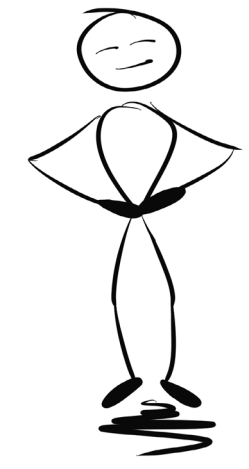


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Does Qigong Moving Meditation Improve Fatigue as much as Exercise and Nutrition?

Qigong:



Qigong:

- Engages both mind and body
- Includes slow movements, breathing exercises and meditation, with intention/attention directed to specific body and mind processes
- Lower metabolic energy demands, easier to adhere to when fatigued

Healthy Living Comparison (HLC): Exercise and Nutrition



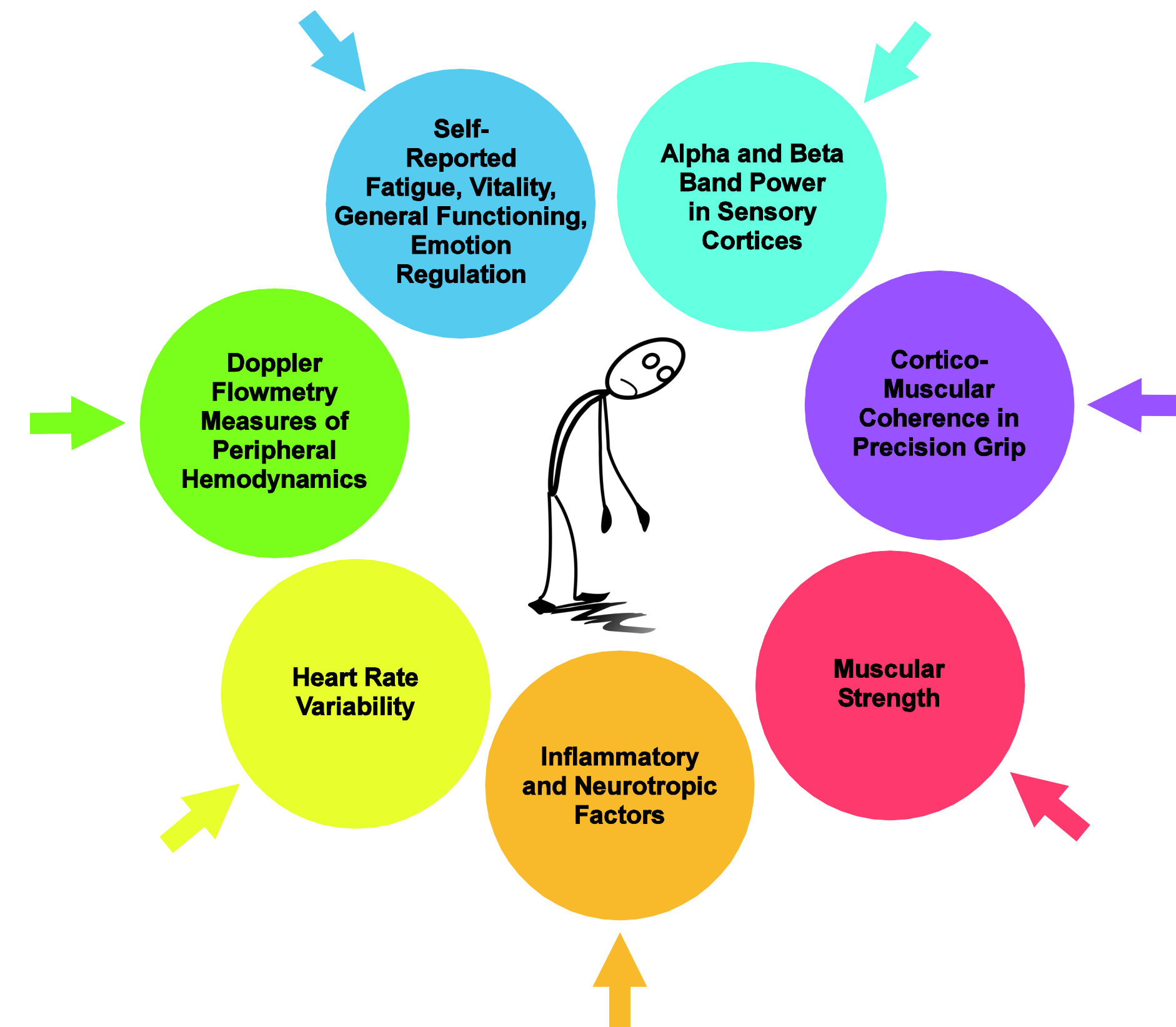
Exercise:

