

# The Effectiveness of Mobilization with Movement on Pain, Balance and Function Following Acute and Sub-Acute Inversion Ankle Sprain: A Randomized Placebo Controlled Trial

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## ABSTRACT

**Introduction:** Ankle sprain is a frequently observed musculoskeletal injury which imposes a significant economic burden on society. Following acute and sub-acute grade I and II inversion ankle sprain, the lateral ankle ligament complex is injured or possibly there could be inferior fibular fault. The primary impairments are pain, reduced ankle mobility followed by functional loss. The principles initial management are protection, rest, ice, compression, and elevation with exercises program. Mobilization with movement (MWM) can be incorporated to facilitate early resumption of exercise program. Thus, the objective was to determine the effect of MWM on pain, ankle mobility and function in patients with acute and sub-acute grade I and II inversion ankle sprain.

**Methods:** 32 consecutive patients with inversion ankle sprain were randomized either to the experimental group receiving MWM, tape application and usual care or a control group receiving placebo MWM, placebo tape and usual care for six sessions over two weeks. The primary outcome was pain intensity on an 11-point Numeric Rating Scale (NRS). Ankle disability identified by the Foot and Ankle Disability index (FADI), functional ankle dorsiflexion range, pressure pain threshold, dynamic balance measured with Y balance test were secondary outcomes evaluated blind pre- and post-intervention, and at one and six months follow-up.

**Results:** Thirty participants completed the study. At each follow-up point, significant differences were found between groups favouring those receiving MWM for all variables. Pain intensity showed a mean difference of 1.7 points (95% confidence interval, 1.4 to 2.1) and 0.9 points (95% confidence interval, 0.5 to 1.3) at one and six-months follow-up respectively. Benefits were also shown for FADI, ankle mobility, pressure pain threshold and balance.

**Conclusion:** This study provides preliminary data for the benefits of MWM for acute and sub-acute ankle sprain in terms of pain, ankle mobility, disability and balance.

**Keywords:** MWM, Ankle sprain, Balance, Function

