Executive Summary

This one-page summary outlines the core contributions and findings of the P300Study presented at the ADHD2025 Congress.

Objective

To evaluate whether visual ERP (vERP) components—specifically the P300 wave—can serve as predictive biomarkers for response to methylphenidate (MPH) treatment in adults with ADHD.

Key Highlights

- **Phase 1 of the study has been successfully completed**, including clinical and electrophysiological evaluation of 40 adult participants.
- Baseline vERP recordings were obtained using a three-stimulus oddball paradigm.
- Main metrics included:
  - Mean amplitude (280–450 ms)
  - Peak latency
  - Area Under the Curve (AUC)
- Preliminary results show reduced P300 amplitude and prolonged latency in untreated adults with ADHD.

Ongoing Work

- **Phase 2 is currently underway**, aiming to compare pre- and post-treatment ERP responses to evaluate the effect of methylphenidate and assess waveform development over time.

Clinical Implication

vERP analysis may support personalized treatment strategies in ADHD by identifying likely responders to MPH.

Adherence to Standards

All preprocessing follows EEG-BIDS structure and MNE-Python pipeline. Full compliance with open science standards (FAIR principles) is planned for publication.

> See full supplementary material for methodology, technical details, and waveform examples.

*This document is part of the Supplementary Material for the ADHD2025 Poster.**This document is part of the Supplementary Material for the poster titled ****"Clinical utility of the P300 wave as a biomarker for methylphenidate response in adult patients with ADHD: First phase report"**, 10th World Congress on ADHD – Prague, May 2025.*