- Engages primarily the body, little engagement of the mind
- High metabolic energy demands

Fatigue in Cancer Survivors

- Cancer Related Fatigue (CRF) affects ~1/3 cancer survivors
- Complex multi-dimensional experience impacting multiple biological and psychosocial systems
- Qigong, exercise and nutrition may each improve CRF, yet biological mechanisms are less understood

Multi-Dimensional Investigation of Physiological Changes with Treatment

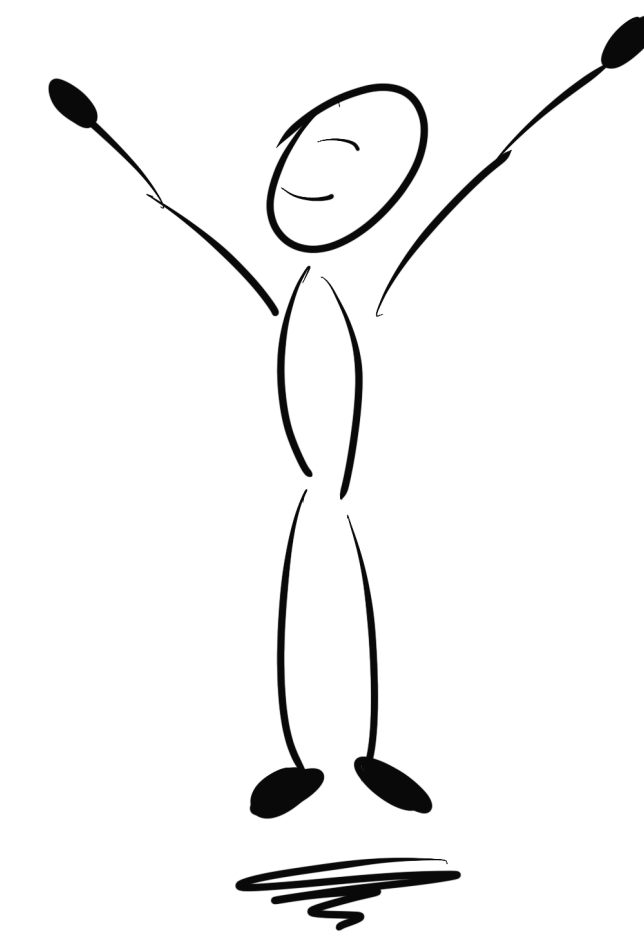
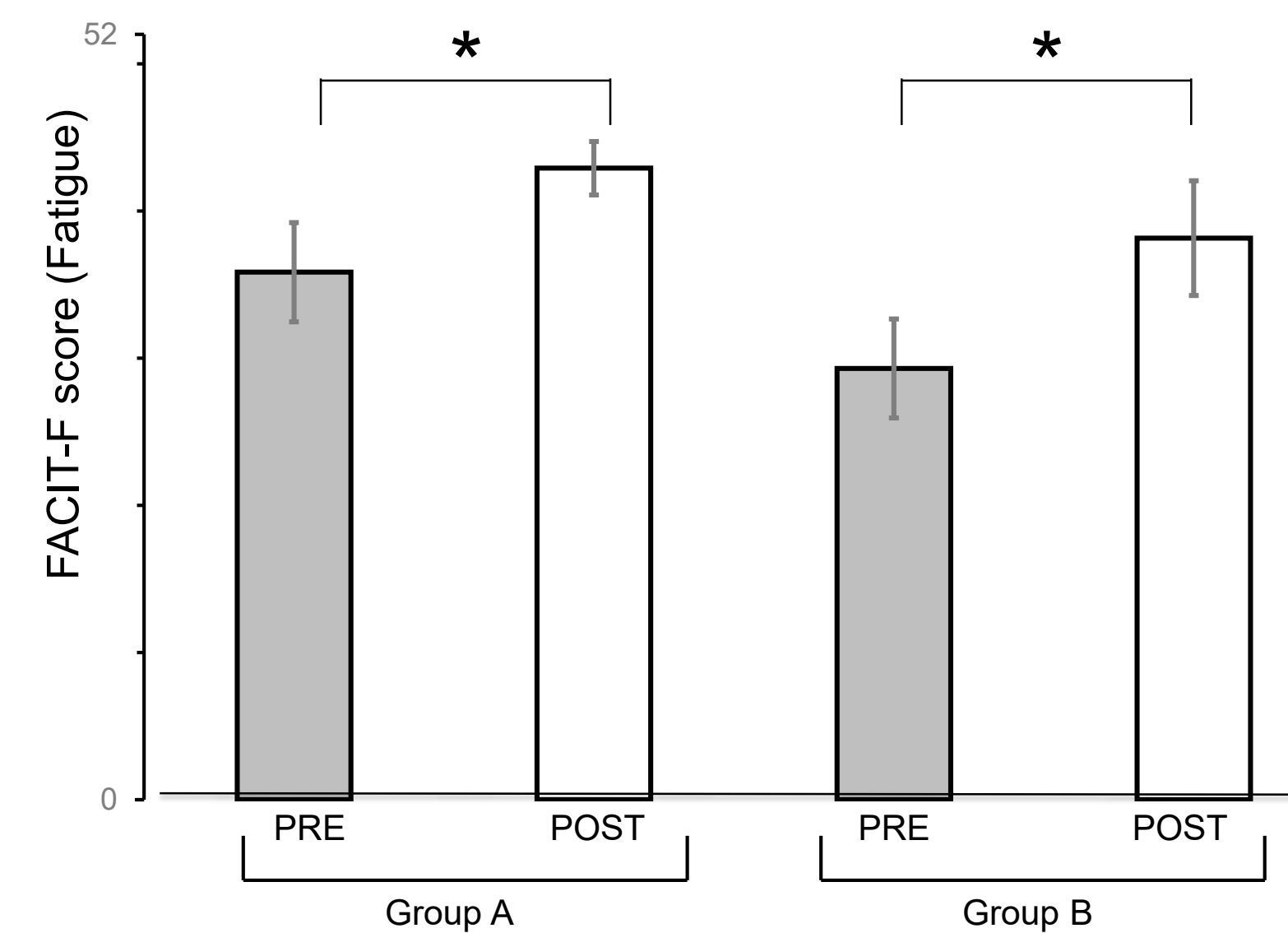


Randomized Controlled Trial (RCT)

- In this non-inferiority pilot RCT (NCT03259438), we test the hypothesis that a 10-week Qigong class will reduce fatigue as much as a 10-week HLC class
- Participants are female cancer survivors, out of treatment for > 8 weeks, report fatigue interfering with daily functioning as >2/10, no active peripheral neuropathy
- Data collected in 2 years using NIH stage model for Qigong curriculum development

2016: 19 randomized to Qigong, 19 randomized to HLC
2017: 22 randomized to Qigong, 21 randomized to HLC

Qigong Reduced Fatigue (Primary Outcome) as much as Exercise and Nutrition (HLC)



Repeated-measures ANOVA and paired t-tests reveal both Qigong and HLC significantly improve **fatigue (primary outcome)** post intervention ($F=10.21$, $p = 0.00417$); no between-group difference \rightarrow *consistent with the hypothesis that Qigong is not inferior to HLC in improving fatigue in cancer survivors*

