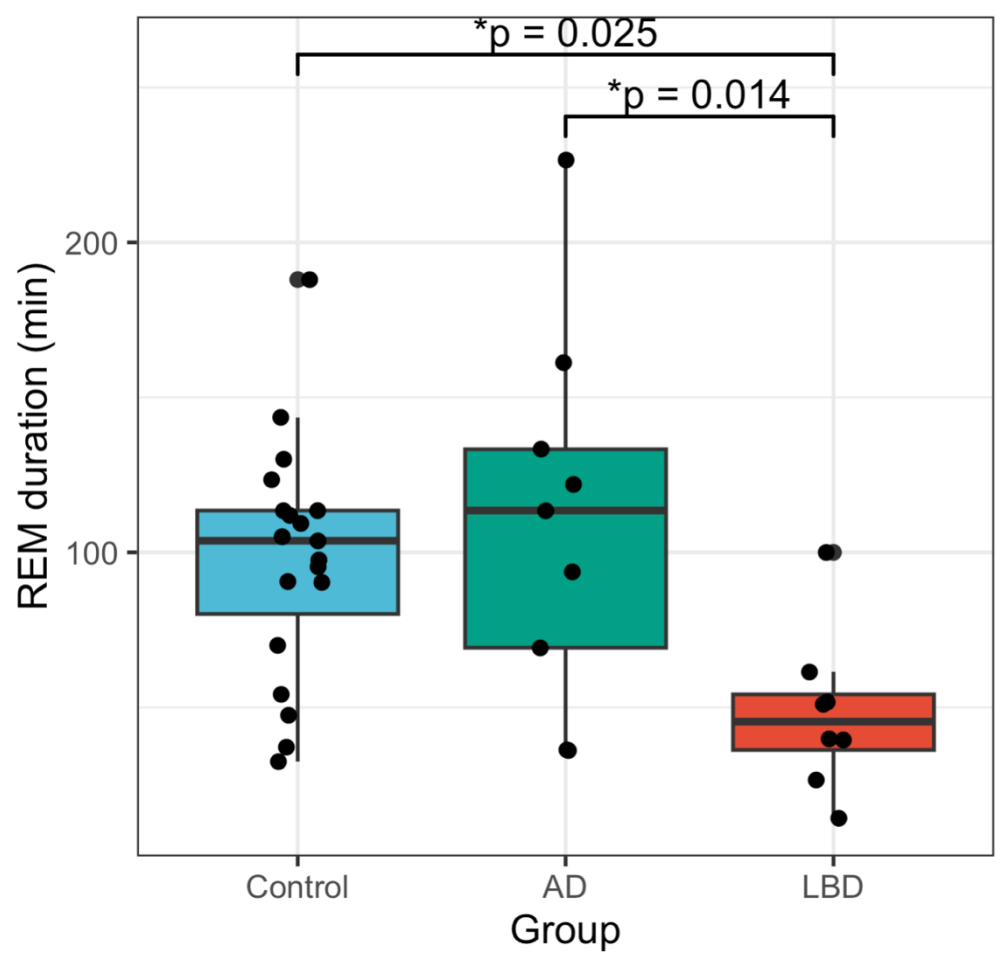
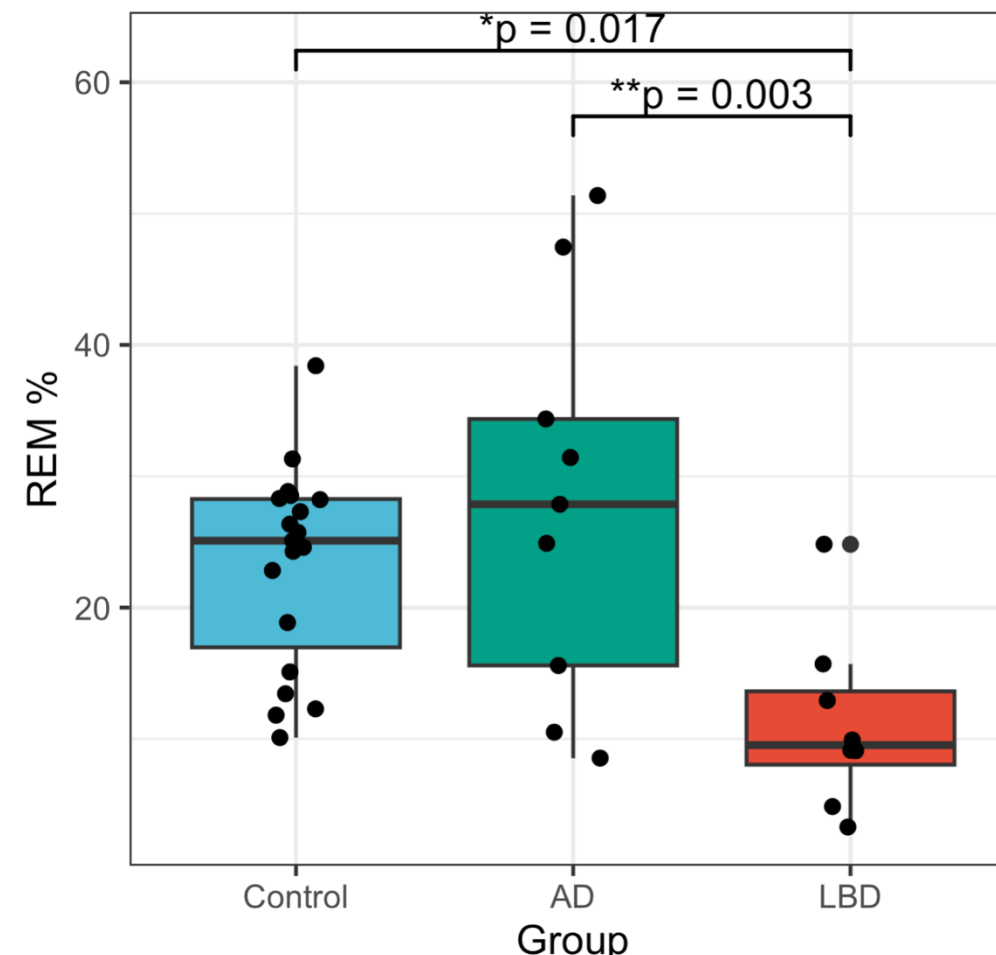
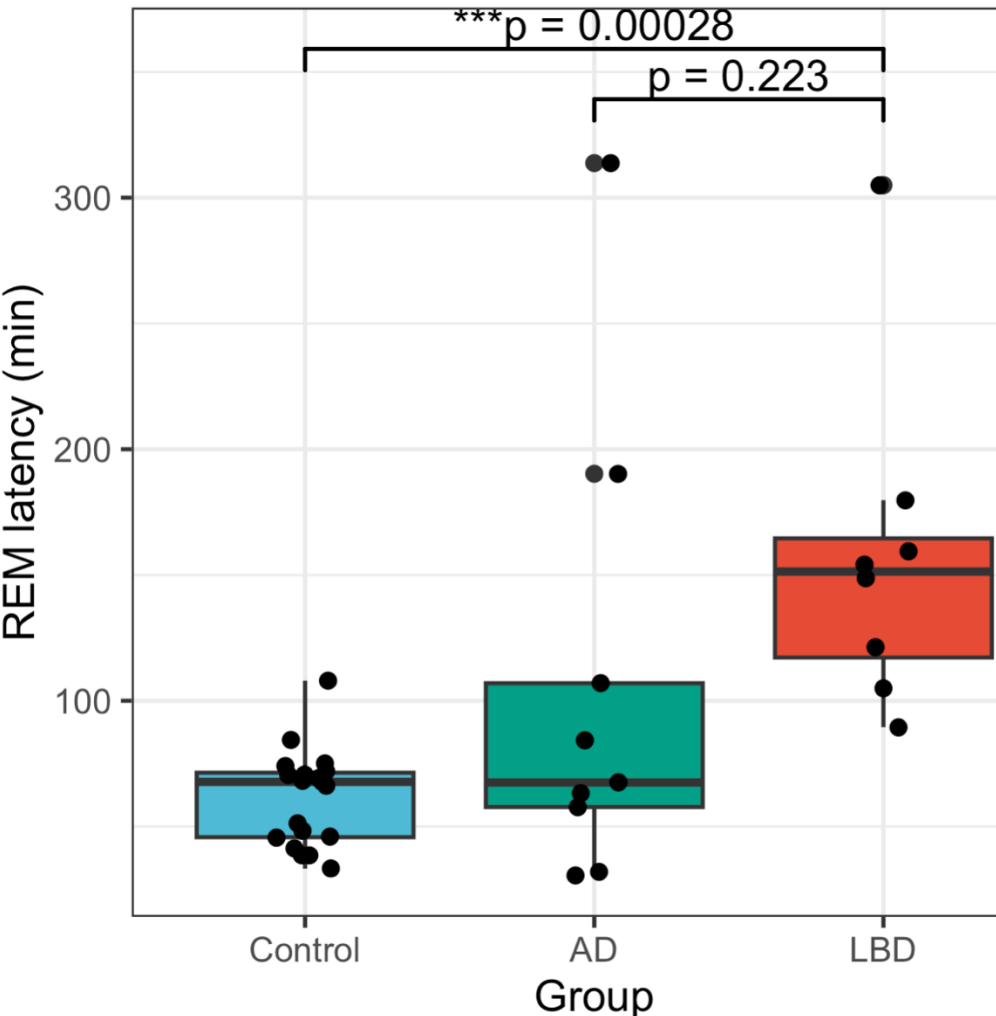
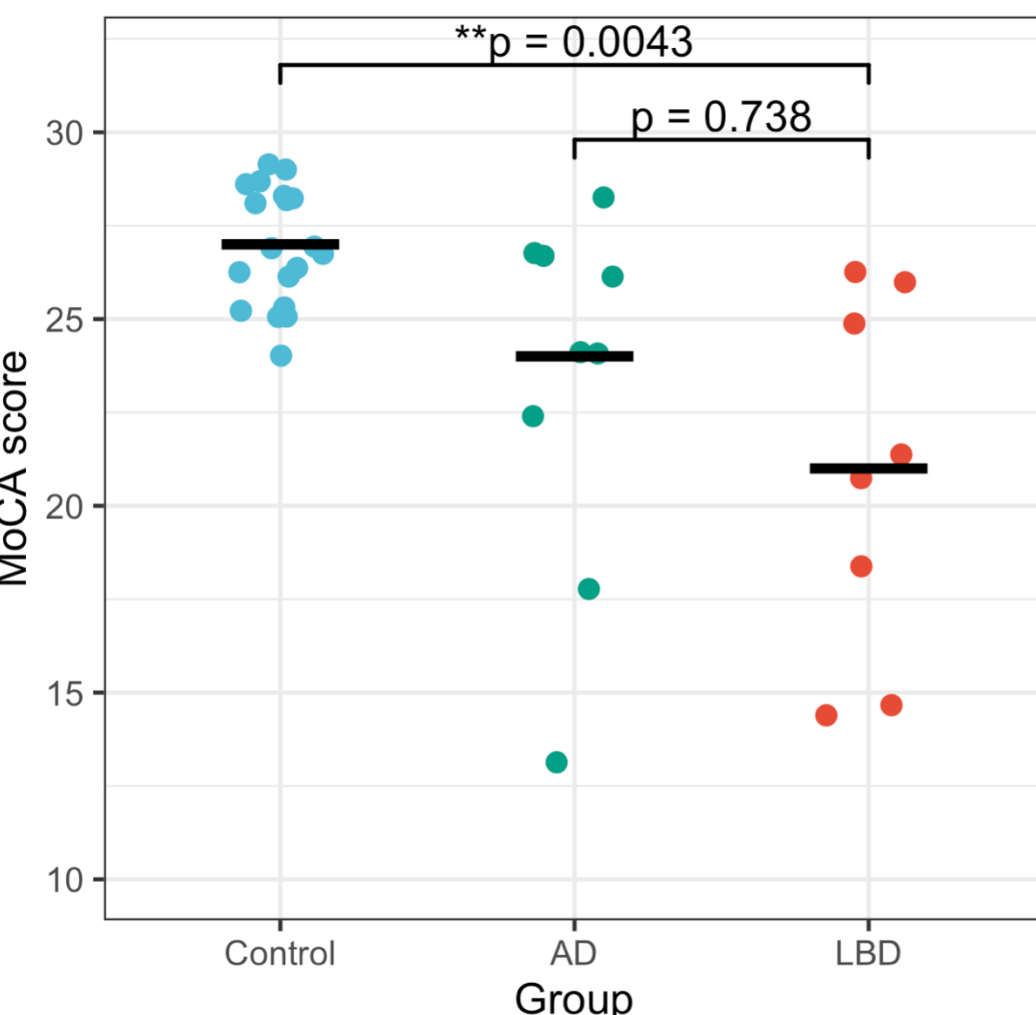
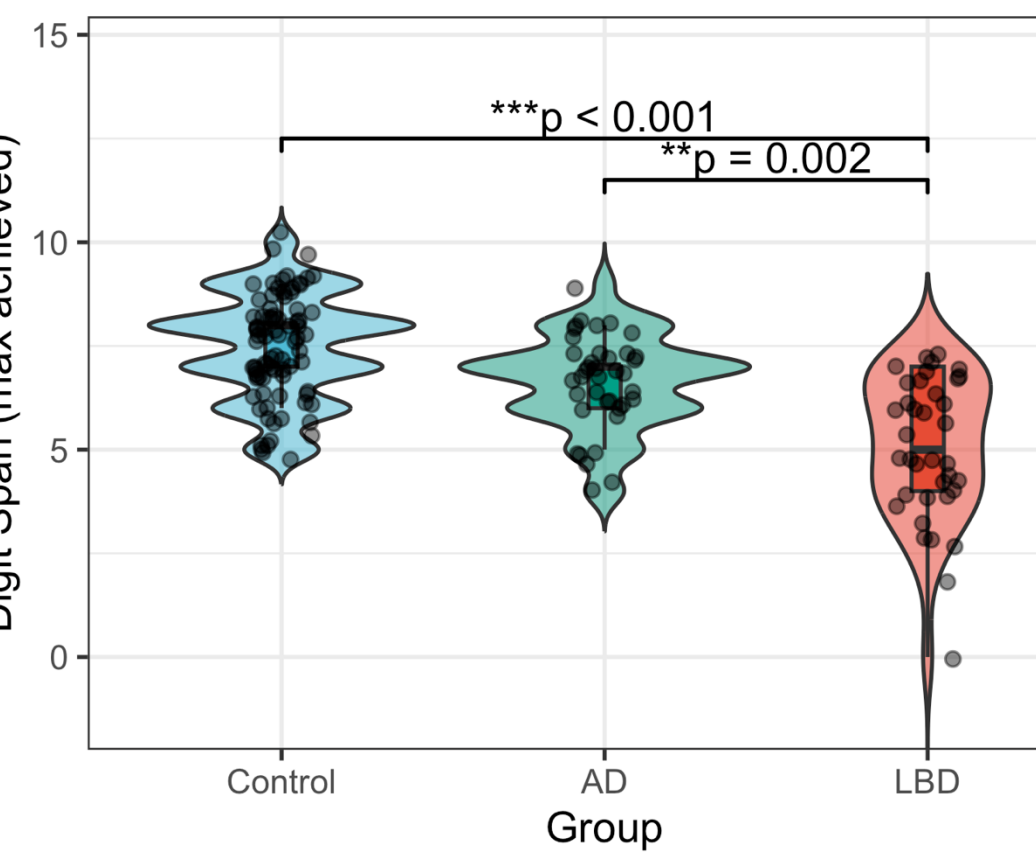
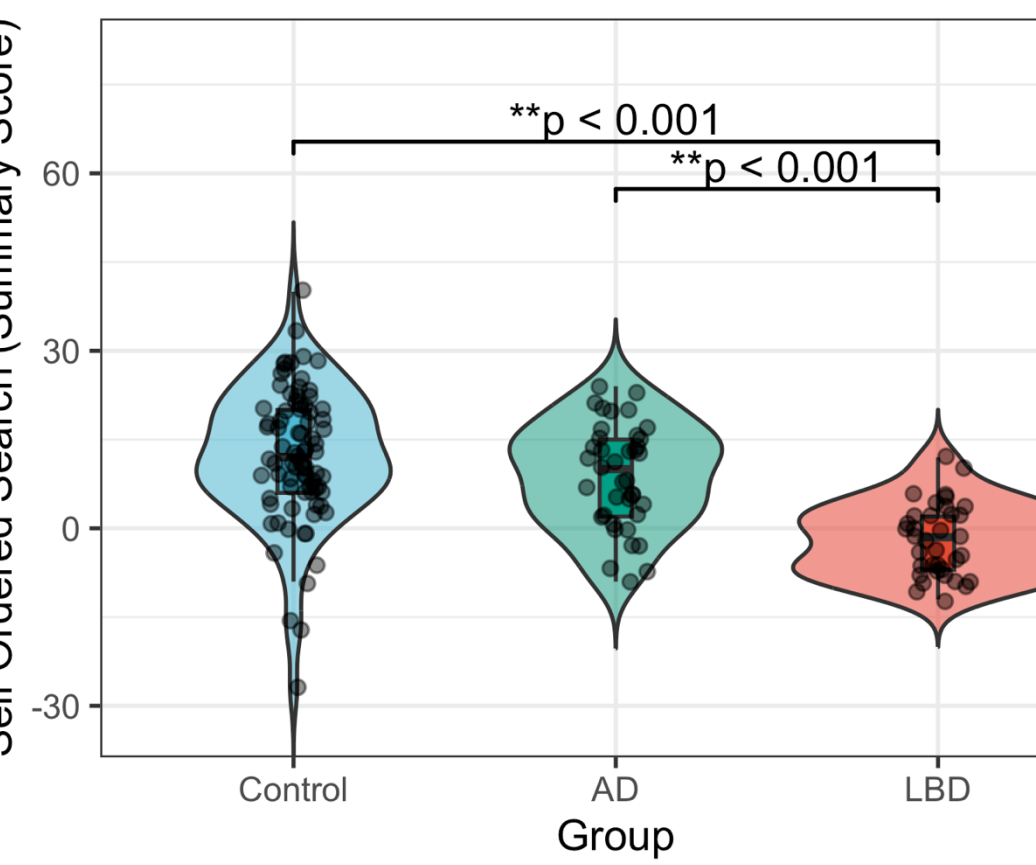
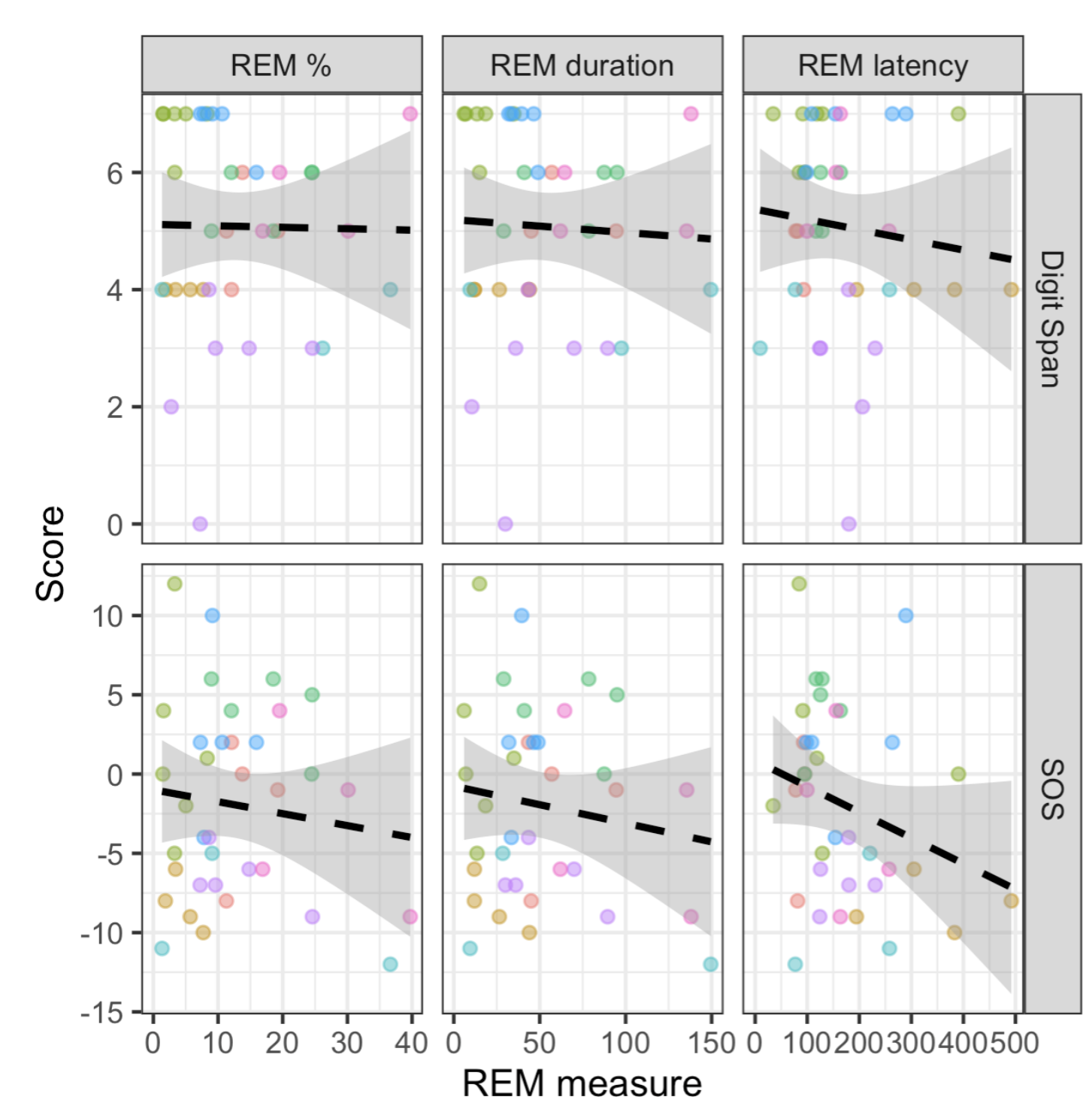


INTRODUCTION	METHODS (cont.)	RESULTS (cont.)		
Attentional fluctuations are a hallmark of Lewy Body Dementia (LBD), but their neurobiological basis is unclear. Abnormalities of REM sleep are well described in