

INTRODUCTION

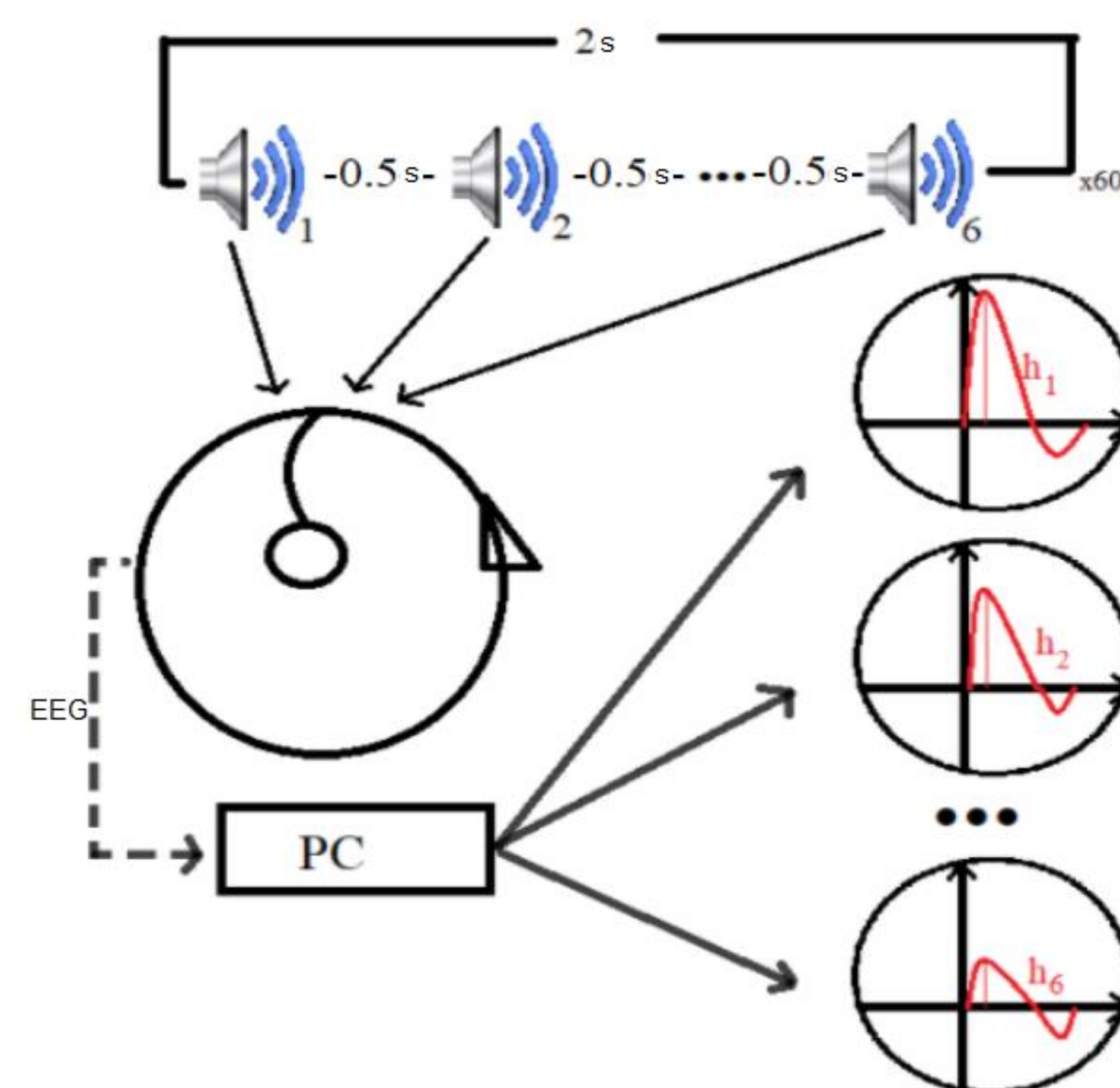
- Although language impairment is not a core symptom of Autism Spectrum Disorder (ASD), children with ASD often have language deficits (Kelley 2011, Tager-Flusberg 2006)
- Numerous studies claim that children with ASD have atypical auditory processing (Linke et al. 2018, O'connor 2012) and reduced neural habituation to repeating sensory inputs in all sensory modalities (Guiraud et al. 2011, Jamal et al. 2020, Ruiz-Martinez et al. 2020).
- Since speech perception starts from the basic auditory processing, we hypothesized that reduced habituation to repeated sounds may be one of the possible underlying mechanisms of language impairment in children with ASD.

