Dry Needling of Myofascial Trigger Points
Corporate Medical Policy

File Name: Dry Needling of Myofascial Trigger Points
File Code: UM.REHAB.09
Origination: 04/2015
Last Review: 08/2017
Next Review: 08/2018
Effective Date: 03/01/2018

Description/Summary

Trigger points are discrete, focal, hyperirritable spots within a taut band of skeletal muscle fibers that produce local and/or referred pain when stimulated. Dry needling refers to a procedure whereby a fine needle is inserted into the trigger point to induce a twitch response and relieve the pain.

For individuals who have trigger points associated with myofascial pain who receive dry needling of trigger points, the evidence includes a number of randomized controlled trials and systematic reviews. Relevant outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. Overall, dry needling of trigger points has not been shown to be clinically superior to sham treatment or manual therapy. In addition, dry needling is associated with a high incidence of mild adverse events. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have myofascial trigger points associated with plantar heel pain who receive dry needling of trigger points, the evidence includes RCTs, quasi-experimental studies, and a systematic review. Relevant outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. The systematic review, which included 3 quasi-experimental studies, rated study quality as poor. One RCT was double-blinded and sham-controlled; it found a statistically significant greater reduction in pain in the dry needling group than in the sham group, but the difference was not clinically significant (ie, it did not meet the prespecified minimally important difference). The other RCT, a singleblind trial comparing dry needling with usual care, found a significantly greater reduction in pain at the end of active treatment, but not at follow-up 1 month later. Moreover, range of motion outcomes did not differ significantly between groups at either time point. To date, the studies have not demonstrated a statistical or a clinical benefit for dry needling. Additional RCTs, especially those with a sham-control group, would strengthen the evidence base. The evidence is insufficient to determine the effects of the technology on health outcomes.
For individuals who have myofascial trigger points associated with temporomandibular pain who receive dry needling of trigger points, the evidence includes 1 RCT. Relevant outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. One double-blind, sham-controlled randomized trial was identified; it found that, 1 week after completing the intervention, there were no statistically significant differences between groups in pain scores or function (unassisted jaw opening without pain).

There was a significantly higher pain pressure threshold in the treatment group. Additional RCTs, especially those with a sham-control group, are needed. The evidence is insufficient to determine the effects of the technology on health outcomes.

**Policy**

Dry needling of trigger points for the treatment of myofascial pain is considered investigational.

**Coding Information**

Click the links below for attachments, coding tables & instructions.

**Attachment I: CPT Code Table & Instructions**

There is currently no specific CPT code for dry needling. The AMA CPT instructs that the unlisted code 20999 (unlisted procedure, musculoskeletal system) general should be used for the dry needling procedure for Allopathic physicians and CPT code 97799 (unlisted physical medicine/rehabilitation service or procedure) for Chiropractic and Physical Therapists. Because dry needling is not acupuncture, CPT codes 97810-97814 are not appropriate.

BCBSVT does not consider dry needling to be a manual therapy and should not be billed with CPT code 97140 (Manual therapy techniques, (eg, mobilization/manipulation, manual lymph drainage, manual traction, one or more regions, each 15 minutes).

BCBSVT does not consider dry needling to be an injection and should not be billed with CPT code 20552 (Injection(s); single or multiple trigger point(s), 1 or 2 muscle(s) or CPT 20553 (single or multiple trigger point(s), 3 or more muscles.

**Background**

Dry needling refers to a procedure in which a fine needle is inserted into the skin and muscle at a site of myofascial pain. The needle may be moved in an up-and-down motion, rotated, and/or left in place for as long as 30 minutes. The intent is to stimulate underlying myofascial trigger points, muscles, and connective tissues to manage myofascial pain. Dry needling may be performed with acupuncture needles or standard hypodermic needles, but is performed without the injection of medications (eg, anesthetics, corticosteroids). Dry needling is proposed to treat dysfunctions in skeletal muscle, fascia, and connective tissue; diminish persistent peripheral pain; and reduce impairments of body structure and function.

