

Effect of oculomotor rehabilitation on vergence responsivity in mild traumatic brain injury.

[Thiagarajan P¹](#), [Ciuffreda KJ](#).

[J Rehabil Res Dev](#). 2013;50(9):1223-40. doi: 10.1682/JRRD.2012.12.0235.

Abstract

A range of dynamic and static vergence responses were evaluated in 12 individuals with mild traumatic brain injury (age: 29 +/- 3 yr) having near vision symptoms. All measures were performed in a crossover design before and after oculomotor training (OMT) and placebo (P) training. Following OMT, peak velocity for both convergence and divergence increased significantly. Increased peak velocity was significantly correlated with increased clinically based vergence prism flipper rate. Steady-state response variability for convergence reduced significantly following OMT. The maximum amplitude of convergence, relative fusional amplitudes, and near stereoacuity improved significantly. In addition, symptoms reduced significantly, and visual attention improved markedly. None of the measures were found to change significantly following P training. The significant improvement in most aspects of vergence eye movements following OMT demonstrates considerable residual brain plasticity via oculomotor learning. The improved vergence affected positively on nearwork-related symptoms and visual attention.