

Article

Meirelles, L.M., Fernandes, C.H., Ejnisman, B., et al. (2020). The prevalence of carpal tunnel syndrome in adapted sports athletes based on clinical diagnostic. *Orthop Traumatol Surg Res*, 106(4):751-756.
<https://doi.org/10.1016/j.otsr.2020.02.004>

Adaptive Sport/Recreation Categories:

- Musculoskeletal injuries
- Sports biomechanics

Study Type: Cross-sectional study

Summary: Carpal tunnel syndrome (CTS) is a clinical diagnosis supported often by electrodiagnostic studies (EDx) including electromyography and nerve conduction studies (EMG/NCS). The authors found that most literature on CTS in individuals with disabilities relies on EDx, with prevalence of 52% to 79%, rather than clinical history and physical, therefore their objectives were to investigate symptoms and characteristics of CTS in adapted athletes based on clinical presentation, rather than EDx.

Seventy-two athletes (ages 14-54 years, mean 32 years) from 3 adapted sport training centers were evaluated regarding pain and presence of nocturnal paresthesias as well as physical exam for paresthesias during Phalen and Tinel testing. The presence of 2 concomitant clinical symptoms was felt to be indicative of CTS. None of the patients reported pain or nocturnal paresthesias at baseline. With physical exam, 15 athletes had at least one symptom whereas 2 symptoms occurred in 7 hands (6 athletes), a prevalence of 8%.

Article Strengths

- Relatively large sample size (72 athletes, 144 hands) with a higher percentage of female athletes (29%) than other studies.
- Well documented patient characteristics including demographic information, type of physical disability, adapted sport activity and length of participation in sport.

Article Weaknesses

- Awkward use of English at times impedes flow of the article and understanding of finer points.
- Limited background left the reader unsure of the context and significance of findings until the discussion, where the contrast to similar bodies of work regarding prevalence, etiology, and characteristics of CTS in those who use wheelchairs for mobility or adapted athletes was then presented.
- Study did not complete original intent to compare clinical diagnosis to EDx in their athlete population, which may have added more to the strength of the article.

Take Home Message

- Findings suggest lower prevalence of CTS among individuals with disabilities when clinical criteria rather than EDx criteria is used.

Reviewer: Erin Conlee, MD
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ACPDM Adapted Sports/Rec Committee
Journal Article Digest Sub Committee

- No significant relationship was found between presence of symptoms and other characteristics such as wheelchair use, type or length of sport, or hand dominance.

Impact on Clinical Practice:

- This article does not show a relationship between type or length of adapted sport and clinical symptoms of CTS in athletes with disabilities. The authors also noted that even though adapted sport participation has increased, they did not see an increase in CTS among individuals with disability in their institution.
- AAOS recommends clinical CTS diagnosis which in this study, resulted in a lower prevalence than current literature on CTS in individuals who use wheelchairs which favors EDx criteria for diagnosis.