

## Dry Needling: Evidence Based Approach to Treat Myofascial Trigger Points

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When it comes to pain management, trigger point treatment is essential, and there are several methods used to manage them well. Manual techniques like Muscle Energy Techniques (MET) and prolonged pressure are essential. Using these hands-on techniques, trained professionals apply pressure to particular points to release tension and discomfort. Conversely, invasive techniques include operations such as Trigger Point Injections, in which drugs are injected directly into trigger points to produce specific relief. Dry needling is another invasive treatment that is becoming more and more popular. It includes placing tiny needles into trigger points in order to promote healing and relieve tension. Trigger point treatment is approached differently by each method, meeting the various needs and preferences of patients. In Dry needling we use a small filiform needle to puncture the skin and stimulate underlying myofascial trigger points as well as muscle and connective tissues, dry needling is a skillful technique performed by a physical therapist. This therapy approach was created specially to address movement deficits and neuromusculoskeletal discomfort.

Dry needling attempts to address and relieve trigger point pain by carefully placing the needle in specific

places while also improving musculoskeletal system function. This intervention is a useful technique in physical therapy for promoting pain relief and restoring optimal movement patterns because of its precision and skill.<sup>1</sup>

The theory behind dry needling (DN) is that treatment can address deficits of body structure and function as well as persistent peripheral nociceptive input, which will ultimately promote involvement and activity. It is thought that the impact of the needle causes a reduction in spontaneous electrical activity (SEA), which is followed by relaxation, which is brought about by either a reflex mechanism or a direct local electrical stimulus. The needle causes individual muscle fibers' cell membranes to rupture as it is inserted into muscle tissue. This results in a short discharge known as "insertional activity." Amplitudes of up to 2 mV can be produced by this activity, which can be extended in neuropathy conditions to surpass 300 mS and further exacerbated by needle manipulation. In muscles that are shortened, the insertional activity may cause apparent fasciculation and ensuing relaxation. Moreover, the spinning action of a needle produces strong stimulation when grabbed by strained muscles. This rotating motion is transformed into linear motion, which may cause local spinal reflexes to trigger muscle relaxation by locally shortening muscle fibers, activating muscle spindles, and stimulating the Golgi Tendo Organs. The basis for the therapeutic effectiveness of dry needling in treating neuromusculoskeletal pain and improving

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functional outcomes is this molecular understanding.<sup>2</sup> The training and experience of the practitioner must be carefully taken into account when assessing the effectiveness of trigger point (TrP) treatment, whether it is administered manually or by dry needling. Assessing the efficacy of TrP treatment without considering the practitioner's degree of proficiency with these methods is a grave error. The competence and expertise of the practitioner have a major role in the efficacy of TrP therapy. Professionals with extensive training and expertise have a higher likelihood of correctly identifying trigger points, using exact approaches, and producing the best outcomes. Consequently, the combination of the methodology and the practitioner's experience should be credited for the efficacy of TrP treatment rather than the method alone. When it comes to trigger point therapy, the saying "the result is closely related to the practitioner's skill" is accurate.<sup>3</sup>

In order to ensure patients' safety during dry needling, practitioners need to take extra care. People taking anticoagulant therapy need to take extra precautions since their risk of bleeding increases. Furthermore, individuals who have recently taken aspirin should be monitored closely, and there are recommendations in place specifically for tobacco smokers that mandate quitting and taking time-released vitamin C to reduce the risk of problems. In order to promote patient comfort, practitioners should address concerns from individuals who have a needle phobia. In order to avoid the unpleasant consequence of pneumothorax, it is imperative that the needle not be aimed at intercostal regions.

The possibility of needle fracture throughout the treatment necessitates careful consideration, particularly at the hub attachment point. Precise placement of the needle tip is crucial because it can be easy to misjudge, especially when using long, thin needles. Finally, since they jeopardize the procedure's safety, needles having burrs at the tip

have to be completely avoided. All of these safety measures work together to make patients' experiences with dry needling safer and more efficient.<sup>4</sup>

While dry needling and acupuncture both involve inserting needles into the body, their underlying ideas and methods are different. The theory behind acupuncture, which has its roots in ancient Chinese medicine, is to balance the flow of energy, or "qi," along meridians. Acupuncturists evaluate a patient's general health in a comprehensive manner, taking their constitution and symptoms into account. The precise location of needles along meridians is determined by this thorough diagnosis. Dry needling, on the other hand, is a Western medical technique that targets pain and dysfunction related to the musculoskeletal system. Professionals focus on trigger points, using a diagnosis strategy based on musculoskeletal evaluations. To ease tension and encourage muscular relaxation, the needles are placed right into these points or into tight muscle bands.<sup>5</sup>

Regarding the practice of physical therapy, dry needling has been acknowledged and approved by prestigious organizations all over the world. The use of dry needling in physical therapy for the management of myofascial trigger points is supported by the World Confederation of Physical Therapy, the International Federation of Orthopedic Manipulative Physical Therapy, the American Physical Therapy Association, the Pakistan Association of Orthopedic Manipulative Physical Therapy, and the Pakistan Association of Physical Therapy. This widespread endorsement denotes a recognition on a global scale of the effectiveness and validity of dry needling as a therapeutic intervention in the physical therapy domain.

The acknowledgment bestowed by these esteemed organizations highlights the adoption and assimilation of dry needling into modern physical therapy methods, emphasizing its function in resolving myofascial trigger points for enhanced

patient outcomes and comprehensive care.

Important contraindications are associated with dry needling, a valuable therapeutic method, to ensure patient safety. To reduce the possibility of difficulties, the practitioner must, first and foremost, have sufficient practical expertise. Consent from the patient is crucial, and if the patient declines, the procedure shouldn't go forward. Infection prevention requires maintaining equipment sterility, and compromised sterility is contraindication. Dry needling is typically avoided as a precaution during pregnancy, particularly in the first trimester.

Because the parts of an infant's scalp are sensitive, dry needling is not advised. Patients who are immunocompromised, such as those receiving cancer therapy, bleeding disorders sufferers, and high-dose anticoagulant users are not recommended.

Avoiding local infections and sensitive places such as the umbilicus, nipples, and external genitalia is advised. Dry needling is not advised over joint replacements, breast implants, cardiac pacemakers, or spinal stimulators to avoid possible harm. Finally, to avoid difficulties, care is taken while in close proximity to the viscera or lung field. It is ensured that dry needling is applied safely and effectively in clinical settings when these contraindications are followed.

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