Medical Policy

Blue Cross Blue Shield Blue Care Network of Michigan

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***Current Policy Effective Date: 5/1/22**
(See policy history boxes for previous effective dates)

Title: Dry Needling of Trigger Points for Myofascial Pain

Description/Background

Dry Needling

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 (e.g., 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 physiologic 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.[1] Trigger points can be visualized by magnetic resonance imaging and elastography. The 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.[1] 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 physiologic basis for dry needling treatment of excessive muscle tension, scar tissue, fascia, and connective tissues is not as well described in the literature.[1]

Regulatory Status

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

Medical Policy Statement

Dry needling of myofascial trigger points is experimental/investigational. It has not been scientifically demonstrated to improve patient clinical outcomes.

Inclusionary and Exclusionary Guidelines (Clinically based guidelines that may support individual consideration and pre-authorization decisions)

N/A

CPT/HCPCS Level II Codes *(Note: The inclusion of a code in this list is not a guarantee of coverage. Please refer to the medical policy statement to determine the status of a given procedure.)*

Established codes:

N/A

Other codes (investigational, not medically necessary, etc.):

20999 20560 20561

Note: Codes 97810-97814 are not appropriate since this is not the same as acupuncture

Note: Individual policy criteria determine the coverage status of the CPT/HCPCS code(s) on this policy. Codes listed in this policy may have different coverage positions (such as established or experimental/investigational) in other medical policies.

Rationale

Evidence reviews assess the clinical evidence to determine whether the use of technology improves the net health outcome. Broadly defined, health outcomes are the length of life, quality of life (QOL), and ability to function-including benefits and harms. Every clinical condition has specific outcomes that are important to patients and managing the course of that condition. Validated outcome measures are necessary to ascertain whether a condition

improves or worsens; and whether the magnitude of that change is clinically significant. The net health outcome is a balance of benefits and harms.

To assess whether the evidence is sufficient to draw conclusions about the net health outcome of technology, two domains are examined: the relevance, and quality and credibility. To be relevant, studies must represent one or more intended clinical use of the technology in the intended population and compare an effective and appropriate alternative at a comparable intensity. For some conditions, the alternative will be supportive care or surveillance. The quality and credibility of the evidence depend on study design and conduct, minimizing bias and confounding that can generate incorrect findings. The randomized controlled trial (RCT) is preferred to assess efficacy; however, in some circumstances, nonrandomized studies may be adequate. RCTs are rarely large enough or long enough to capture less common adverse events and long-term effects. Other types of studies can be used for these purposes and to assess generalizability to broader clinical populations and settings of clinical practice.

Dry Needling of Trigger Points Associated with Neck and/or Shoulder Pain

Clinical Context and Therapy Purpose

The purpose of dry needling in patients who have myofascial neck and/or shoulder pain is to provide a treatment option that is an alternative to or an improvement on existing therapies.

The question addressed in this evidence review is: does dry needling improve the net health outcome in patients with myofascial pain?

The following **PICO** was used to select literature to inform this review.

Patients

The relevant populations of interest are individuals with myofascial trigger points associated with neck, shoulder pain. Trigger points are discrete, focal, hyperirritable spots within a taut band of skeletal muscle fibers that produce local and/or referred pain when stimulated.

Interventions

The therapy being considered is dry needling.

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. The needle may be moved in an up-and-down motion, rotated, and/or left in place for as long as 30 minutes. The physiologic basis for dry needling depends on the targeted tissue and treatment objectives. Deep dry needling is believed to inactivate trigger points by eliciting contraction and subsequent relaxation of the taut band via a spinal cord reflex. Superficial dry needling is thought to activate mechanoreceptors and have an indirect effect on pain by inhibiting C-fiber pain impulses.

Comparators

Alternative nonpharmacologic 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.[2]

Outcomes

The outcomes of interest are symptoms, functional outcomes, QOL, and treatment-related morbidity.

Review of Evidence

Systemic Reviews

Charles et al (2019) conducted a systematic review of different techniques for treatment of myofascial pain. [3] A total of 23 studies of dry needling were included. Of these, 15 assessed the technique for neck or shoulder pain. The quality of evidence for dry needling in the management of myofascial pain and trigger points ranged from very low to moderate compared with control groups, sham interventions, or other treatments for changes in pain, pressure point threshold, and functional outcomes. Multiple limitations in the body of the evidence were identified, including high risk of bias, small sample sizes, unclear randomization and concealment procedures, inappropriate blinding, imbalanced baseline characteristics, lack of standardized methodologies, unreliable outcome measures, high attrition rates, unknown long-term treatment effects, lack of effective sham methods, and lack of standardized guidelines in the location of trigger points. The reviewers concluded that the evidence for dry needling was not greater than placebo.

