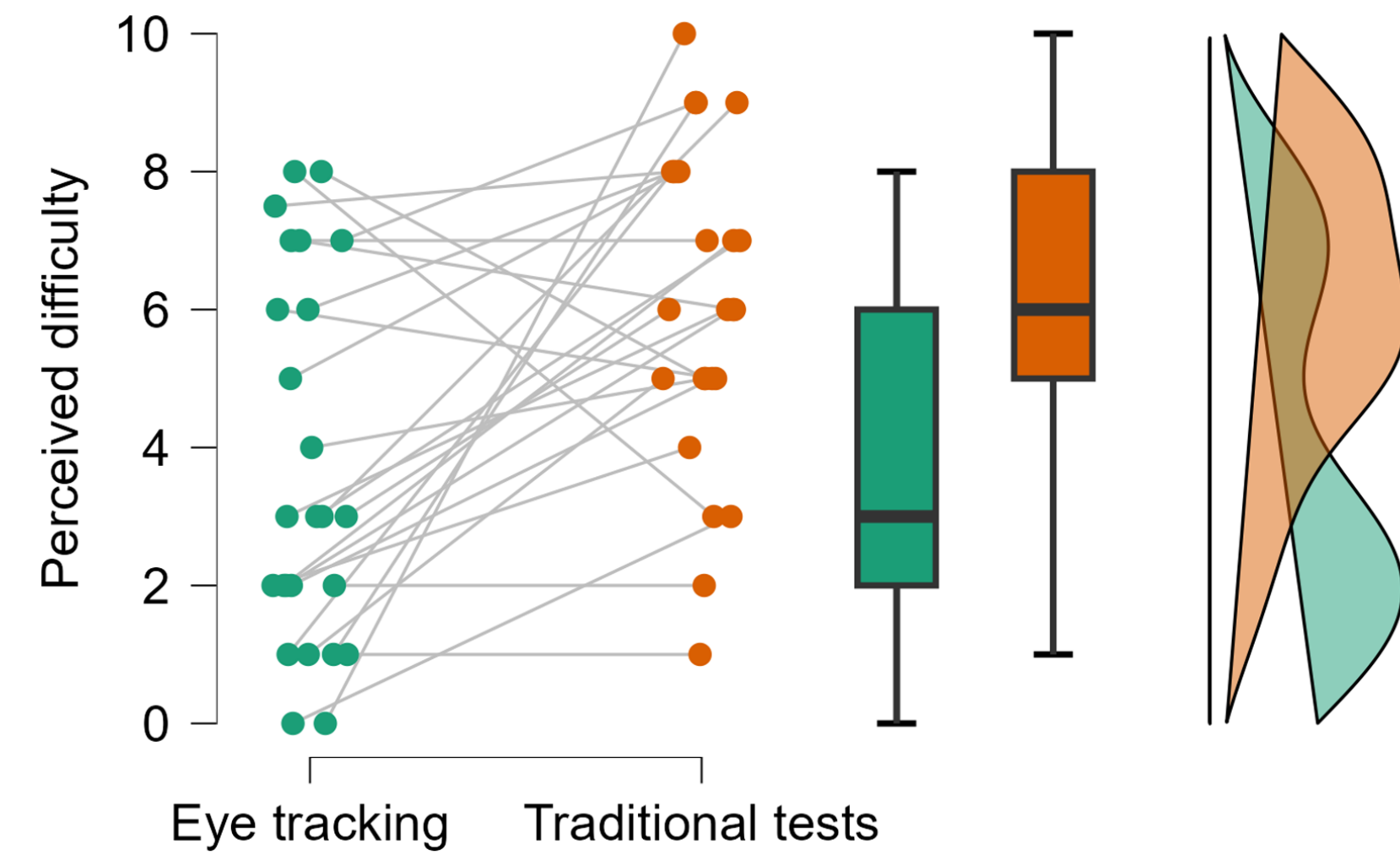
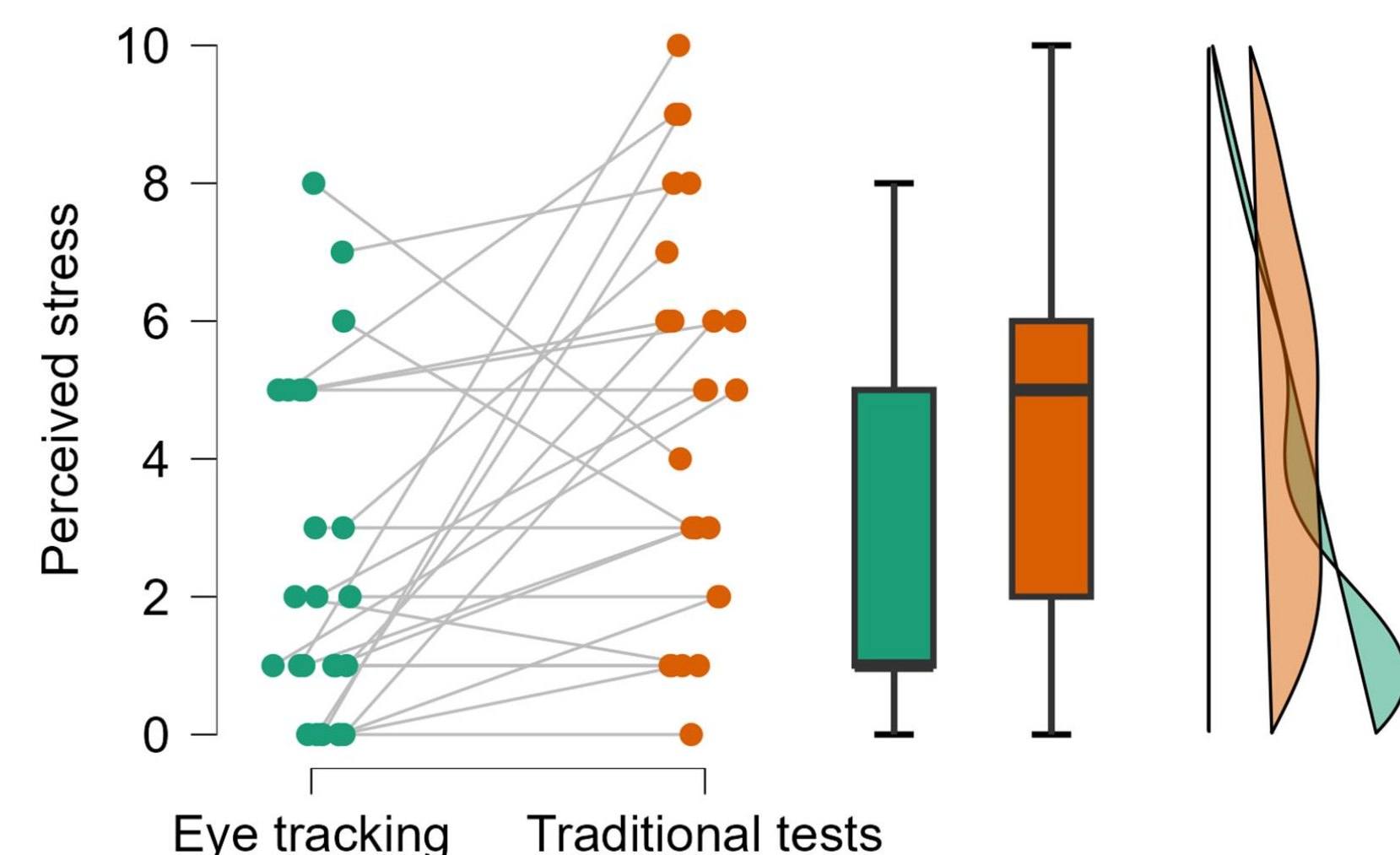