The physiological basis for dry needling depends on the targeted tissue and treatment objectives. The most studied targets are trigger points. Trigger points are discrete, focal, hyperirritable spots within a taut band of skeletal muscle fibers that produce local and/or
referred pain when stimulated. Trigger points are associated with local ischemia and hypoxia, a significantly lowered pH, local and referred pain, and altered muscle activation patterns. Trigger points can be visualized by magnetic resonance imaging and elastography. Reliability of manual identification of trigger points has not been established.

Deep dry needling is believed to inactivate trigger points by eliciting contraction and subsequent relaxation of the taut band via a spinal cord reflex. This local twitch response is defined as a transient visible or palpable contraction or dimpling of the muscle, and has been associated with alleviation of spontaneous electrical activity; reduction of numerous nociceptive, inflammatory, and immune system related chemicals; and relaxation of the taut band. Deep dry needling of trigger points is believed to reduce local and referred pain, improve range of motion, and decrease trigger point irritability.

Superficial dry needling is thought to activate mechanoreceptors and have an indirect effect on pain by inhibiting C-fiber pain impulses. The physiological basis for dry needling treatment of excessive muscle tension, scar tissue, fascia, and connective tissues is not as well described in the literature.

Alternative non-pharmacologic treatment modalities for trigger point pain include manual techniques, massage, acupressure, ultrasonography, application of heat or ice, diathermy, transcutaneous electrical nerve stimulation, and spray cooling with manual stretch.

**Regulatory status**

Dry needling is considered a procedure and, as such, is not subject to regulation by the U.S. Food and Drug Administration.

**Rationale**

This evidence review was created in January 2016 with a search of the MEDLINE database through December 17, 2015.

Randomized controlled trials (RCTs) are particularly important to assess treatment of pain, due to expected placebo effect, the subjective nature of pain outcomes, and the variable natural history of pain that often responds to conservative care. For these reasons, controlled trials are needed to demonstrate the clinical effectiveness of dry needling of trigger points for treating myofascial pain. Evidence assessed for this review focuses on sham-controlled RCTs and RCTs that compare dry needling with manual therapy.

**Dry Needling of Trigger Points**

A number of RCTs and systematic reviews have assessed dry needling for the treatment of trigger points in the neck, heel, and temporomandibular joint.

**Neck Pain**

A 2015 qualitative systematic review by Cagnie et al included 8 studies that met selection criteria for deep dry needling of trigger points of the upper trapezius in patients with neck
pain. Only studies rated as moderate or good quality were included. Outcomes for the short and medium term were assessed for pain, range of motion (ROM), functionality, and quality of life (QOL). Control treatments included lidocaine injection plus self-stretching, non-trigger point deep needling, mini-scalpel needling, sham acupuncture, and superficial dry needling. All studies showed a decrease in pain with dry needling, but only 1 study found greater improvement in pain with dry needling compared with other treatments. The review found moderate evidence that dry needling, ROM exercises, and lidocaine injections increased ROM. One study found an improvement in QOL comparable to that of nonsteroidal anti-inflammatory medications and, of 3 studies that assessed depression, only 1 found a significant improvement after treatment with deep dry needling.

Several RCTs have been published since the Cagnie review. As noted above, the review focused on trials comparing dry needling with sham or manual therapy. None of the new RCTs was sham-controlled; 2 compared dry needling and manual therapy and are described next.

A 2014 report by Llamas-Ramos et al compared trigger point dry needling with trigger point manual therapy in an RCT of 94 patients. Strengths of this study included allocation concealment, blinding, intention-to-treat analysis, and adequate power. Patients treated with manual therapy had outcomes similar to dry needling for the primary outcomes of decreased neck pain intensity and disability. For example, pain intensity was 6.2 at baseline for both groups; it decreased to near 2 immediately postintervention and near 1 at 2-week follow-up. Cervical ROM was also improved to a similar extent in the 2 groups, while pain pressure threshold was significantly better for the dry needling group. Temporary muscle soreness or fatigue was reported by 55% of the dry needling group and 23% of the manual therapy group.

In 2017, De Meulemeester at al published an RCT assessing 42 patients with myofascial neck and/or shoulder pain. Patients were assigned to receive 4 sessions of dry needling (n=20) or manual pressure (n=22). The primary outcome was disability assessed using a 50-point Neck Disability Index (NDI). Baseline NDI score was at least 10 in all patients. Patients were evaluated at the end of the intervention period and again after 3 months. There were no significant differences in NDI scores between the dry needling group and the manual pressure group at either follow-up point (p>0.05). In addition, findings were not significantly better in the dry needling compared with the manual pressure group for secondary outcomes, including the pressure pain threshold and pain intensity (measured on a numeric rating scale).

