**Article Full Title**

Effectiveness of Mobilization of the Talus and Distal Fibula in the Management of Acute Lateral Ankle Sprain

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**Paper Abstract**

Objective. Distal fibular mobilization with movement (MWM), with and without a posterior gliding fibular tape, and anteroposterior mobilization of the talus (MOB) are widely used to treat acute lateral ankle sprains. The purpose of this study was to investigate the short-term and long-term relative effectiveness of these techniques. Methods. In this double-blind randomized controlled trial, 45 amateur soccer players with acute (&lt;72 hours) lateral ankle sprain were randomly allocated to 6 sessions (3/wk within the first 2 weeks) of either MWM, MWM with tape (MWMtape), or MOB. All participants also received general advice, transcutaneous electrical nerve stimulation, edema draining massage, and a program of proprioception exercises. Participant ratings of function on the Foot and Ankle Ability Measure and Patient Global Impression of Improvement Scale were the primary outcomes measured over 52 weeks. Secondary outcomes were ankle pain, pressure pain threshold, range of motion, volume, and strength. Results. MWM and MWMtape were equally effective and participants demonstrated greater function on the Foot and Ankle Ability Measure at 12 and 52 weeks when compared with those receiving MOB; however, the latter demonstrated superior function at 2 weeks. No differences between groups were observed for Patient Global Impression of Improvement Scale or any of the secondary outcomes. Conclusion. There are limited differences in the short term among techniques, with the exception of better sport function with MOB. Over the longer term, the distal fibular MWM is most effective to achieve activities of daily living and sport function when added to usual physical therapy care. The addition of a posterior gliding fibular tape provides no additional benefit. Impact. Distal fibular mobilization with movement may be the most appropriate choice of treatment for acute lateral ankle sprain to achieve long-term activities of daily living and sport function. In the short term, anteroposterior mobilization of the talus offers greater improvement in sport function. The use of fibular tape provides no added benefit as an adjunct to a treatment that includes distal fibular mobilization with movement.

**NIH Risk of Bias Tool**

**Was the study question or objective clearly stated?**

Yes

**Were eligibility/selection criteria for the study population prespecified and clearly described?**

Yes

**Were the participants in the study representative of those who would be eligible for the test/service/intervention in the general or clinical population of interest?**

Yes

**Were all eligible participants that met the prespecified entry criteria enrolled?**

Yes

**Was the sample size sufficiently large to provide confidence in the findings?**

No

**Was the test/service/intervention clearly described and delivered consistently across the study population?**

No

**Were the outcome measures prespecified, clearly defined, valid, reliable, and assessed consistently across all study participants?**

Yes

**Were the people assessing the outcomes blinded to the participants' exposures/interventions?**

No

**Was the loss to follow-up after baseline 20% or less? Were those lost to follow-up accounted for in the analysis?**

No

**Did the statistical methods examine changes in outcome measures from before to after the intervention? Were statistical tests done that provided p values for the pre-to-post changes?**

Yes

**Were outcome measures of interest taken multiple times before the intervention and multiple times after the intervention (i.e., did they use an interrupted time-series design)?**

Yes

**If the intervention was conducted at a group level (e.g., a whole hospital, a community, etc.) did the statistical analysis take into account the use of individual-level data to determine effects at the group level?**

Cannot Determine, Not Reported, Not Applicable

**Key Finding #1**

There were no differences between treatment groups in the short term for ADL function.

**Key Finding #2**

MOB treatment group showed better sport function in the short term.

**Key Finding #3**

The MWM group showed to be most effective for long term ADL function and sport function when added to physical therapy care.

**Key Finding #4**

There was no added benefit of the addition of posterior gliding fibular tape.

**Please provide your summary of the paper**

This study examined the effect of mobilization of the talus and fibula in management of lateral ankle sprains in soccer players. The participants were randomized into 3 groups, (1) anteroposterior mobilization of the talocrural joint (MOB), (2) distal fibular mobilizations with movement (MWM), (3) and distal fibular mobilization with movement plus posterior gliding fibular tape(MWMtape). The study’s inclusion criteria were as follows: amateur soccer players who presented less than 72 hours after injury, with acute grade 2 sprain of the lateral collateral ligament of the ankle, medical diagnosis of mechanism of injury, swelling, pain on the lateral ankle, restricted ankle ROM, and tenderness on palpation of the lateral ankle ligaments. The study’s exclusion criteria were the following: if the athlete had a past fracture involving realignment or an earlier surgery to the musculoskeletal (msk) structures in the lower extremity, went through an acute injury to the msk framework of other joints of the lower extremity in the past 3 months that affected integrity and function or experienced an ankle sprain in the previous 12 months. The participants were given 8 sessions to treat their injury. During the initial six, they were given advice, manual therapy and electrophysical methods, and the last two were used to teach and to advance in proprioceptive exercises. Mobilization and tape were applied 3 times per week for the first 2 weeks. In addition, all 3 groups received general advice for administering their own ankle treatment such as icing or elevating it, 20 minutes of transcutaneous electrical stimulation, and 5 minutes of edema draining massage. The group undergoing MOB had more sizable FAAM sport scale scores than MWMtape and on the global rating of sports function than MWM, however, no differences on the FAAM ADL subscale or global rating of ADL function in the 2 weeks follow up post treatment. The MWM and MWMtape groups demonstrated better results for the FAAM ADL subscale than the MOB group. There was a global rating of ADL function difference but only between MWMtape and MOB, with MWMtape showing to have increased function. No differences were observed in the FAAM sport subscale or global rating of sports function at the 5 weeks post treatment follow up when compared to the MOB group. At the 12 and 54 week follow ups, MWM and MWMtape groups demonstrated better FAAM ADL subscale, sport subscale, global rating of ADL, and sport function scores compared to the MOB group. These findings suggest that fibular MWM is more effective than MOB treatment in the medium and long-term but the MOB had better outcomes in the short term. There we no differences in the MWM and MWMtape groups through the study therefore, the use of tape as an add on to the fibular mobilization is not recommended. Some limitations to this study were that they lost 8 participants to the 1 year follow up, therefore, the reinjury rate could have been higher and since the sample size was small, there needs to be further investigation for the recurrence rate. There should also be further research done on the dosage of reps and sets, which needs to be established for optimal care. Lastly, there was no control group of standard physical therapy included in this study.

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

The findings in the article suggest that the fibular MWM is the most appropriate choice of treatment for lateral ankle sprains for medium and long-term care. The talocrural mobilization (MOB) demonstrated greater improvement for the short term in sport functions and can be a useful tool to keep in mind. The use of both MWM and MOB mobilizations may provide the greatest outcomes in addition to standard physical therapy care.