

Mind Matters: Neural Differences in Mild Cognitive Impairment

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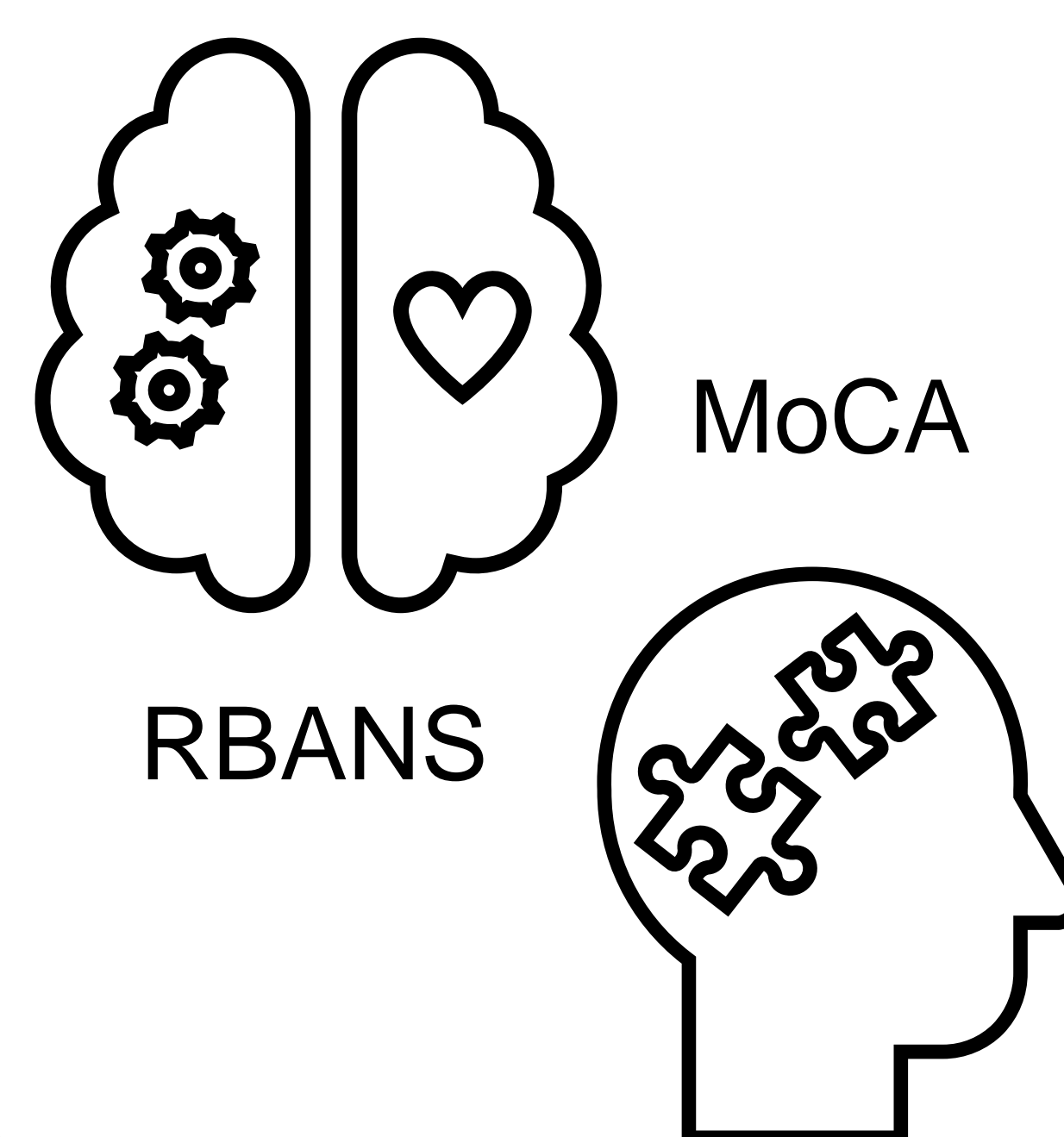
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INTRODUCTION

