

To assess the believability of a novel sham intervention for a neurodynamic technique (NDT) in participants with signs and symptoms of carpal tunnel syndrome (CTS). Additionally, we wished to assess a potential mechanism of NDT (hypoalgesia) and to compare outcomes related to clinical pain and upper extremity disability between NDT and a sham intervention. **BACKGROUND:**

Preliminary evidence suggests that NDT is effective in the treatment of CTS. A sham-controlled study is lacking from the literature and could provide insight to the efficacy of NDT, as well as the corresponding mechanisms. **METHODS:**

Participants with signs and symptoms consistent with CTS provided baseline measures of expectation, clinical pain intensity, upper extremity disability, and experimental pain sensitivity. Participants were then randomly assigned to receive either a NDT known to anatomically stress the median nerve or a sham technique intended to minimize stress to the median nerve. Following brief exposure to the assigned technique, expectation was reassessed to observe for group-dependent changes. Participants received the assigned intervention over 3 weeks. Additionally, all participants received a prefabricated wrist splint for their involved hands, with instructions to sleep in the splint and to wear it during painful activities when awake. Following 3 weeks of the assigned intervention and splint wear, baseline measures were reassessed and participants were asked which intervention they believed they had received. **RESULTS:**

Forty females agreed to participate. Expectations for pain relief and perceived group assignment were similar between the groups. Within-session decreases in clinical pain intensity and pressure pain sensitivity were observed independent of group assignment. Reduction of temporal summation was observed only in participants receiving NDT. Significant improvements in clinical pain intensity and upper extremity disability were observed at 3 weeks, independent of group assignment.

#### **CONCLUSION:**

The sham intervention was successful in blinding the participants. Immediate changes in pain sensitivity and intensity and 3-week changes in clinical pain intensity and upper extremity disability associated with NDT were equivalent to a sham intervention to which the participants were adequately blinded. Conversely, reduction of temporal summation was only observed in participants receiving the NDT, suggesting the potential of a favorable neurophysiological effect <sup>1)</sup>.

1)

Bialosky JE, Bishop MD, Price DD, Robinson ME, Vincent KR, George SZ. A randomized sham-controlled trial of a neurodynamic technique in the treatment of carpal tunnel syndrome. *J Orthop Sports Phys Ther.* 2009 Oct;39(10):709-23. doi: 10.2519/jospt.2009.3117. PubMed PMID: 19801812; PubMed Central PMCID: PMC2864088.

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Last update: **2024/06/07 02:48**

