

# Effect of Dry Needling on Compensatory Trigger Points in Overhead Athletes with Supraspinatus Tendonitis: A Pilot Study

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## ABSTRACT

**Introduction:** Shoulder injuries, particularly supraspinatus tendonitis, are highly common among athletes involved in overhead sports such as cricket, basketball, volleyball, and badminton, due to the repetitive nature of these activities. Such injuries are frequently complicated by the formation of compensatory trigger points within adjacent musculature, slowing the recovery and performance in athletics. There is evidence to suggest that management of these secondary muscular malfunctions may include Dry Needling (DN) that targets myofascial trigger points. The present study undertakes research on the clinical effectiveness of DN in the line of treatment of supraspinatus tendonitis among compensatory trigger points in overhead athletes.

**Aim:** This study aims to assess the effect of dry needling on compensatory trigger points in overhead athletes with supraspinatus tendonitis.

**Materials and Methods:** Twelve overhead athletes (both genders), aged 18 to 35 years, diagnosed with supraspinatus tendonitis and having active or latent trigger points in the upper trapezius, infraspinatus, or levator scapulae muscles, participated in this 4-week pilot randomised controlled trial. Participants were randomly allocated into two groups: Group A (conventional physiotherapy only, n=6) and Group B (dry needling combined with conventional physiotherapy, n=6). Both groups received intervention sessions over the study period. Individuals with needle phobia, a history of shoulder surgery, or systemic conditions were excluded. Outcome measures included pain intensity, shoulder

Range of Motion (ROM), and functional disability, which were assessed pre- and postintervention. Data were analysed and presented as mean±SD.

**Results:** The experimental group (Group B) demonstrated statistically superior improvements across all clinical parameters compared to the control group (Group A). Following the intervention, Numerical Pain Rating Scale (NPRS) scores in Group B decreased from 7.1±1.2 to 3.0±0.8 ( $p<0.001$ ), while Group A showed a minor reduction from 6.9±1.3 to 5.5±1.1 ( $p=0.04$ ). Similarly, functional disability (SPADI) scores in Group B significantly improved from 70±8% to 25±7% ( $p<0.001$ ), compared to a decrease from 69±9% to 52±8% ( $p=0.03$ ) in Group A. Range of motion (ROM) in Group B also showed highly significant gains ( $p<0.001$ ), with flexion increasing from 105°±12 to 145°±10, abduction from 90°±11 to 125°±9, and external rotation from 35°±6 to 65°±7.

**Conclusion:** The results of this pilot study indicate that the integration of dry needling with conventional physiotherapy is significantly more effective than physiotherapy alone in treating overhead athletes with supraspinatus tendonitis. The experimental group achieved superior outcomes in pain reduction, functional recovery, and joint mobility. These findings suggest that addressing compensatory myofascial trigger points through dry needling can accelerate the rehabilitation process and improve overall shoulder performance in this population. A larger-scale randomised controlled trial is warranted to confirm these preliminary findings.

**Keywords:** Dry Needling, Supraspinatus Tendonitis, Overhead Athletes, Myofascial Trigger Points.

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