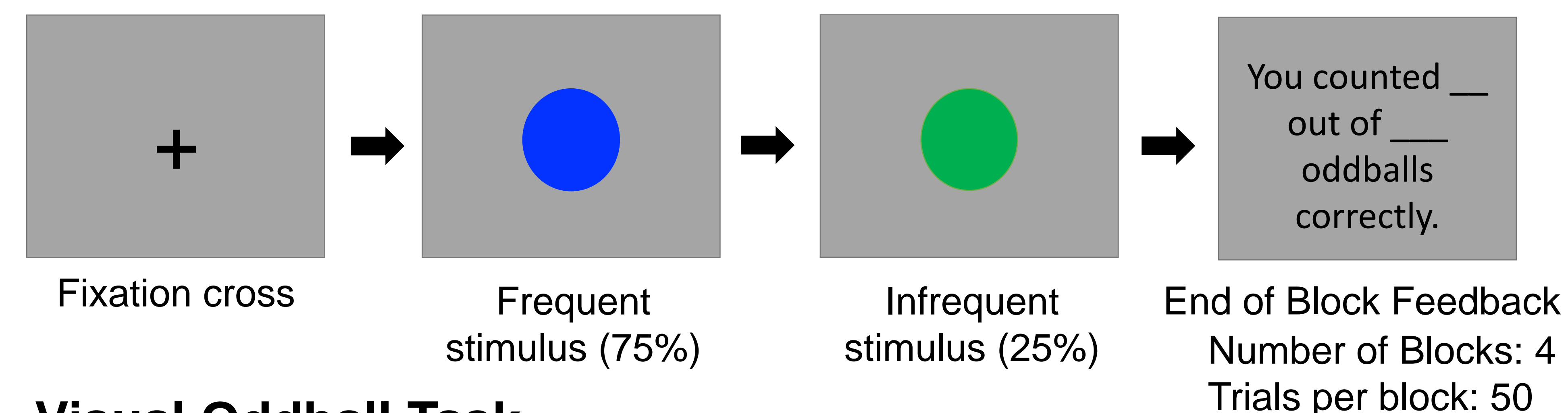
- Mild Cognitive Impairment (MCI) is a neurodegenerative disorder, affecting 10-15% of senior citizens.
- MCI affects 1 of 6 domains: memory, social functioning, language, visuospatial, complex attention, or executive functioning
- Ability to use the environment to update thoughts and actions (context updating) is impaired in MCI due to structural degeneration.
- Surface electroencephalography (EEG) is a non-invasive way to measure brain wave activity.
- The P300 is an event related potential (ERP) connected to context updating.

Research Question: How will P300 amplitude compare for MCI and age-matched controls using mobile EEG and a visual context-updating task?

