

## Saturday

### Using the Sea Hero Quest app to measure spatial navigation and memory impairments in 'at-risk' genetic frontotemporal dementia participants from the UK GENFI cohort

Sophie Goldsmith, Lucy Russell, Jonathan Rohrer, Rhian Convery, Hugo Spiers, Antoine Coutrot

**State of the art:** Spatial navigation and memory deficits are not traditionally associated with frontotemporal dementia (FTD) and have often been used to differentiate between Alzheimer's Disease and FTD in clinical practice. However, more recent evidence suggests that those with FTD do demonstrate difficulties in both domains and in particular those diagnosed with, or at-risk of, genetic forms of FTD.

**Methods:** In this study, we used the Sea Hero Quest (SHQ) game, a mobile app designed to measure spatial navigation and memory. So far, 15 participants from the GENFI cohort have taken part of whom 6 are known mutation carriers. Participants played between 1 and 4 levels of the game and the app measured metrics of distance travelled and total task completion time throughout the game play. This data was then compared to a large control data set previously acquired in the general population.

**Results:** Preliminary quantitative analysis using trajectory length indicated that performance across the game levels was variable. However, in the first level tested, 50% (3 out of 6) of the mutation carriers performed below the 20th percentile with one participant performing below the 2nd percentile when compared to age- and sex-matched controls.

**Conclusion:** This pilot data suggests that spatial navigation and memory are measurable in the UK GENFI cohort using the Sea Hero Quest app. Further work will allow us to shed light on how helpful the task is to detect very early spatial memory and navigation deficits in this group.

### Conflicts of interest

N/A