



Non-Pharmacologic Treatment Efficacy in Preventing or Resolving Persistent Post-concussion Symptoms in Adults and Athletes: An Abbreviated Literature Review

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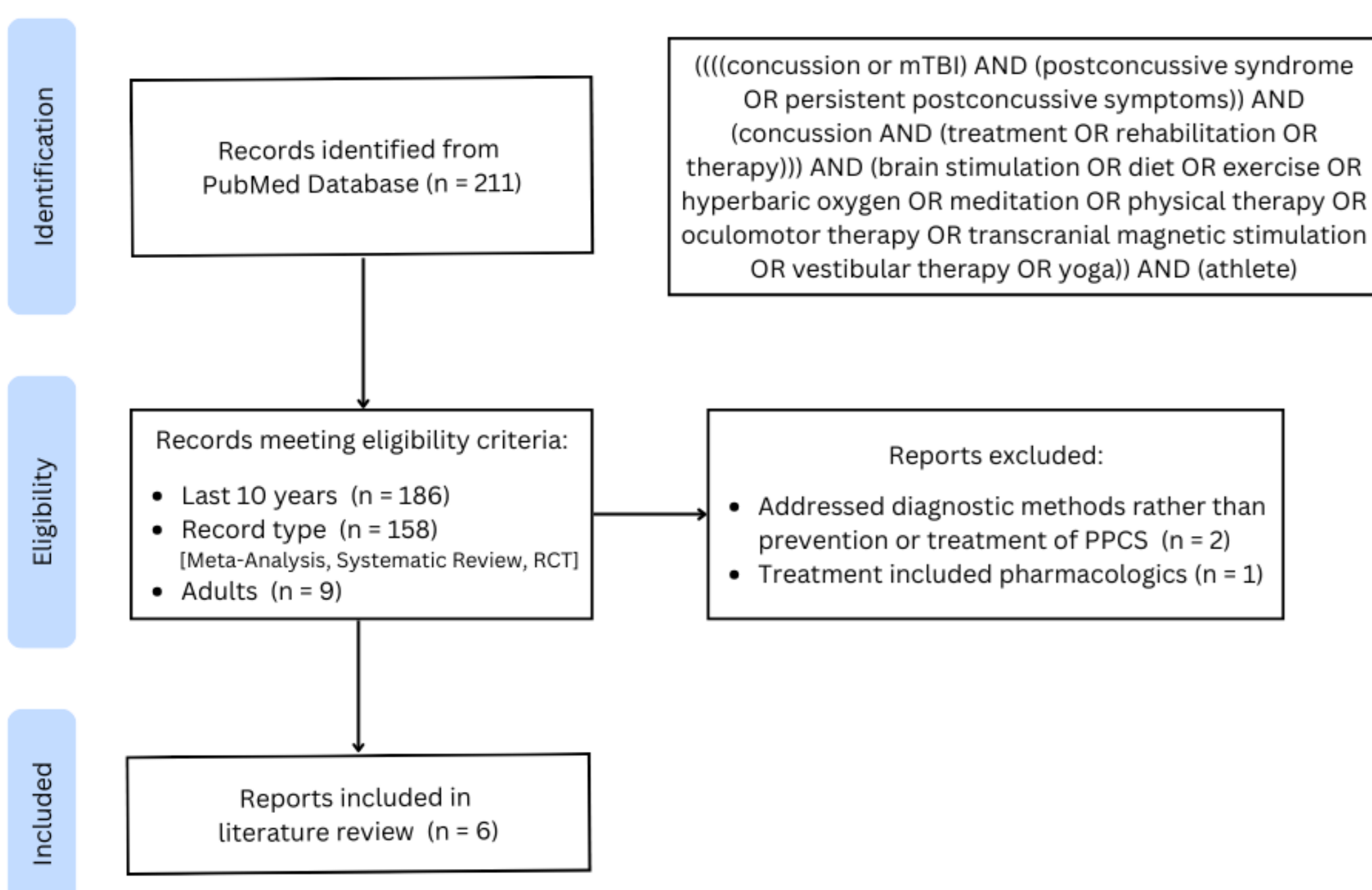
Background