Behavioural Testing



METHODS

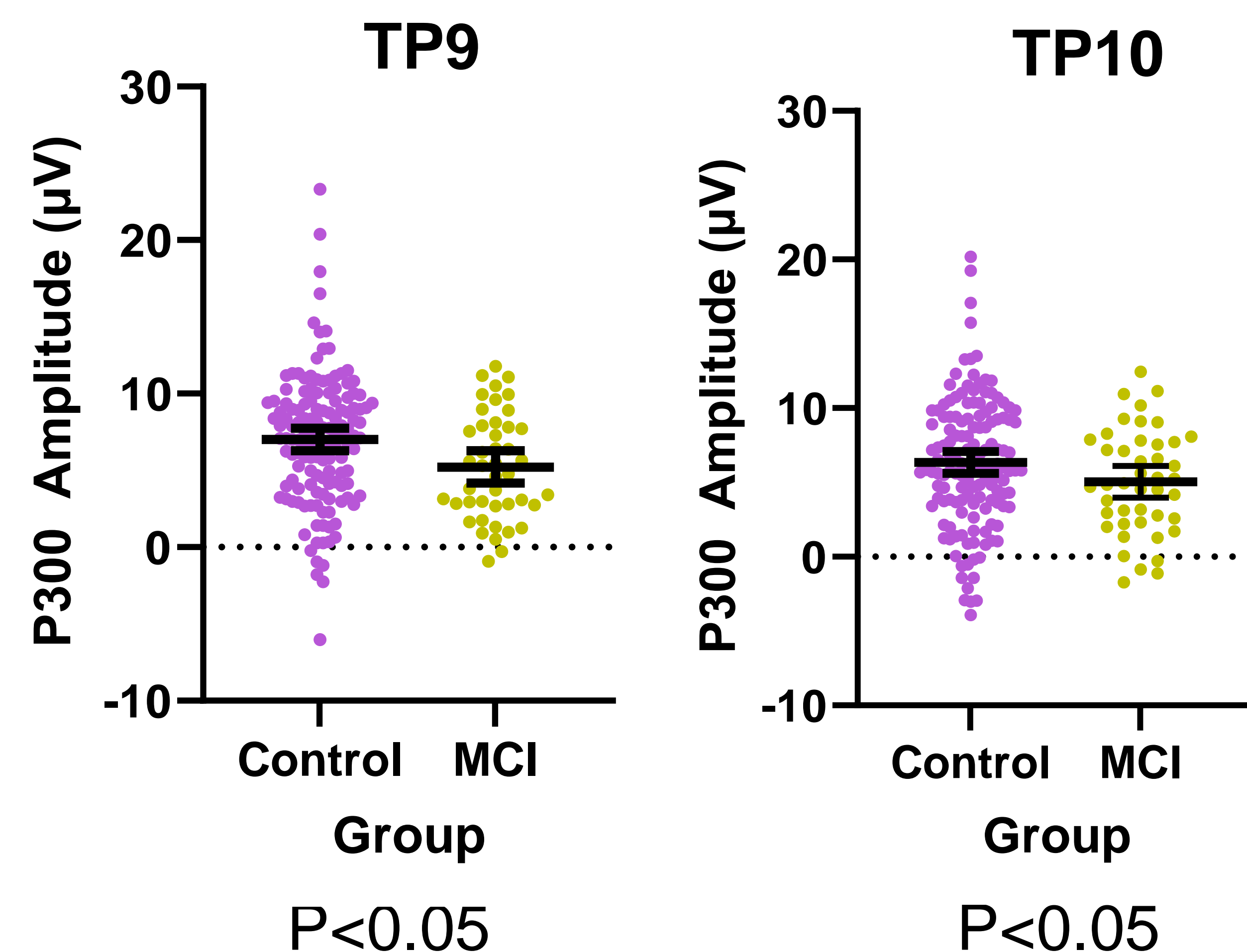


Visual Oddball Task

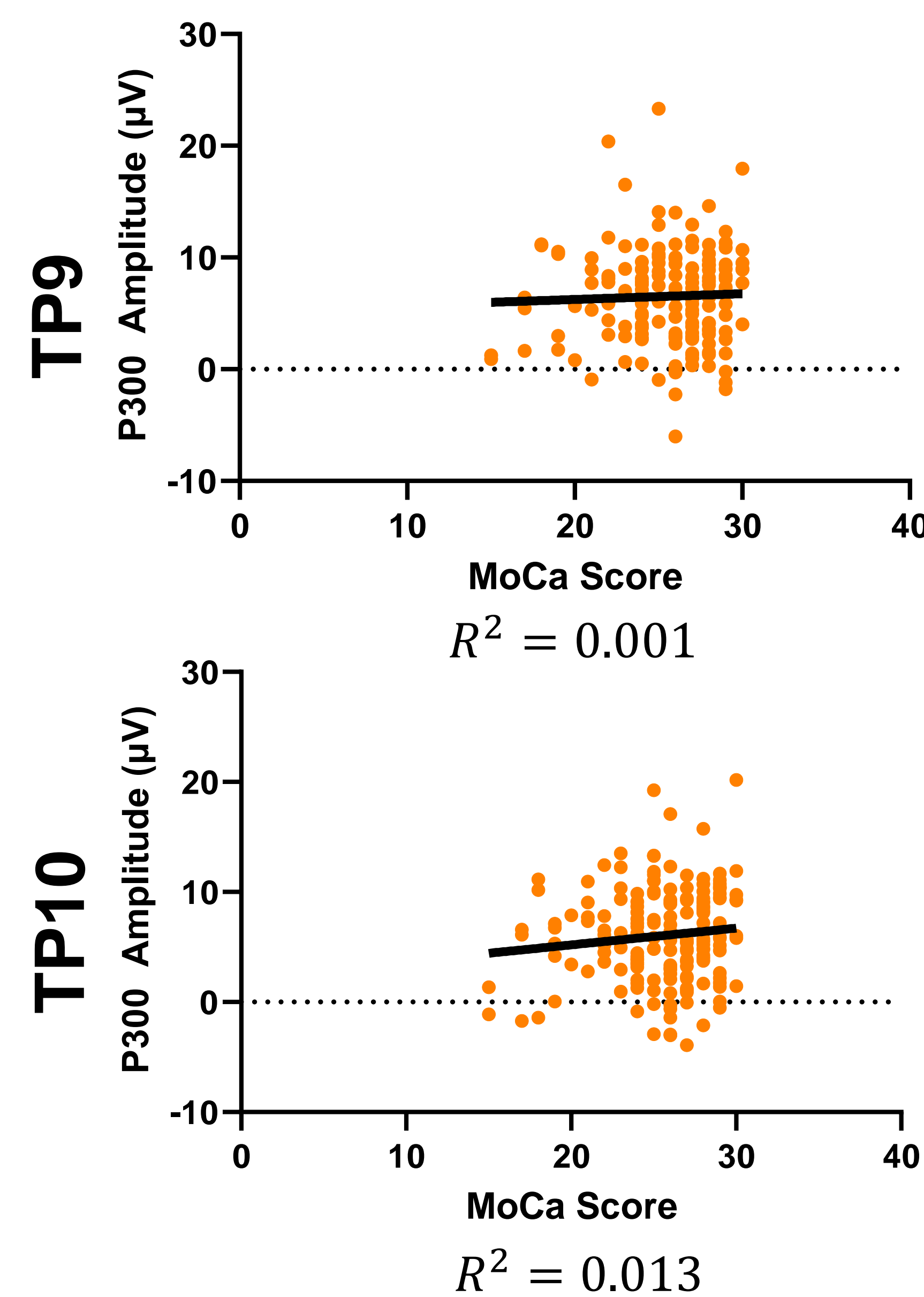
- Diagnosed MCI and age-matched control participants completed a visual oddball task.
- Data was recorded using the Developer Kit (CGX) mobile EEG system.
- Signal analyzed at mastoid electrodes TP9 (left) and TP10 (right).