**Plantar Heel Pain**

Cotchett et al reported a systematic review of dry needling and injections of myofascial trigger points associated with plantar heel pain in 2010. Three quasi-experimental trials were identified: 2 used dry needling combined with acupuncture and a third examined lidocaine injections combined with physical therapy. The methodologic quality of the trials was rated as poor and meta-analysis was not conducted due to heterogeneity between the trials.

In 2014 Cotchett et al reported a double-blinded, sham-controlled RCT of trigger point dry needling for plantar heel pain. Patients (N=84) with plantar heel pain of at least 1 month in duration were assigned to 6 weekly active or sham treatments. The primary outcomes, first step heel pain and Foot Health Status Questionnaire (FHSQ) scores at 6 weeks, were measured in 81 (96.4%) patients. The group given dry needling had statistically significantly
greater improvement in first step pain and foot pain (adjusted mean difference of 14.4 mm on a 100-mm visual analog scale [VAS] and 10.0 points on the FHSQ), but the magnitude of change did not reach the prespecified minimally important difference (MID) for the scales used. Seventy (32% of treatments) minor adverse events were reported in the active dry needling group compared with only 1 (<1%) in the sham group. Strengths of this trial included allocation concealment, patient and evaluator blinding, sample size calculations for adequate power, and a high rate of follow-up. Limitations included lack of a clinically significant mean response and the lack of reporting response rates (ie, the percentage of patients who experienced improvement on the primary outcome measures that was equal to or greater than the prespecified MID).

In 2016, Eftekhsadat et al published a single-blinded RCT with 20 patients with plantar fasciitis in Iran. Patients with plantar heel pain of at least 1 month in duration were assigned to treatment with dry needling (n=10) or to usual care (n=10). The intervention group received 1 dry needling session of myofascial trigger points per week for 4 weeks. In addition, all patients were instructed in stretching exercises and were administered anti-inflammatory medication. The primary outcomes pain on a 100-point VAS, and range of motion of ankle joint in dorsiflexion (ROMDF) and plantar extension (ROMPE) were measured at baseline, at the end of the intervention period, and 4 weeks after the intervention ended. All patients completed the trial. At the end of the intervention, the mean VAS score was significantly lower in the treatment group (2.6) than in the usual care group (6.6; p<0.001). However, 4 weeks after the intervention had ended, there was no statistically significant difference in VAS scores between groups (mean VAS, 3.0 vs 3.5; p=0.36, respectively). Moreover, there was no significant between-group difference in ROMDF or ROMPE scores at the end of the intervention or at 4 weeks post-intervention. Adverse events were not reported.

**Temporomandibular Pain**

A double-blind, sham-controlled trial of dry needling for the treatment of temporomandibular myofascial pain was reported by Diracoglu et al in 2012.12 Patients (N=52) with symptoms for at least 6 weeks with 2 or more myofascial trigger points in the temporomandibular muscles were included in the trial. Trigger points were stimulated once weekly over 3 weeks. The sham condition involved dry needling in areas away from the trigger points. Patients were evaluated 1 week after the last needling. At follow-up, there was no significant difference between groups in pain scores assessed by a 10-point VAS. Mean VAS scores were 3.88 in the treatment group and 3.80 in the control group (p=0.478). In addition, the difference in unassisted jaw opening without pain did not differ significantly between the treatment group (40.1 mm) and the control group (39.6 mm; p=0.411). The mean pain pressure threshold was significantly higher in the treatment group (3.21 kg/cm²) than in the control group (2.75 kg/cm²; p<0.001).

**Adverse Events**

A prospective survey of 39 physical therapists, providing 7629 dry needling treatments, reported 1463 (19.18%) mild adverse events (bruising, bleeding, pain) and no serious adverse events.

