

Article Title

A scoping review: carpal tunnel syndrome in athletes who compete in wheelchair sport

Article citation

Marriott, C., Montgomery, K., Whelan, A. (2022) A scoping review: carpal tunnel syndrome in athletes who compete in wheelchair sport American Journal of Physical Medicine & Rehabilitation Articles Ahead of Print
DOI: 10.1097/PHM.0000000000002167

Adaptive Sports/Recreation Topic Categories

- Sports medicine, neuromuscular diseases, wheelchairs, carpal tunnel syndrome

Research Question

- Review of the existing research on carpal tunnel syndrome (CTS) in athletes who compete in wheelchair sport.

Methodology

- The review was conducted in line with the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist
- Any manuscript that provided original research documenting CTS in wheelchair users engaged in recreational or competitive wheelchair sports was included
- PubMed and Scopus databases were searched. Grey literature was explored using Google Scholar and ResearchGate.

Results

- 6046 initial abstracts were identified from the screened databases. Seven articles were included in the study. One additional study was identified from Google Scholar and ResearchGate
- The eight articles were published between 1994 and 2020. They covered 5 countries and 3 continents.
- Four articles were about wheelchair basketball.
- N = 10 – 33 participants.
- Average participants ages 27.8 – 40.3 years
- Most participants were men with spinal cord injury
- Diagnostic criteria: clinical symptoms in 8 studies, Nerve Conduction Studies in 5, Ultrasound in 2.
- Risk factors for CTS = length of time with disability, length of time using a wheelchair, overweight

Discussion/Conclusion

- There is limited research on wheelchair athletes and CTS
- There is no research on the impact of wheelchair sports participation and CTS
- There is no research on prevention of CTS in wheelchair athletes

- Inconsistent use of AANEM (American Association of Neuromuscular and Electrodiagnostic Medicine) NCS criteria for CTS diagnosis (https://www.aanem.org/docs/default-source/documents/recommended-policy-2023.pdf?sfvrsn=ac21900d_1) or current ultrasound guideline for CTS dx. ([https://pubmed.ncbi.nlm.nih.gov/24915739/#:~:text=CSA%20at%20the%20pisiform%20level,%3A%209.8%20mm\(2\)](https://pubmed.ncbi.nlm.nih.gov/24915739/#:~:text=CSA%20at%20the%20pisiform%20level,%3A%209.8%20mm(2))).
- There is need for research on CTS in wheelchair athletes with consistent diagnostic methods, impact on life outside sport, treatment and prevention

Article Strengths

- Review of current knowledge common complication of use of manual wheelchairs for mobility

Article Weaknesses

- Scoping review – doesn't evaluate methodological bias within each study

Take Home Message

- Knowledge of CTS in wheelchair athletes is quite limited, even though it is common among wheelchair users
- There is need for research on CTS in wheelchair athletes with consistent diagnostic methods, impact on life outside sport, treatment and prevention