One session of prism adaptation training does not increase immediate engagement in occupational therapy in people with spatial inattention/neglect early after stroke

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Spatial Inattention and Engagement

- Spatial inattention is a disorder of **attention** and typically manifests as deficient or absent awareness of contralesional space
- Deficient or absent attention or awareness may result in patients not benefitting from their recommended **occupational therapy**[1]
- Stroke patients who have inattention also spend **longer in hospital** and are more functionally dependent when they go home[2]

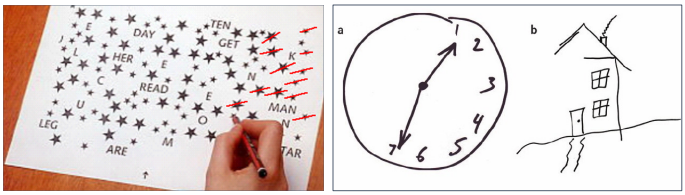

Figure 1: Representation of how spatial inattention/neglect manifests on paper and pencil tasks: star cancellation (L) and figure drawing (R)

What is Prism Adaptation Training?

- PAT is a brief intervention designed to **train** patients with spatial inattention to **reorient** towards the unattended side of space
- PAT uses glasses fitted with wedge **prisms** which patients wear while **pointing** towards targets with only the distal portion of the pointing manoeuvre visible (the 'adaptation period')
- After the adaptation period and after the prism glasses are removed, patients exhibit a **pointing bias** in the direction opposite to the visual shift
- The effects may last up to several hours following the adaptation period
- There is some evidence that the effects of PAT may **extend beyond** trained behaviours, e.g. attention in other modalities and other **higher order** cognitive processes, which may include **engagement** in therapy[3]

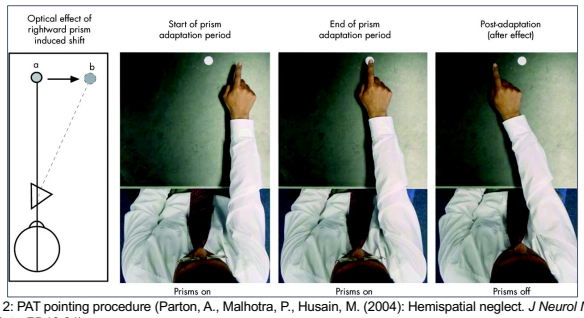

Figure 2: PAT pointing procedure (Parton, A., Malhotra, P., Husain, M. (2004): Hemispatial neglect. *J Neurol Neurosurg Psychiatry 75:13-21)*

What is Engagement in Occupational Therapy?

- Engagement in OT is a **key driver of success** in therapy[4]
- Although therapists routinely assess engagement in everyday practice, there is no **universal definition**
- Several qualitative studies have identified **key elements** that are important for engagement in therapy, including **patient-therapist** interactions and **patient-therapy** interactions[5,6,7]
- There are no quantitative means of measuring engagement in therapy in this population; this study is the first to quantify patient engagement in OT for stroke
- Using the previously published qualitative findings, we developed an 'engagement composite' which included several **observable** behaviours
- Observable behaviours included posture, eye gaze, limb movements, speech, and receptiveness to task instructions and prompts

Aims and Methods

- **AIM: to investigate whether a single session of PAT for spatial inattention can immediately enhance patient engagement in recommended OT for stroke**
- During the first therapy session of the SPATIAL feasibility trial, consenting patients were **video** recorded once **before** and once **after** PAT (or a control activity), before their usual OT session began
- During the video recording, patients and therapists took part in a "visual scanning activity" designed to **simulate** a typical OT activity
- The videos were later viewed by an **expert** video rater who was **blind** to group allocation and whether each video was pre- or post-PAT (or control activity) – 'unpaired engagement scores', see Figure 3 (top)
- The videos were **re-viewed post-hoc** (and **before** analysis of main results) by the **same** expert video rater, this time **unblind** to pre- or post-PAT (or control activity) - 'paired engagement scores', see Figure 3 (bottom)
- In both cases, the expert video rater used a 100mm **visual analogue scale** to 'score' engagement, from 0 ('**no engagement**') to 100 ('**full engagement**')
- The treating **OTs** also provided impressions of **engagement change** from pre- to post-PAT (or control) on a 3-point **Likert** scare ('**poorer engagement**', '**no change**', and '**improved engagement**'), see Figure 4

Results

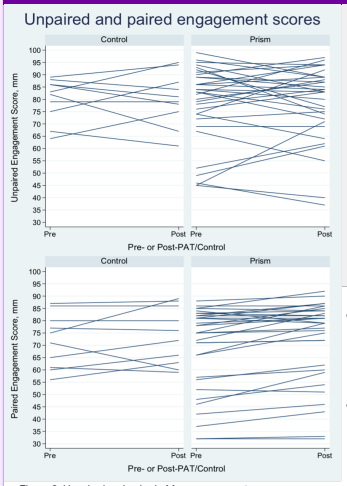

Figure 3: Unpaired and paired **video** engagement scores

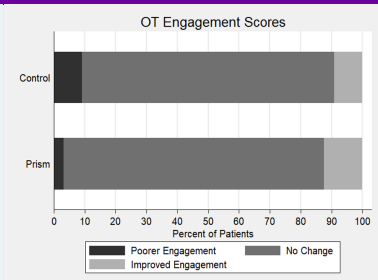

Figure 4: **Likert** ratings from **treating OTs**

- 49 of SPATIAL feasibility's 53 patients were recruited (37 PAT, 12 control), **43** of whom consented to video recording
- Expert video rater scores were analysed using linear regression; treating OT engagement change scores were analysed using binary logistic regression
- Regression analysis revealed **no evidence** of improvement in engagement from the unpaired scoring method (mean difference (95% CI) = -0.5 (-7.4 to 6.4) mm; p=0.89) or the paired scoring method (mean difference (95% CI) = 1.2 (-2.5 to 4.9) mm; p=.52) – see **Figure 3**
- Treating OT scores (**Figure 4**) also found **no evidence** of engagement change: OR (95% CI) = 1.3 (0.13 to 13); p=0.81, in agreement with the expert video rater

Concluding Remarks

- A single session of **PAT did not immediately enhance engagement** in OT in this population with spatial inattention early after stroke
- This study does not address alternative definitions of engagement as a longitudinal and socially-defined rapport-building process

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