- Concussions are impact-related head injuries that result in temporary changes in neurophysiologic brain function. As many as 3.8 million recreational or sports-related concussions occur annually in the US, causing disruptions in academics, employment, and sports participation¹.
- Most individuals recover from concussions spontaneously within weeks, but 10-20% of patients will continue to experience persistent post-concussion symptoms (PPCS) for months following injury². Students, employees, and athletes feel pressure to promptly return to their normal activities, increasing their risk of delayed recovery or repeat concussions³.

Goal

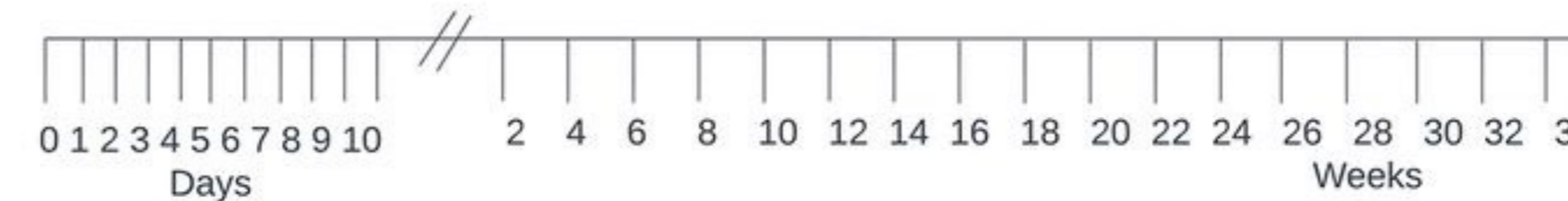
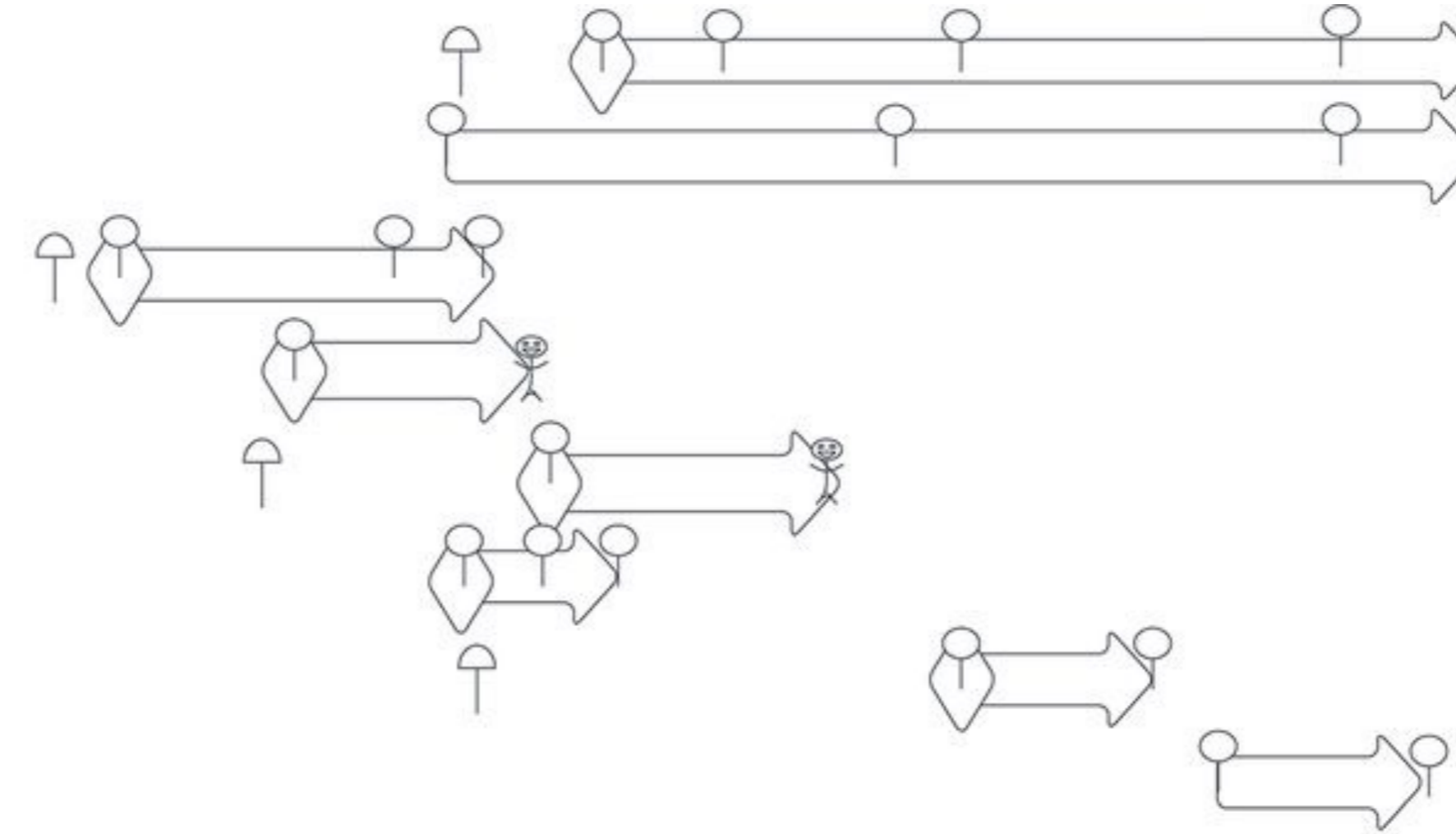
Identifying effective prevention and treatment options for PPCS to accelerate concussion recovery and symptom resolution can alleviate these pressures to return to normal activities. An abbreviated literature review was conducted on the efficacy of non-pharmacologic prevention and treatment of PPCS (defined here as symptoms lasting >4 weeks).