Self-reported general well being and vitality scores improve in both groups (p 's < 0.05); no between-group difference

Self-reported emotion well being/regulation improves in both groups (p < 0.05); no between-group difference

Preliminary analyses of inflammatory cytokines yield no significant difference pre-post intervention or between groups

Preliminary analyses of muscular strength measures yield no significant difference pre-post intervention or between groups

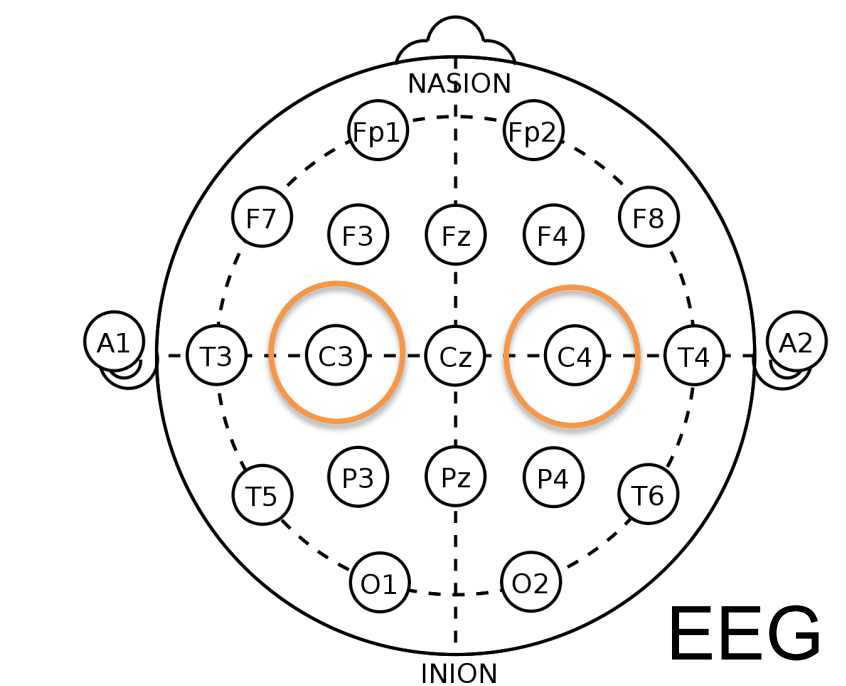
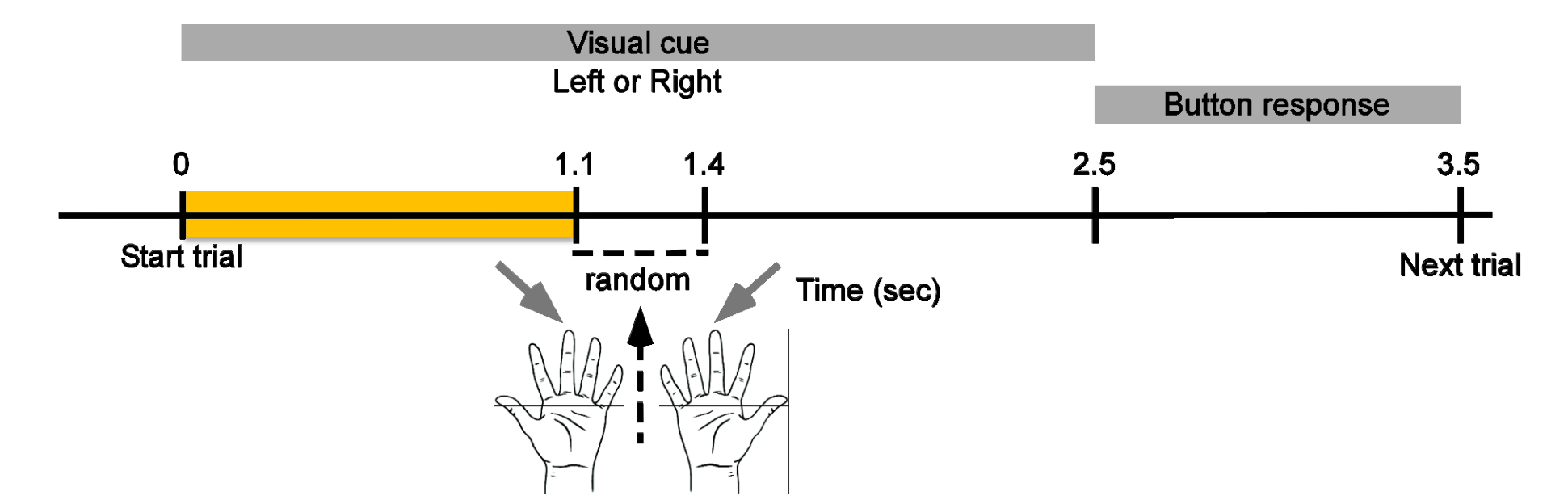
Ongoing and Future Directions