OBJECTIVES

The goal of the present study is to investigate neural habituation in auditory modality in ASD children and to find whether this mechanism is related to language processes.

MATERIALS AND METHODS

- 40 primary-school-aged children will participate in this study (20 with ASD, 20 typically developing children as a control group)
- Behavioral assessment: children's non-verbal IQ is measured by Kaufman Assessment Battery for children II (Kaufman, Kaufman 2005), language abilities are measured by Russian Child Language Assessment Battery (Lopukhina et al. 2019, Arutiunian et al. 2021).
- EEG paradigm: participants watched silent cartoons, while auditory stimuli were presented in two blocks. Firstly, 60 trials consisted of six pure tones were presented with ISI 0.5 s., and 2 s. interval between trials. Secondly, syllables (/pa/) were presented with the same design.

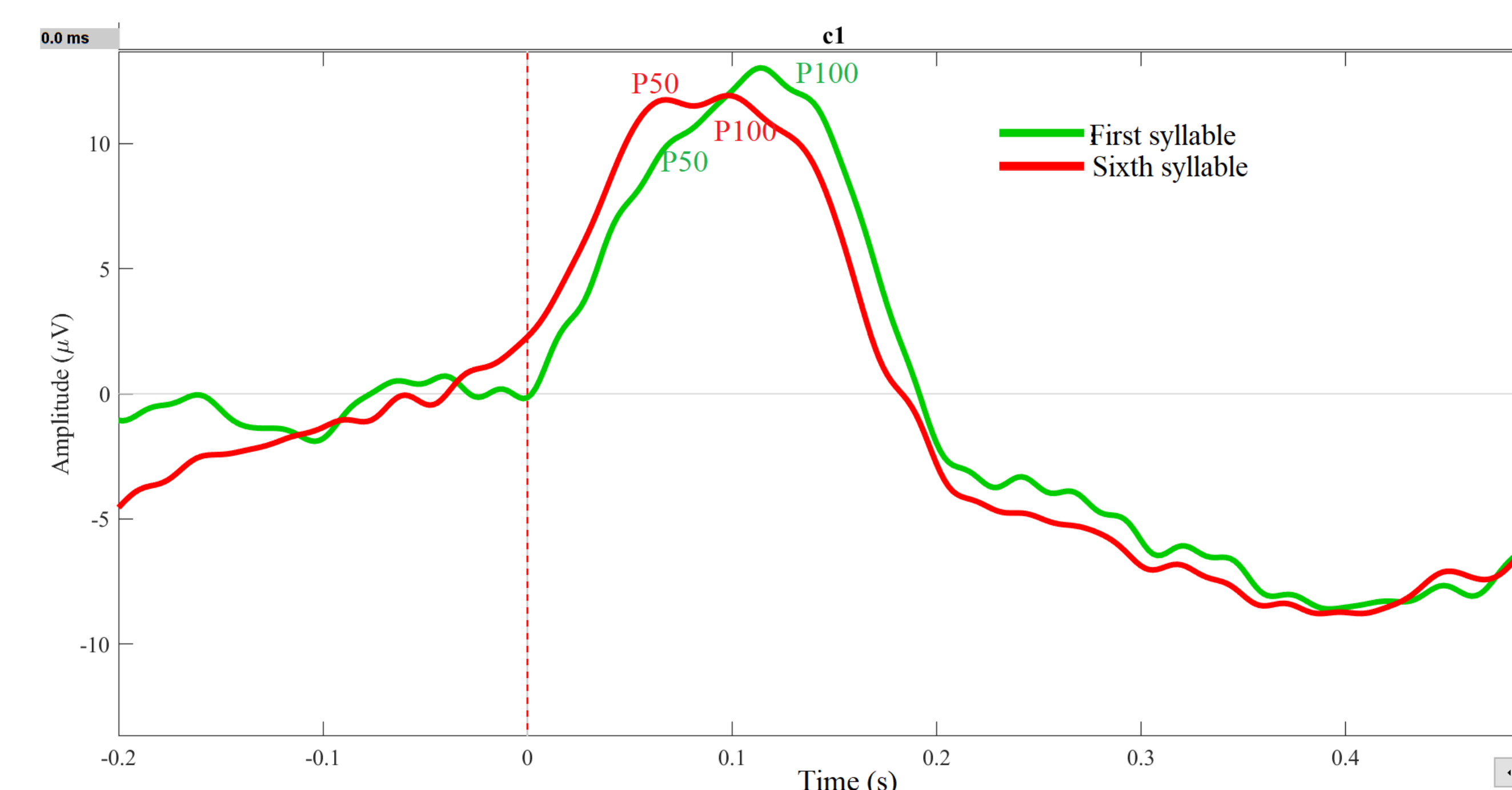
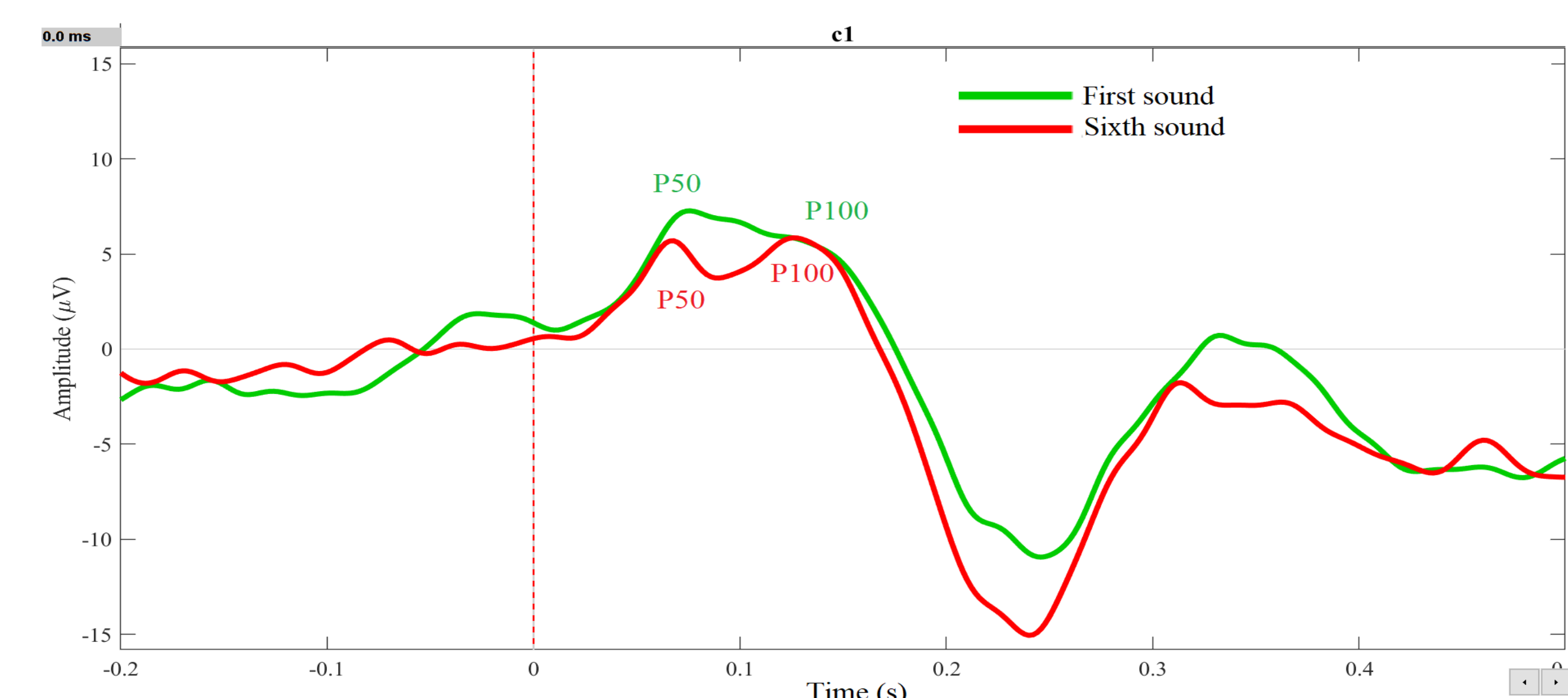


HYPOTHESIS

- The present study is on a stage of collecting data.
- We expect to find a neural habituation, reflected in a suppression of auditory ERPs from first to sixth sound, in typically developing children and abnormal habituation in children with ASD.
- We also expect to find correlation between strength of habituation and language abilities

CONCLUSION

The data on graphs is preliminary results on Cz electrode for those of TD children, who we have already analyzed (6 participants). We can see all basic auditory event-related potentials. We continue collecting data and then will directly compare habituation for TD and ASD children. Confirmation of our hypothesis may shed light on the mechanisms of speech impairments in ASD children.



Preliminary auditory ERPs on Cz electrode. First diagram – sounds, second – syllables. TD group.

REFERENCES

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CONTACTS

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