**Summary of Evidence**
For individuals who have trigger points associated with myofascial pain who receive dry needling of trigger points, the evidence includes a number of randomized controlled trials and systematic reviews. Relevant outcomes are symptoms, functional outcomes, quality of life, and treatment-related morbidity. Overall, dry needling of trigger points has not been shown to be clinically superior to sham treatment or manual therapy. In addition, dry needling is associated with a high incidence of mild adverse events. The evidence is insufficient to determine the effects of the technology on health outcomes.

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**SUPPLEMENTAL INFORMATION**

**Practice Guidelines and Position Statements**

**American Physical Therapy Association**

A 2012 educational resource paper by the American Physical Therapy Association (APTA) stated: “Dry needling (DN) is a skilled intervention used by physical therapists (where allowed by state law) that uses a thin filiform needle to penetrate the skin and stimulate underlying myofascial trigger points, muscular, and connective tissues for the management of neuromusculoskeletal pain and movement impairments.”
In 2013, APTA issued an educational resource paper that included the following indications for dry needling: radiculopathies, joint dysfunction, disc pathology, tendonitis, craniomandibular dysfunction, carpal tunnel syndrome, whiplash-associated disorders, and complex regional pain syndrome.

American Academy of Orthopaedic Physical Therapists

In 2009, the American Academy of Orthopaedic Physical Therapists (AAOMPT) issued a statement that dry needling is within the scope of physical therapist practice. In support of this position, AAOMPT stated that “dry needling is a neurophysiological evidence-based treatment technique that requires effective manual assessment of the neuromuscular system. Physical therapists are well trained to utilize dry needling in conjunction with manual physical therapy interventions. Research supports that dry needling improves pain control, reduces muscle tension, normalizes biochemical and electrical dysfunction of motor endplates, and facilitates an accelerated return to active rehabilitation.”

Reference Resources


Document Precedence

Blue Cross and Blue Shield of Vermont (BCBSVT) Medical Policies are developed to provide clinical guidance and are based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. The applicable group/individual contract and member certificate language, or employer’s benefit plan if an ASO group, determines benefits that are in effect at the time of service. Since medical practices and knowledge are constantly evolving, BCBSVT reserves the right to review and revise its medical policies periodically. To the extent that there may be any conflict between medical policy and contract/employer benefit plan language, the member’s contract/employer benefit plan language takes precedence.

Audit Information

BCBSVT reserves the right to conduct audits on any provider and/or facility to ensure compliance with the guidelines stated in the medical policy. If an audit identifies instances of non-compliance with this medical policy, BCBSVT reserves the right to recoup all non-compliant payments.

Administrative and Contractual Guidance

Benefit Determination Guidance

An approved referral authorization for members of the New England Health Plan (NEHP) is required. A prior approval for Access Blue New England (ABNE) members is required. NEHP/ABNE members may have different benefits for services listed in this policy. To confirm benefits, please contact the customer service department at the member’s health plan.
Federal Employee Program (FEP): Members may have different benefits that apply. For further information please contact FEP customer service or refer to the FEP Service Benefit Plan Brochure. It is important to verify the member’s benefits prior to providing the service to determine if benefits are available or if there is a specific exclusion in the member’s benefit.

Coverage varies according to the member’s group or individual contract. Not all groups are required to follow the Vermont legislative mandates. Member Contract language takes precedence over medical policy when there is a conflict.

If the member receives benefits through an Administrative Services Only (ASO) group, benefits may vary or not apply. To verify benefit information, please refer to the member’s employer benefit plan documents or contact the customer service department. Language in the employer benefit plan documents takes precedence over medical policy when there is a conflict.

Policy Implementation/Update information

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<th>Description</th>
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<tr>
<td>04/2015</td>
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<tr>
<td>07/2016</td>
<td>Revised to align with BCBSA Medical Policy</td>
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<tr>
<td>08/2017</td>
<td>Policy updated with literature review through February 23, 2017, reference 5-8 and 12 added. Policy statement unchanged to align with BCBSA MPRM 2.01.100.</td>
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Eligible providers

Qualified healthcare professionals practicing within the scope of their license(s).

Approved by BCBSVT Medical Directors     Date Approved

Gabrielle Bercy-Roberson, MD, MPH, MBA
Senior Medical Director
Chair, Health Policy Committee

Joshua Plavin, MD, MPH, MBA
Chief Medical Officer

Attachment I
CPT Code Table & Instructions
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<th>Code Type</th>
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