LBD. Here, we ask whether daily variability in cognitive function is explained by REM sleep quality the night before in LBD. We investigated whether i) REM sleep duration and latency were reduced in LBD ii) REM duration and latency predicted poorer next-day attention and executive function in LBD, compared with Alzheimer’s disease (AD) and age-matched controls.	Cognitron daily remote cognitive testing included digit span (DS; working memory/executive), and self-ordered search (SOS; executive/working memory). MoCA was tested once pre-EEG. Linear mixed models (LLM) were used for DS and SOS, with repeated measures nested within participants, adjusting for age, sex, anxiety and depression. Primary models tested REM duration, percentage, and latency. Sense-check models examined non-REM metrics.	Figure 2A; REM duration - ANOVA/Tukey  Figure 2B; REM percentage - ANOVA/Tukey  Figure 2C; REM Latency - Kruskal/PW Wilcox 	Figure 3A; MoCA - Kruskal/PW Wilcox  Figure 3B; Digit Span - Kruskal/Dunn  Figure 3C; Self-Ordered Search-ANOVA/Tukey 	Figure 4; Scatter of REM duration/%/latency vs. next-day DS and SOS in LBD 
METHODS	RESULTS			CONCLUSIONS
Data are from the RESTED cohort (Remote Evaluation of Sleep To enhance understanding of Early Dementia) – early LBD (n=8), AD (n=9), and older adults (n=19). Participants had at-home sleep monitoring for seven consecutive nights using a wireless multichannel EEG headband, Dreem 2 (Fig. 1). The first night of data was discarded. 	Groups were comparable in age and sex. REM sleep macro-architecture differed by diagnosis (Fig. 2A-C). NREM metrics did not (SE, TST, WASO, awakenings, SOL, N1/2/3 duration and %). MoCA was worse in LBD than controls. MoCA, DS and SOS were worse in LBD than healthy older participants (Fig. 3A-C). However, across LMM, REM parameters did not predict within-person next-day cognitive performance in any group (Fig. 4). Non-REM metrics showed no LMM associations.			Key takeaway: REM sleep differs in LBD, but does not predict next-day cognition here In this at-home EEG study, LBD exhibited REM sleep alterations compared to AD or controls, and worse cognition, yet REM parameters did not predict day-to-day working memory or executive performance. Short-term cognitive fluctuations in LBD may be driven by mechanisms beyond REM macro-architecture. Future work should explore micro-architectural sleep measures, circadian measures, and within-day cognitive fluctuations related to REM in larger cohorts.