

Efficacy of Thrust and Non-Thrust Manipulation and Exercise With or Without the Addition of Myofascial Therapy for the Management of Acute Post-Inversion Ankle Sprain: A Randomized Clinical Trial

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STUDY DESIGN: Randomized clinical trial. **OBJECTIVE:** To compare the effects of thrust and non-thrust manipulation and exercises with and without the addition of myofascial therapy for the treatment of acute post inversion ankle sprain. **BACKGROUND:** Some studies have reported thrust and non-thrust manipulation of the ankle joint are effective for the management of patients post ankle sprain. However, it is not know if the inclusion of soft tissue myofascial therapy can further improve clinical and functional outcomes. **METHODS:** Fifty patients, 37 men and 13 women (mean \pm SD age: 33 \pm 10 years) with post inversion acute ankle sprain were randomly assigned to 2 groups: a comparison group who received a thrust and non-thrust manipulation and exercise intervention, and an experimental group who received the same protocol and myofascial therapy. The primary outcomes were ankle pain at rest and functional ability. Additionally, ankle mobility and pressure pain threshold (PPT) over the ankle were assessed by a clinician blinded to the treatment allocation. Outcomes of interest were captured at baseline, immediately after the treatment period, and at a 1-month follow-up. The primary analysis was the Group \times Time interaction. **RESULTS:** The 2x3 mixed model ANOVA revealed a significant group \times time interactions for ankle pain ($P < 0.001$) and functional score ($P = 0.002$) with the patients receiving the combination of non-thrust and thrust manipulation and myofascial intervention experiencing a greater improvement in pain and in function than those receiving the non-thrust and thrust manipulation intervention alone. Significant Group \times Time interactions were also observed for ankle mobility ($P < 0.001$) and PPTs (all, $P < 0.01$) with those in the experimental group experiencing greater increases in ankle mobility and PPTs. Between-groups effect sizes were large ($d > 0.85$) for all outcomes. **CONCLUSIONS:** This study provides evidence that the addition of myofascial therapy to a thrust and non-thrust manipulation and exercise protocol may result in superior outcomes as compared to thrust and non-thrust manipulation alone in the treatment of individuals post inversion ankle sprain. However while statistically significant the difference in improvement for the primary outcome between groups was less than what would be considered a minimal clinically important difference. Future studies should examine the long-term effects of these interventions in this population. **LEVEL OF EVIDENCE:** Therapy, Level 1b.

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KEY WORDS: inversion, manual therapy, pressure pain threshold

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