THE EFFECTS OF DRY NEEDLING ON RUNNERS: A RANDOMIZED CONTROLLED TRIAL

Dewald M,1,2 Whitten B,2 Reynolds A,2 Semprini J2

Background: Runners are frequently plagued with injuries and are often prescribed hip strengthening as an intervention. While the efficacy of hip strengthening as an intervention is understood, less can be said about how ancillary interventions affect it. A common intervention amongst runners is dry needling. While dry needling has been shown to be effective in treating pain, less is understood about its impact on strength and function.

Purpose: The purpose of this study is to determine the effects of dry needling on hip strength and function in runners compared to sham dry needling when both are completed with a progressive resistance hip strengthening intervention.

Study Design: Randomized Controlled Trial.

Methods: Ten subjects between the ages of 20-25, who routinely run, were randomized into either true dry needling and exercise group (n = 5) or a sham dry needling and exercise group (n = 5). The subjects were blinded to their intervention and the researchers were blinded to the treatments. Subjects completed a standardized progressive resistance exercise program with instruction 3x’s/wk for 8 weeks. Once a week subjects either received dry needling with monofilament needles or sham needling with the metal handle of the monofilament needles to the gluteus maximus, gluteus medius, tensor fascia latae, and the piriiformis; supervision was provided for the progression of the hip strengthening program at this time as well. The primary outcomes collected were isometric hip extension, abduction and prone external rotation strength with a dynamometer and functional measurements with the Modified Star Excursion test.

Results: No significant difference was noted between the two groups at each of the three testing times (p< .05) for strength. No significant findings were noted within either group for hip extension measurements. Significant within group difference were noted for the sham group for right hip external rotation between week 4 and week 8 (p = .001) as well as between week 1 and week 8 (p = .004). Left hip external rotation also saw significant within group findings from week 4 to week 8 (p = .02) and week 1 to week 8 (p = .01). There was no significance within group differences noted for hip abduction measurements.

No significance was found between the treatment and sham group with the Modified Star Excursion test. The paired samples t test did show significant difference within DN from week 1 to 8 for left anterior, left posteromedial and left posterolateral (p = 0.036, p = 0.001, p = 0.049 respectively). The sham group showed significant difference at all three time periods for right posteromedial (p = 0.039, p = 0.009, p = 0.009). Right posterolateral showed statistically significant difference at weeks 1-4 (p = 0.036), while left posteromedial showed statistical significance at weeks 4-8 (p = 0.026).

Generally, all groups and directions showed trending and significant improvements in strength and function, without significance for whether they received dry needling or sham dry needling.

Discussion/Conclusion: This study found that dry needling does not add to the intervention of hip strengthening in runners when assessed with isometric hip strength and the Modified Star Excursion test. However, the expectations and the needs of runner should be considered when deciding on intervention options beyond a simple biomechanical framework. The results of this study should be considered cautiously secondary to the low number of subjects. There is limited research regarding the effects of dry needling on strength and function in runners, more studies are needed to further investigate the potential benefits of dry needling in runners.

Presenting Author: Matt Dewald – Matt.Dewald@usd.edu

1University of South Dakota, Department of Physical Therapy; Vermillion, SD; 2Briar Cliff University, Department of Physical Therapy; Sioux City, IA.