Researchers currently blind to groups \rightarrow Ongoing data analysis

- EEG-EMG cortico-muscular coherence
- Genetic analysis of inflammatory immune expression
- Heart rate variability/respiratory sinus arrhythmia

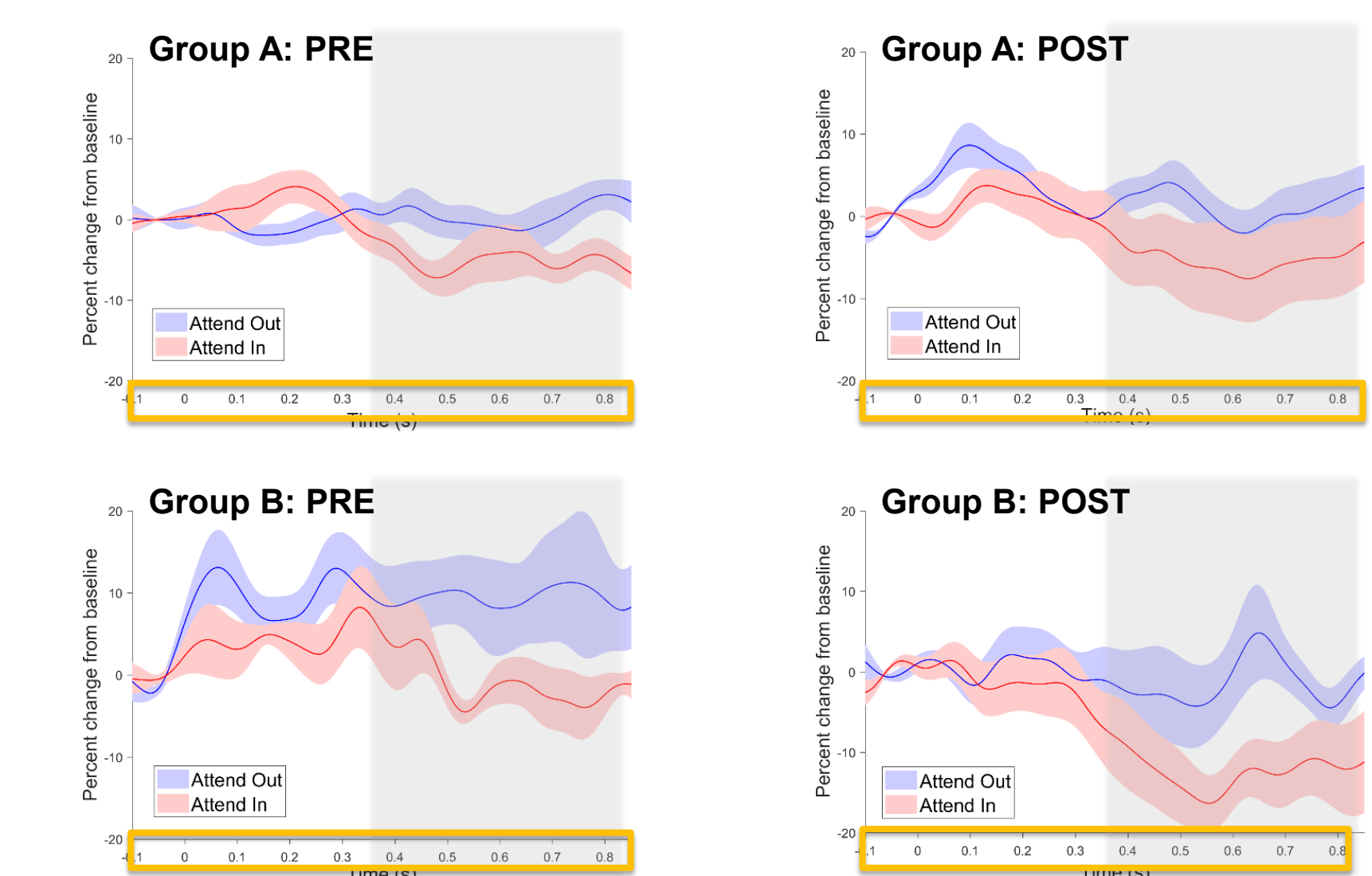
Reconfiguring relevant measures for future rounds of the study