Methods



Figures

Collaborative Care	McCarty et al 2016	11-17 years
	McCarty et al 2021	11-18 years
Vestibular Rehabilitation	Kontos et al 2021	12-18 years
	Reneker et al 2017	10-23 years
Cervicovestibular Rehabilitation	Schneider et al 2014	12-30 years
	Gauvin-Lepage et al 2018	8-17 years
Active Rehab	Chan et al 2017	12-18 years
	Walters et al 2017	18-24 years



Schneider KJ, Critchley ML, Anderson V, et al. Targeted interventions and their effect on recovery in children, adolescents and adults who have sustained a sport-related concussion: a systematic review. *Br J Sports Med.* 2023;57(12):771-779. doi:10.1136/bjsports-2022-106685



Cho, E. [HouseInstitute]. (2015, March 3). *Home Vestibular Exercises* [Video]. YouTube. <https://www.youtube.com/watch?v=epJ1luFyF2o>

Conclusion

Most interventions produced small, positive effects on PPCS prevention, symptom resolution, and medical clearance timelines in studies with small sample sizes and incomplete blinding. Cervical spine and vestibular physiotherapy (CV) treatments produced the most statistically significant improvements in vestibulo-ocular reflexes and medical clearance timelines. There was good agreement across studies assessing CV interventions. Common challenges across studies include inconsistent post-injury patient enrollment timeframes, interventional treatment heterogeneity, assessment subjectivity, and infrequent use of true controls.

Next Steps

- Continued efforts in concussion prevention, objective pre- and post-injury screening, and more explicit recommendations for return to normal activities are needed across all patient populations.
- Further, more methodologically rigorous research is needed to demonstrate the efficacy of non-pharmacological prevention and treatment of PPCS to determine our capacity to accelerate healing and recovery timelines.

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