysis. Neuropsychologia. 117:156-168. Keye, et al. (2009). Individual differences in conflict-monitoring: Testing means and covariance: hypothesis about the Simon and the Erlisen Flanker task. *Psychological Research*, 73, 762-7 Miller, E. K., & Cohen, J. D. (2001). An integrative theory of prefrontal cortex function. *Annual P Neuroscience*, 24, 167-202.