

## CASE REPORT

DRY NEEDLING INCREASES MUSCLE THICKNESS  
IN A SUBJECT WITH PERSISTENT MUSCLE  
DYSFUNCTION: A CASE REPORTKevin M. Cross, PhD, PT, ATC<sup>1</sup>Michael McMurray, DPT, OCS, FAAOMPT<sup>1</sup>

## ABSTRACT

**Background and purpose:** Muscle dysfunction is very common following musculoskeletal injury. There is very little evidence to suggest that muscle function may be positively impacted by soft tissue interventions, such as dry needling. The purpose of this case report is to describe the immediate effect of dry needling on muscle thickness in a subject after shoulder surgery.

**Case Description:** A 22 year-old competitive gymnast presented seven months post shoulder surgery with significant impairments and functional limitations. Previous physical therapy focused on restoration of range of motion and strength using general exercise interventions, but the subject had persistent tightness and weakness of musculature of the shoulder complex. A subject-specific physical therapy program including manual physical therapy resulted in significant initial improvement, but lack of flexibility and weakness of the rotator cuff limited progress. Dry needling was used to address persistent myofascial trigger points.

**Outcomes:** Immediately after dry needling the infraspinatus, the muscle's thickness was significantly improved as measured by rehabilitative ultrasound imaging. There was a corresponding increase in force production of external rotation at 90 degrees of abduction.

**Discussion:** Minimal research exists that validates the potential of dry needling on muscle function, as assessed by muscle thickness measured using rehabilitative ultrasound imaging. The results of this case report suggest that dry needling contributed to improvement in muscle thickness and strength in a subject with muscle dysfunction following an injury.

**Level of Evidence:** 4

**Key words:** Dry needling, muscle thickness, trigger points

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