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Background and Aim

- Over 150,000 people in the UK experience stroke every year
- Approximately 1.3 million people in the UK living with the consequences of stroke.
- Around 60% of stroke survivors have a visual impairment.
- Compensatory techniques appear to be a promising avenue for future technology-driven interventions.
- There is potential to improve the interventions currently available for visual loss after stroke through the use of existing technology
- However there is a need to evidence the effectiveness of such interventions in stroke.

Aim

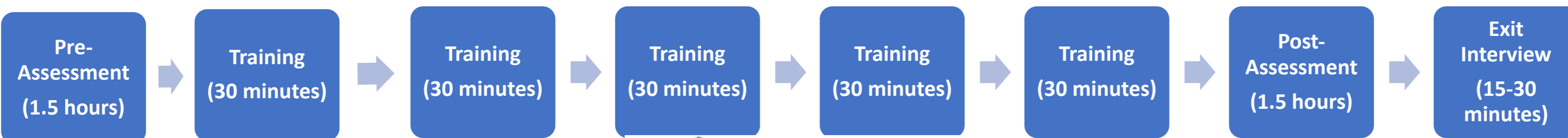
- Explore the effectiveness of the Senaptec Sensory Station as a compensatory rehabilitation tool for visual loss following stroke.

Senaptec Sensory Station

- The Senaptec Sensory Station and associated apps can be used to measure, train and evaluate visual, cognitive and visuomotor skills impacted by stroke.
- It is a state-of-the-art sensory evaluation and training station that assesses ten visual and sensorimotor skills.



Method



1) Visual Clarity # 	2) Contrast Sensitivity # 	3) Depth Perception #
4) Near-Far Quickness 	5) Target Capture # 	6) Perception Span
7) Eye-Hand Coordination 	8) Go/No Go 	9) Hand Response Time