Tactile Detection Task

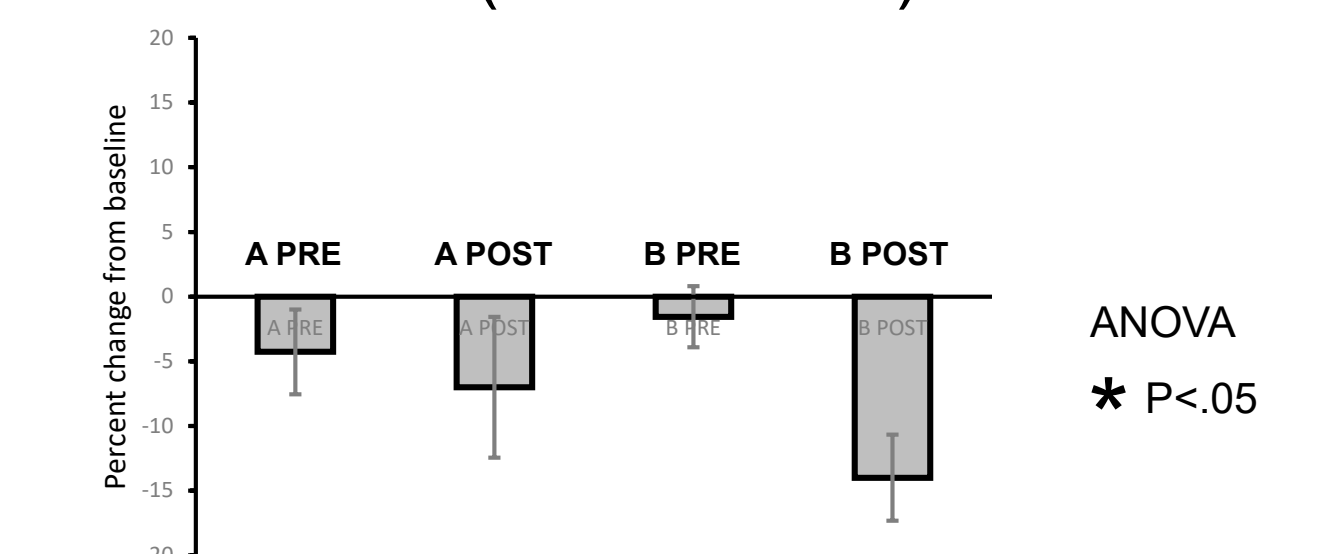


Attentional Modulation Of Sensorimotor Beta Rhythms (15-29 Hz) is Different Post Treatment and Across Groups

*2017 data
A: N=9
B: N=8



Attend In (550-650 ms)



Acknowledgements

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