**Article Full Title**

Does manual therapy improve pain and function in patients with plantar fasciitis? A systematic review

**Author Names**

Corbett, R; Donner, C; Fraser, J; Hertel, J

**Reviewer Name**

Dylan Scott, SPT

**Reviewer Affiliations**

Duke University School of Medicine, Doctor of Physical Therapy Division

**Paper Abstract**

Objective To assess if manual therapy (MT) in the treatment of plantar fasciitis (PF) patients improves pain and function more effectively than other interventions. Methods A systematic review of all randomized control trials (RCTs) investigating the effects of MT in the treatment of human patients with PF, plantar fasciosis, and heel pain published in English on PubMed, CINAHL, Cochrane, and Web of Science databases was conducted. Research quality was appraised utilizing the PEDro scale. Cohen’s d effect sizes (ES) and associated 95% confidence intervals (CI) were calculated between treatment groups. Results Seven RCTs were selected that employed MT as a primary independent variable and pain and function as dependent variables. Inclusion of MT in treatment yielded greater improvement in function (6 of 7 studies, CI that did not cross zero in 14 of 25 variables, ES = 0.5–21.5) and algometry (3 of 3 studies, CI that did not cross zero in 9 of 10 variables, ES = 0.7–3.0) from 4 weeks to 6 months when compared to interventions such as stretching, strengthening, or modalities. Though pain improved with the inclusion of MT, ES calculations favored MT in only 2 of 6 studies (3 of 13 variables) and was otherwise equivalent in effectiveness to comparison interventions. Discussion MT is clearly associated with improved function and may be associated with pain reduction in PF patients. It is recommended that clinicians consider use of both joint and soft tissue mobilization techniques in conjunction with stretching and strengthening when treating patients with PF. Level of Evidence Treatment, level 1a.

**NIH Risk of Bias Tool**

Quality Assessment of Systematic Reviews and Meta-Analyses

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

Yes

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

Yes

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

Yes

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

Yes

1. **Was the quality of each included study rated independently by two or more reviewers using a standard method to appraise its internal validity?**

Yes

1. **Were the included studies listed along with important characteristics and results of each study?**

Yes

1. **Was publication bias assessed?**

Cannot Determine, Not Reported, Not Applicable

1. **Was heterogeneity assessed? (This question applies only to meta-analyses.)**

Yes

**Key Finding #1**

"Inclusion of MT (manual therapy) in treatment yielded greater improvement in function and algometry from 4 weeks to 6 months when compared to interventions such as stretching, strengthening, or modalities."

**Key Finding #2**

"A large and conclusive ES (Effect Size) favoring MT and routine care (consisting of stretching, strengthening, and ultrasound) over routine care alone for the NPRS (Numeric Pain Rating Scale) at 3 and 6 week time points.

**Key Finding #3**

"When assessed with algometry, patients treated with MT had conclusively better outcomes than controls at 4 weeks and 3 months with large ES in two studies, but were equivalent at 4 weeks in the third study."

**Key Finding #4**

"Patients who received a corticosteroid injection to the plantar fascia had improved function with large ES from 3 weeks to 3 months, but no better than those treated with MT at 12 months."

**Please provide your summary of the paper**

In this systematic review, seven randomized control trials were selected because they studied manual therapy as a treatment for plantar fasciitis and its effects on pain and function as dependent variables. Manual therapy's effect on patient reported pain (6 studies), patient reported function (7 studies), and algometry (3 studies), were all extracted from the data. The data found that manual therapy improves patient-pain threshold as well as function when compared to other interventions such as stretching and strengthening exercises or modalities. These manual therapy techniques included various joint mobilizations of the ankle-foot complex, as well as myofascial release to the gastrocnemius, soleus, and plantar fascia. Based on the risk to reward of manual therapy for plantar fasciitis, the researchers recommend manual therapy "be included in a comprehensive rehabilitation program, including stretching and exercise, in the treatment of patients with PF".

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

This systematic review reinforces the idea that there is a place for manual therapy in rehabilitation, especially when combined with stretching and strengthening. Plantar fasciitis is relatively common and I can appreciate the effectiveness that mobilizations might have to create more dorsiflexion and improve overall ankle mechanics. This, combined with medial arch strengthening and stretching of the plantar fascia and gastroc-soleus complex, seem like a good start to mitigate factors contributing to PF.