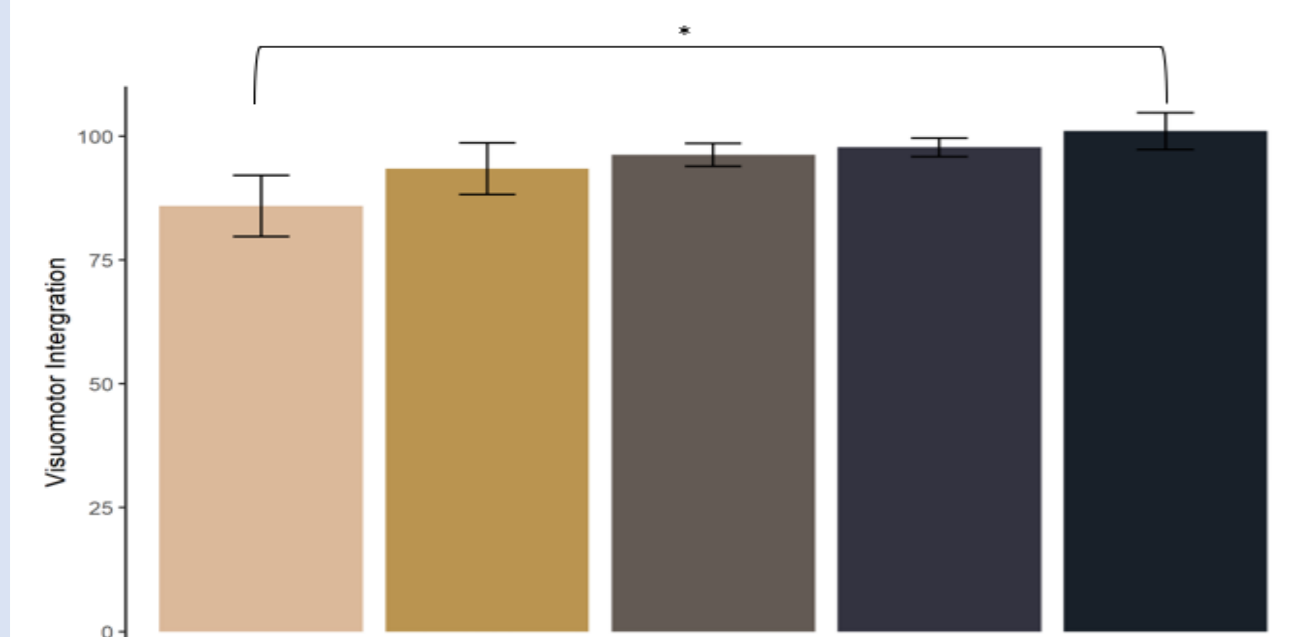
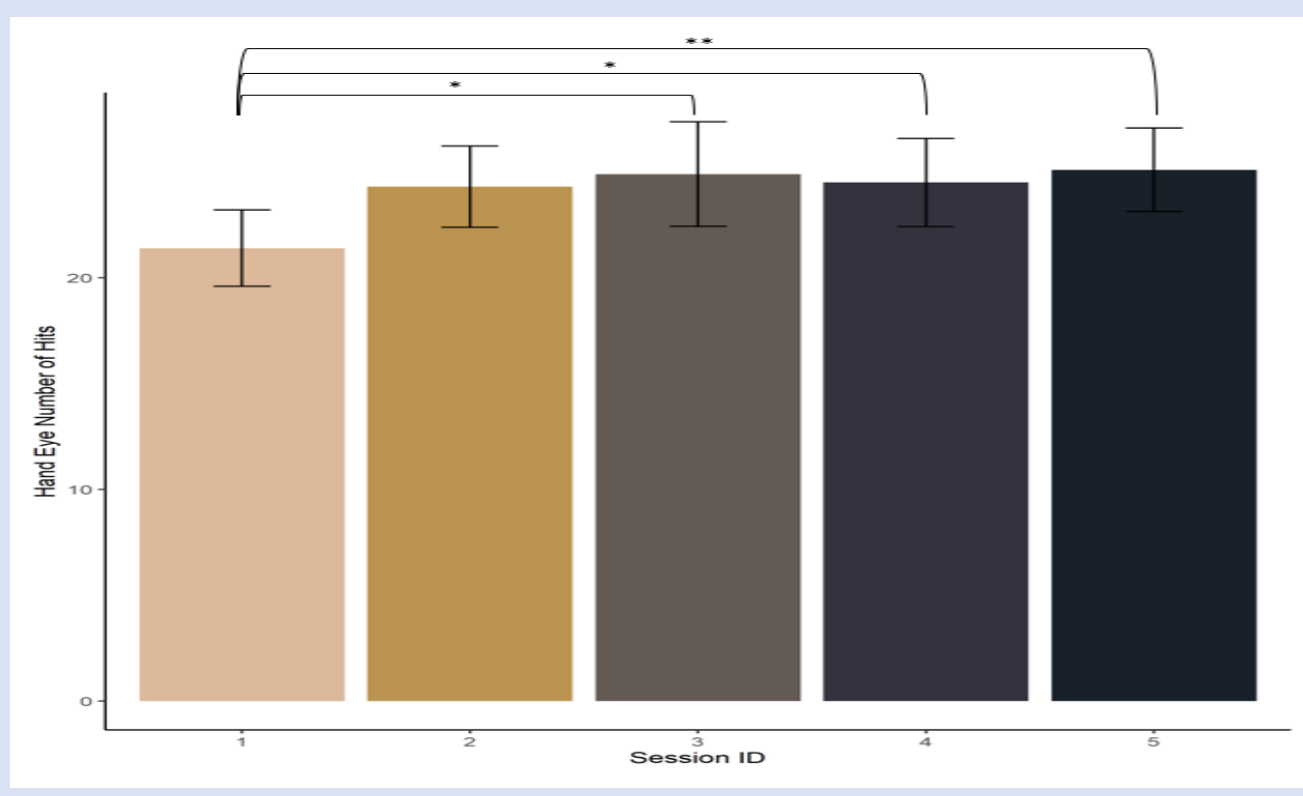
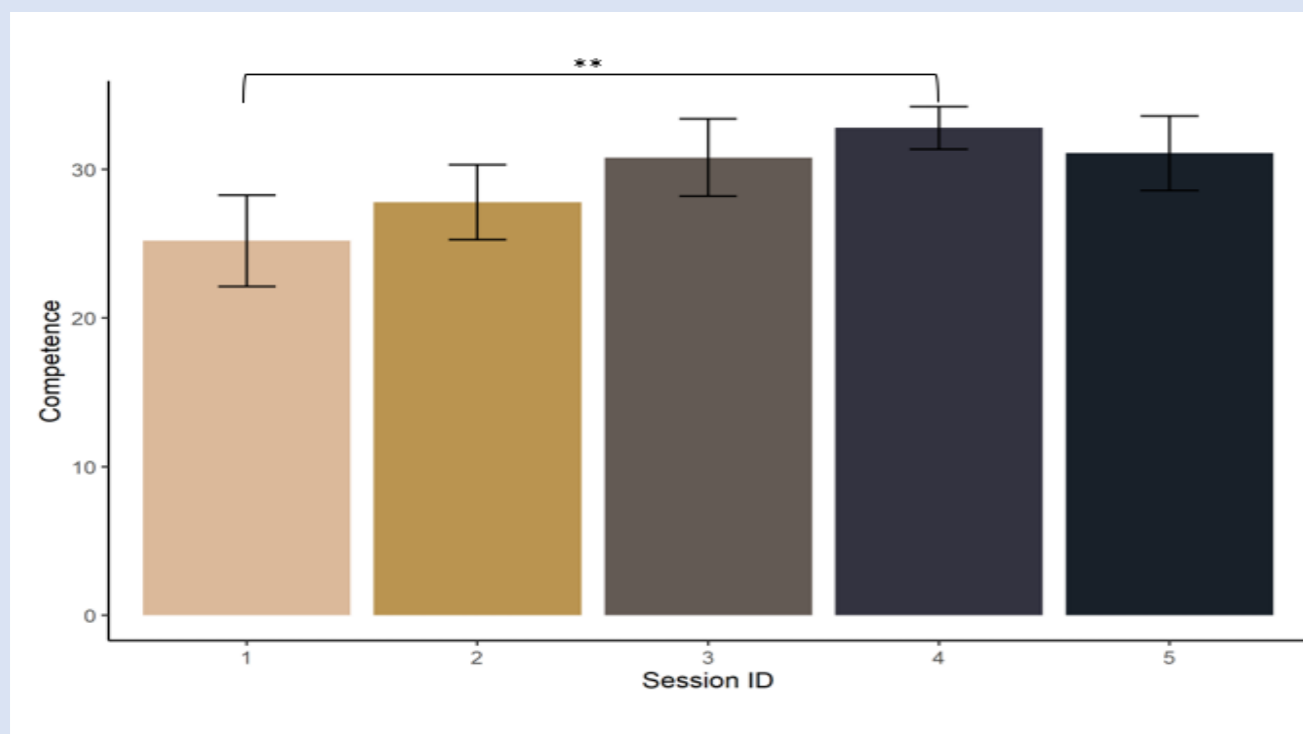
Participants

