

## **Use of Non-Surgical Mechanical Splinting for Patients with Carpal Tunnel Syndrome**

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### ABSTRACT

Compression of the median nerve causes severe pain and paresthesia in Carpal Tunnel Syndrome (CTS). Over 2,000,000 Americans suffer from Carpal Tunnel Syndrome, making it the most common peripheral neuropathy affecting the U.S. Continual compression over time degrades the median nerve that brings sensation of movement and feeling for the wrist. The purpose of this study was to compare change in symptoms of CTS after use of a non-surgical dynamic splinting device. Methods: A retrospective analysis was accomplished for patients diagnosed with CTS who were treated with prolonged passive stretching in dynamic splinting for this pathology (N=304). The Levine Katz survey was used pre and post to measure symptoms in these patients and the mean treatment duration was 7.8 weeks. The Levine Katz (L-K) survey uses 100 point questionnaire divided into 2 sections to categorize functional, duration, intensity, and frequency of pain. The duration of L-K data ranged from four to 16 weeks and this data was recorded between 2010-2012. Results: A two tailed T-test was performed and there was a statistically significant difference for these patients ( $P < 0.0001$ ). The mean difference was 13.25 points in this 100 point test which equaled a 25% improvement for these patients, (T-Value = 18.605, SD=12.420, SEM= 0.075). Conclusion: As described by Berner et al in a randomized, controlled trial (2009), this modality is an effective therapeutic, noninvasive modality with applies sequential, dynamic tension to reduce pressure and compression on the carpal tunnel. The purpose of this study was to compare change in symptoms of CTS after use of a non-surgical dynamic splinting device and the results showed efficacy with a 25% reduction of symptoms in the last 304 patients treated.

