

Vision rehabilitation interventions following mild traumatic brain injury a scoping review.

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[Simpson-Jones ME](#)¹, [Hunt AW](#)^{1,2}.

Author information

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a Department of Occupational Science & Occupational Therapy , University of Toronto , Toronto , Canada.

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b Clinical Study Investigator Bloorview Research Institute , Toronto , Canada.

Abstract

Purpose: To broadly examine the literature to identify vision interventions following mild traumatic brain injury. Objectives are to identify: (1) evidence-informed interventions for individuals with visual dysfunction after mild traumatic brain injury; (2) professions providing these interventions; (3) gaps in the literature and areas for further research. **Methods:** A scoping review was conducted of four electronic databases of peer-reviewed literature from the databases earliest records to June 2017. Articles were included if the study population was mild traumatic brain injury/concussion and a vision rehabilitation intervention was tested. Two independent reviewers screened articles for inclusion, extracted data, and identified themes. **Results:** The initial search identified 3111 records. Following exclusions, 22 articles were included in the final review. Nine studies evaluated optical devices, such as corrective spectacles, contact lenses, prisms, or binasal occlusion. Two studies assessed vision therapy. Ten studies examined vision therapy using optical devices. One study investigated hyperbaric oxygen therapy. Optometrists performed these interventions in most of the studies. Future research should address quality appraisal of this literature, interventions that include older adult and pediatric populations, and interdisciplinary interventions. **Conclusions:** There are promising interventions for vision deficits following mild traumatic brain injury. However, there are multiple gaps in the literature that should be addressed by future research. Implications for Rehabilitation Mild traumatic brain injury may result in visual deficits that can contribute to poor concentration, headaches, fatigue, problems reading, difficulties engaging in meaningful daily activities, and overall reduced quality of life. Promising interventions for vision rehabilitation following mild traumatic brain injury include the use of optical devices (e.g., prism glasses), vision or oculomotor therapy (e.g., targeted exercises to train eye movements), and a combination of optical devices and vision therapy. Rehabilitation Professionals (e.g., optometrists, occupational therapists, physiotherapists) have an important role in screening for vision impairments, recommending referrals appropriately to vision specialists, and/or assessing and treating functional vision deficits in individuals with mild traumatic brain injury.

KEYWORDS:

Mild traumatic brain injury; oculomotor control; optical devices; vision deficits; vision intervention; vision therapy