- 10 participants (8 male, 2 female)
- Age Range: 43 – 79
- Time since stroke: 1 year – 18 years
- Visual Impairment

Protocol

- 7 sessions (2 assessments, 5 training)
- At least one day between visits
- Whole intervention completed within 2-3 weeks

Results



Discussion

- The benefits of training appear to be task-specific, hand-eye coordination and visuomotor integration were significant.
- *Floor/ceiling effects?*
- No significant differences in the Senaptec Assessment measures was found.
- *This could be due to the short duration of training (five sessions).*
- *Future work could look to investigate the effectiveness of the Senaptec training over a longer period of time.*
- Subjective benefits were reported by participants in terms of their visual behaviour.
- *"I have felt like I've started taking more notice of things on my affected side. Like for example I haven't - when I've been painting pictures I haven't always - I've remembered more to look at both sides of the paper" (F, 43)*
- *"But now I've started scanning again really, you know" (M, 62)*

Summary

- Overall, the Senaptec Sensory Station is an efficient and cost-effective way of delivering visual training to stroke survivors, as supported by reported subjective benefits in visual behaviour, and enjoyment of the training sessions and tasks.
- Future work could look to improve accessibility and usability via the use of tablets which allow for more adaptation of difficulty, as well as the ability to bring training into patients homes.

References

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