

## **ABSTRACT**

Spatial neglect (SN) is a common cognitive disorder after brain injury. Spatial neglect impedes functional recovery, leading to reduced rehabilitation gains and slowed recovery. Prism adaptation treatment (PAT) is one of the promising interventions for SN albeit inconsistent results from previous studies.

The main goal of this thesis was to implement PAT in into a highly intensive rehabilitation program and evaluate its effectiveness on reduction of SN symptoms and adverse effects of SN on rehabilitation outcomes. In our first study we carried out a comparison intervention (PAT vs. Sham) and aimed to evaluate the efficacy of PAT on visuospatial symptoms of SN in an inpatient rehabilitation setting that offered a highly intensive comprehensive brain injury rehabilitation program. The objective of the second study was to investigate whether integrating PAT into this rehabilitation program eliminates the negative impact of spatial neglect on functional and motor recovery.

Although SN symptoms were reduced in both groups, we found no difference between the two groups in the degree of improvement. In addition, the average SN recovery rates were higher in the PAT group compared to Sham group, but this discrepancy did not reach statistical significance. Thus, the first study suggests that PAT may contribute little to SN care in the context of a highly intensive inpatient rehabilitation program. However, in our second study, patients with SN who received PAT had similar rehabilitation gains compared to patients without SN which suggests that integrating PAT in an intensive rehabilitation program predicts improved responses to regular therapies in patients with SN. This finding supports a rationale for integrating PAT in an intensive rehabilitation program.

Keywords: spatial neglect; prism adaptation treatment; brain injury; rehabilitation; motor recovery