RESULTS

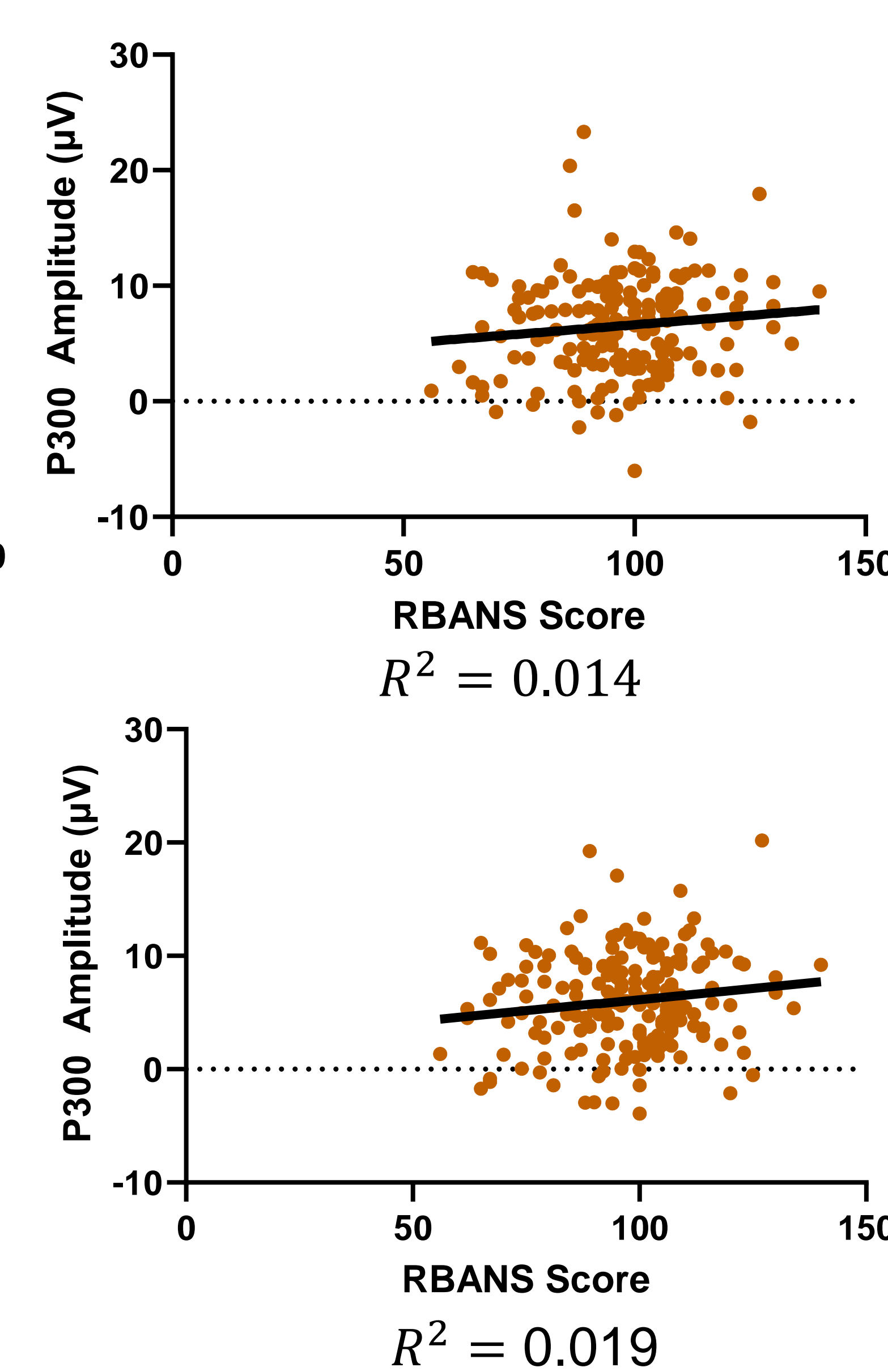
P300 Group Difference



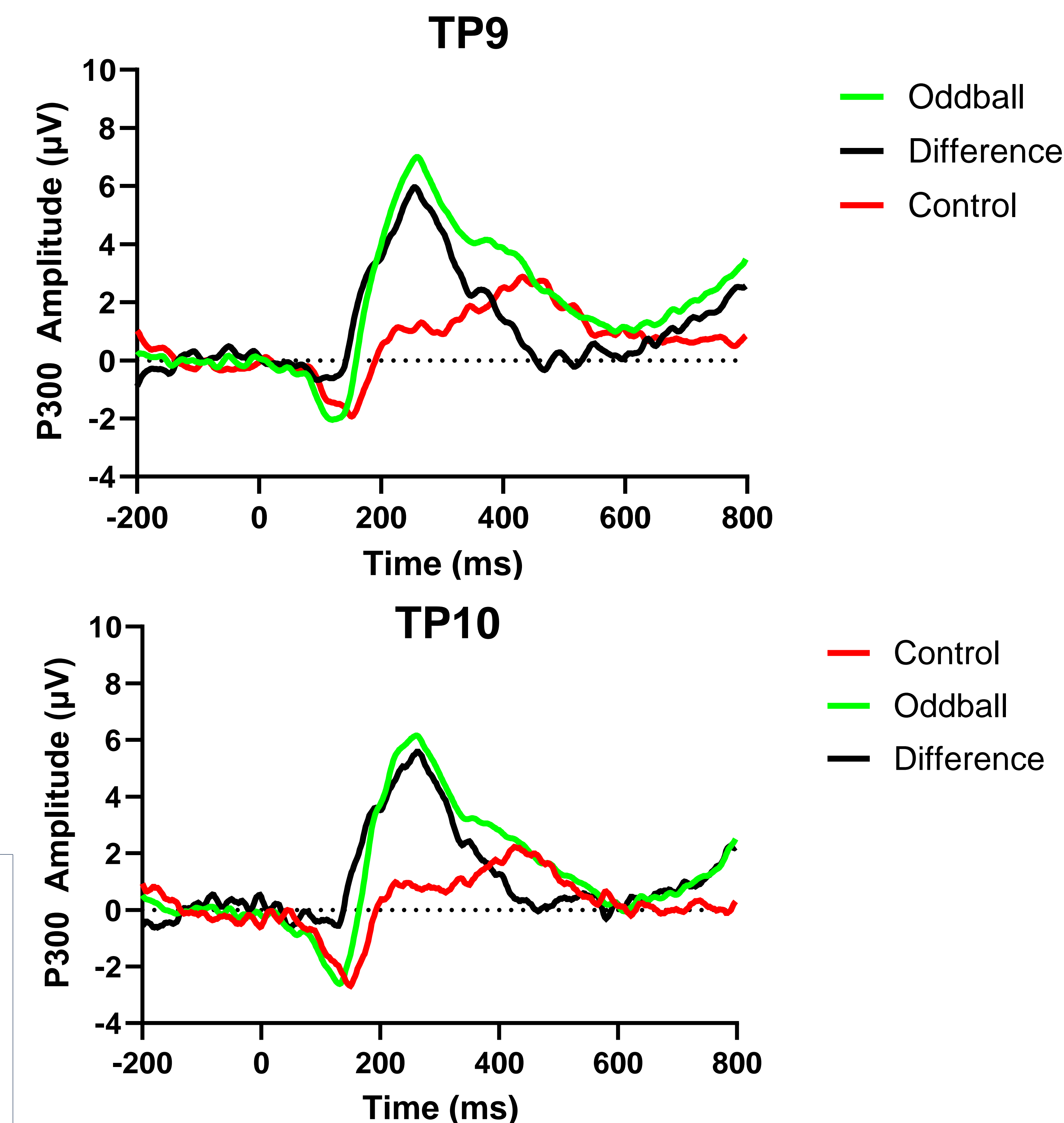
P300-MoCA Score



P300- RBANS Score



Oddball Task P300 Amplitude



CONCLUSIONS

- P300 amplitude was smaller for the MCI group in comparison to the control at TP9 and TP10 using mobile EEG.
- P300 amplitude may reflect decreased context-updating ability and structural degeneration in MCI.
- Standardized behavioural testing was not indicative of P300 amplitude.

