**Article Full Title**

The Effect of Manual Therapy Plus Exercise in Patients with Lateral Ankle Sprains: A Critically Appraised Topic with a Meta-Analysis

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**Paper Abstract**

A high percentage of patients with lateral ankle sprains report poor outcomes and persistent neuromuscular impairment leading to chronic ankle instability and re-injury. Several interventions have been proposed and investigated, but the evidence on manual therapy combined with therapeutic exercise for pain reduction and functional improvement is still uncertain. The purpose was to study the effectiveness of adding manual therapy to therapeutic exercise in patients with lateral ankle sprains through a critically appraised topic. The literature search was performed in PubMed, PEDro, EMBASE and CINAHL databases, and only randomized clinical trials were included according to following criteria: (1) subjects with acute episodes of lateral ankle sprains, (2) administered manual therapy plus therapeutic exercise, (3) comparisons with therapeutic exercise alone and (4) reported outcomes for pain and function. Three randomized clinical trials (for a total of 180 patients) were included in the research. Meta-analyses revealed that manual therapy plus exercise was more effective than only exercises in improving dorsal (MD = 8.79, 95% CI: 6.81, 10.77) and plantar flexion (MD = 8.85, 95% CI 7.07, 10.63), lower limb function (MD = 1.20, 95% CI 0.63, 1.77) and pain (MD = −1.23; 95% IC −1.73, −0.72). Manual therapy can be used with therapeutic exercise to improve clinical outcome in patients with lateral ankle sprains.

**NIH Risk of Bias Tool**

Quality Assessment of Systematic Reviews and Meta-Analyses

**Is the review based on a focused question that is adequately formulated and described?**

Yes

**Were eligibility criteria for included and excluded studies predefined and specified?**

Yes

**Did the literature search strategy use a comprehensive, systematic approach?**

Yes

**Were titles, abstracts, and full-text articles dually and independently reviewed for inclusion and exclusion to minimize bias?**

Yes

**Was publication bias assessed?**

Yes

**Key Finding #1**

Manual therapy combined with therapeutic exercises increases dorsiflexion and plantar flexion, lower limb function, and decreases pain compared to therapeutic exercise alone in lateral ankle sprains.

**Key Finding #2**

The addition of manual therapy with proprioceptive and strengthening exercises in treatment of lateral ankle sprains may maximize treatment efficacy.

**Please provide your summary of the paper**

This study utilized a critical appraisal topic with a meta-analysis to explore the effect of therapeutic exercise in addition to performing manual therapy on pain reduction and functional improvement for acute lateral ankle sprains. It has been shown that isolated exercise alone targeting the ankle is correlated to improvements across all variables in the study. Likewise manual therapy has known positive effects on ankle ROM, pain control, and overall function. When manual therapy was combined with therapeutic exercise range of motion, lower limb function and pain were improved, showing clinical outcomes were increased for patients with lateral ankle sprains when both forms of treatment were utilized.

**Please provide your clinical interpretation of this paper. Include how this study may impact clinical practice and how the results can be implemented.**

This study analyzed 3 random clinical control trials all looking at an active sports population between the ages of 18-50 years old limiting its ability to be generalized to other settings. Further no psychosocial factors were explored in this study leaving room for other factors to have contributed to the successes or injuries that developed into chronic pain. Apart from there being no pure control or placebo group the article did show that multiple studies found the addition of manual therapy with therapeutic exercises proved to have better outcomes on short- and long-term pain and function for the ankle in an active sports population. Therefore, clinicians should use both methods of treatments for the most optimal outcomes in rehabbing acute lateral ankle sprains.