

IMMEDIATE AND SHORT TERM EFFECT OF DRY NEEDLING ON TRICEPS SURAE RANGE OF MOTION AND FUNCTIONAL MOVEMENT: A RANDOMIZED TRIAL

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ABSTRACT

Background: Dry needling (DN) has been established as an effective treatment for myofascial pain, however, there are no studies thus far investigating the benefit to movement and motor control.

Purpose: The primary purpose of this study was to compare differences in a series of outcomes between dry needling, dry needling and stretching, and stretching only in a sample of healthy males. A secondary purpose was to compare change over time.

Design: Blinded, randomized controlled trial

Methods: Thirty healthy male subjects were randomly assigned to one of three intervention groups: DN, stretching, or combination DN + stretching. Subjects in the DN group and DN + stretch group received DN to a palpated trigger point (TrP) in the triceps surae to elicit local twitch response. Subjects in the stretch group and DN + stretch group were instructed in a home stretching program for gastrocnemius and soleus muscles. All groups were tested for dorsiflexion range of motion and performed functional tasks (overhead deep squat, and Y-Balance test, Lower Quarter) prior to intervention, directly after intervention, and four days post intervention. Group comparisons were performed using a repeated measure Analysis of Variance and a partial eta squared calculation for effect size. For all measures a p-value of < 0.05 was used to determine significance. Cohen's criteria were used to categorize strength of effect size.

Results: There were no statistically significant differences among groups for range of motion nor functional measures, with the exception of the deep squat. Proportionally, the DN group improved significantly in deep squat performance ($p < 0.01$) compared to the other groups. Time oriented improvements were seen for the YBT posterior-lateral reach ($p = 0.02$) only. Between groups effect sizes ranged from 0.02 (small) to 0.17 (large).

Conclusions: Including DN did not markedly influence range of motion nor functional assessment measures, excluding those seen during the overhead deep squat. Effect measures suggest the lack of significant findings may be an issue of statistical power.

Level of Evidence: 1b

Key Words: Deep squat, dry needling, range of motion, stretching, triceps surae

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