

Trigger Point Dry Needling and the Local Twitch Response

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Trigger point dry needling involves inserting a dry, filament-like needle subcutaneously into a taut muscle known as a myofascial trigger point (MTrP). The therapeutic effects from dry needling are still being investigated, however, the supported effects thus far include increasing blood flow to reduce myofascial ischemia (Hsieh 2011), peripheral analgesia (Bladry 2005), gate control theory (Cagnie 2012) release of pain mediating neurotransmitters

(Shah 2005) and opioids from the periaqueductal grey (PAG) area (Niddam 2007).

There is strong evidence that trigger point dry needling is effective at reducing pain in the immediate term (Hsieh 2007) and up to 4 weeks (Tekin 2013) compared to placebo or sham for upper quarter myofascial pain. There is limited evidence comparing the use of trigger point dry needling to other treatments.

The Local Twitch Response

A local twitch response (LTR) is often seen by the clinician during a dry needling procedure and/or perceived by the patient.

LTR is thought to reduce spontaneous electrical noise at the motor endplate leading to greater tissue extensibility.(Chen 2001, Hsieh 2011, Chou 2011) A LTR is an involuntary and momentary twitch of the muscle that has been associated with a short-term positive therapeutic benefit. (Hong 1994, Rha 2011) The studies looking at the LTR have been case controlled designs. In one recent study (Rha 2011), subjects received up to 10 needle insertions to the upper trap, quadratus lumborum, and erector spinae to elicit the LTR evidenced by ultrasound.

The researchers attempted to elicit as many LTRs as possible in a given muscle group. It is difficult to know the dosage of needles received by the subjects who experienced the LTR. Also,

all subjects immediately following the dry needling treatment subsequently received Lidocaine injections to ease post-needling soreness. Lidocaine is used to treat pain, thus using it in this study is a confounding intervention. Finally, the study lacked blinded assessment, a control group, and did not report effect size.

There have been a number of studies that have determined that dry needling is a safe and effective treatment for myofascial pain but did not report data on the presence or absence of the LTR. The clinical importance of the LTR however requires further investigation of better-controlled and longer termed studies to determine it's clinical value.