Feasibility and Acceptability of a Cognitively Informative Eye-tracking Paradigm: Preliminary Evidence from a Swedish Memory Clinic

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Preliminary data suggest that a cognitively informative eye-tracking paradigm is a feasible, well-tolerated, and low-burden method for cognitive assessment in clinical settings. It was quick and easy to administer, enabled effective data collection, and was associated with lower stress and perceived task difficulty than traditional cognitive testing.

INTRODUCTION	METHODS	RESULTS	CONCLUSIONS	
Alzheimer’s disease (AD) is associated with pronounced alterations in eye movement behavior and visual exploration that may precede overt cognitive decline (e.g., in memory). However, the diagnostic potential of these changes, as well as the feasibility and acceptability of cognitive testing using eye-tracking paradigms remains underexplored. Traditional paper-and-pencil neuropsychological assessments can be perceived as burdensome and may be insensitive to subtle cognitive changes in early disease stages. This study evaluates the feasibility and acceptability of eye-tracking-based assessments as a novel, low-burden approach for early diagnostics of AD. The study was approved by the regional ethics review board, and all participants provided informed consent.  https://www.tobii.com/	Eye movements and pupil responses were recorded using a Tobii Pro Spectrum eye tracker (1200 Hz) in 25 patients (14 women, 11 men), mean age 58.9 ± 4.3 years, from a specialized Swedish memory clinic. Planned total sample for this study is 80 participants. The ~25-minute battery assessed verbal and visual learning and memory, visual search, reaction time, face recognition, and executive functions. After the testing, participants completed a brief questionnaire assessing perceived difficulty, stress, and preferences for the assessment method. Eye-tracking testing was voluntary and conducted alongside routine clinical evaluation, which includes traditional neuropsychological assessment (~90 minutes). Paired samples t-test was conducted to assess perceived differences between the two methods.	 Figure 1. Perceived difficulty on a 0-10 Likert scale.  Figure 2. Perceived stress on a 0-10 Likert scale.	Participants rated the eye-tracking assessment as significantly less difficult than traditional neuropsychological testing (mean difference = -2.42, 95% CI [-3.80, -1.04], t(24) = -3.61, p = .001). The effect size was moderate to large (Cohen's d = -0.72), indicating that eye tracking was perceived as less demanding. The eye-tracking assessment was perceived as less stressful than traditional testing (mean difference = -2.16, 95% CI [-3.54, -0.78], t(24) = -3.22, p = .004). The effect size was moderate to large (Cohen's d = -0.64), indicating that eye tracking was perceived as less emotionally burdensome. 17 participants (68 %) would choose eye tracking, 5 (20 %) traditional testing, while 3 (12 %) would prefer both.	Preliminary data showed that eye tracking proved highly feasible and was well-tolerated. It was easy to administer, brief, and allowed effective cognitive data collection. Participants experienced less subjective stress and indicated lower perceived task difficulty compared with traditional cognitive testing, supporting the acceptability and feasibility as a low-burden alternative for cognitive assessment in clinical settings. CONTACT Karolinska Institutet Zuzana Wallin Ištvánfyová, PhD student Department of Neurobiology, Care Science and Society Division Clinical Geriatrics  zuzana.wallin.istvanfyova@ki.se +46 703 158 682 To see my profile, please visit:  