

Evidence-based Medicine Category

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Effectiveness of Vestibular Rehabilitation in People with Concussion: A Systematic Review

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Aims: Mild traumatic brain injury or concussion is the second most common acquired neurologic disorder and a major public health concern, with rising global incidence. Dizziness and imbalance are common symptoms, and are difficult to manage. Vestibular rehabilitation appears to be a promising treatment given its established effectiveness in alleviating these symptoms in vestibular disorders. However, little is known of its efficacy in concussion. This study aims to systematically review the evidence supporting the efficacy of vestibular rehabilitation in people post-concussion.

Methodology: Five electronic databases (Cochrane, PsycInfo, Scopus, Embase, CINAHL) were searched to source for full-text English-language quantitative studies published till 14 June 2016, which fulfilled predefined criteria. Reference lists of included studies were screened. Methodological quality was assessed using the McMaster critical review form by 2 independent reviewers. Data pertaining to subjects, intervention, outcomes and clinical effectiveness were extracted and outcomes were pooled using fixed or random effects analyses depending on study heterogeneity.

Result: Three out of 61 studies screened, comprising 149 participants, were included. The studies included one randomised controlled trial (RCT), retrospective cohort and case series. The quality score ranged from 12-15 (out of 16). The RCT demonstrated that a larger proportion of patients receiving combination of cervical and vestibular physiotherapy were more likely to be medically cleared to return to sport within 8 weeks than controls (73.3% vs 7.1%, $\chi^2=50.12$, $p<0.001$). All studies reported improvement in dizziness severity (mean difference=19.3, 95%CI, 14.36-24.24) and balance (SMD=18.95, 95%CI, 10.86-27.03) but not gait (SMD=1.54, 95%CI-2.18-5.26).

Conclusion: Vestibular rehabilitation appears to have positive outcomes on dizziness and balance but not gait in people post-concussion. However, results should be interpreted with caution due to the lack of well-designed large RCTs. This study highlighted the need for more research to determine the efficacy of vestibular rehabilitation in people post-concussion and factors which affect recovery.