Navarro-Santana et al (2020) conducted a systematic review and meta-analysis of dry needling of myofascial trigger points associated with neck pain compared to sham needling, no intervention, or other physical interventions.[4] A total of28 RCTs were included. Dry needling reduced pain immediately after the intervention (mean difference [MD] in pain score-1.53; 95% confidence interval [CI] -2.29 to -0.76) and at the short-term (up to 1 month) (MD -2.31, 95% CI -3.64 to -0.99)when compared with sham, placebo, waiting list, or other forms of dry needling, and at the short-term compared with manual therapy (MD -0.51, 95% CI -0.95 to -0.06). No differences in comparison with other physical therapy interventions were observed. An effect on pain-related disability at the short-term was found when comparing dry needling with sham, placebo, waiting list, or other form of dry needling, but not with manual therapy or other physical therapy interventions.

Navarro-Santana et al (2020) also conducted a systematic review and meta-analysis of dry needling for shoulder pain.[5] The meta-analysis found moderate quality evidence for a small effect (MD -0.49 points; 95% CI -0.84 to -0.13;standardized mean difference [SMD] -0.25; 95% CI -0.42 to -0.09) for decreasing shoulder pain intensity, and low quality evidence for a large effect (MD -9.99 points; 95% CI -15.97 to -4.01; SMD -1.14; 95% CI -1.81 to -0.47) for reducing related disability. The effects on pain intensity were found only in the short term (up to 1 month) and did not reach the minimal clinically important difference of 1.1 points for the numerical pain rating scale (0–10) determined for patients with shoulder pain. Confidence intervals of the main effects of dry needling on pain intensity and related disability were wide. Additionally, the trials were heterogeneous with regard to the number and/or frequency of needling sessions and the type of comparator.

Section Summary: Neck and/or Shoulder Pain

A number of RCTs and systematic reviews of these studies have evaluated dry needling of myofascial trigger points for neck and/or shoulder pain... A systematic review of techniques for myofascial pain included 15 studies of dry needling for neck or shoulder pain published through 2017. Studies had multiple methodological limitations, and the reviewers concluded

that the evidence for dry needling was not greater than placebo. In more recent systematic reviews and meta-analyses, dry needling was not associated with clinically important reductions in shoulder or neck pain when compared toother physical therapy modalities.

Dry Needling of Myofascial Trigger Points Associated with Plantar Heel Pain

Review of Evidence

Systemic Review

Cotchett et al (2010) reported on a systematic review of dry needling and injections of myofascial trigger points associated with plantar heel pain.[6] Three quasi-experimental trials were identified: two evaluated dry needling plus acupuncture and a third evaluated lidocaine injections plus physical therapy. The methodologic quality of the trials was rated as poor and meta-analysis was not conducted due to heterogeneity among trials.

Randomized Controlled Trials

Two RCTs, both published after the systematic review, are described next. Cotchett et al (2014) reported on a double-blind, sham-controlled randomized trial of trigger point dry needling for plantar heel pain.[7] Patients (n=84) with plantar heel pain for 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 scores at 6 weeks) were measured in 81 (96.4%) patients. The group given dry needling had statistically significant greater reduction in first step pain and foot pain (adjusted mean difference, 14.4 mm on a 100-mm visual analog scale [VAS] and 10.0 points on the Foot Health Status Questionnaire) but the magnitude of change did not meet the prespecified minimally important difference 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. The number needed to harm was three. 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 the lack of reporting response rates (i.e., the percentage of patients who experienced improvement on the primary outcome measures that was equal to or greater than the prespecified minimally important difference).

Eftekharsadat et al (2016) published a single-blinded RCT evaluating 20 patients with plantar fasciitis in Iran.[8] Patients with plantar heel pain for at least one month in duration were assigned to treatment with dry needling (n=10) or usual care (n=10). The intervention group received one dry needling session of myofascial trigger points per week for four weeks. Also, all patients were instructed in stretching exercises and were administered anti-inflammatory medication. The primary outcomes-pain on a 100-point VAS, and ROM of the ankle joint in dorsiflexion and plantar extension-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 scores, 3.0 vs. 3.5; $p=0.36$, respectively). Moreover, there was no significant between-group difference in ROM of the ankle joint in dorsiflexion and plantar extension scores at the end of the intervention or at four weeks postintervention. Adverse events were not reported.

Section Summary: Plantar Heel Pain
The evidence base consists of a systematic review of quasi-experimental studies and two RCTs. The systematic review rated the quality of the studies it assessed as poor. One randomized trial was double-blind and sham-controlled; it found a statistically significantly greater reduction in pain in the dry needling group compared with sham, but the difference was not clinically significant (i.e., did not reach the prespecified minimally important difference). The other, a single-blind trial comparing dry needling with usual care, found significantly greater reductions in pain at the end of active treatment but not at the follow-up one month later. Moreover, ROM outcomes did not differ significantly between groups at either time point. To date, research has not demonstrated a statistical and clinical benefit of dry needling. Additional RCTs, especially those with a sham-control group, would strengthen the evidence base.

Dry Needling of Myofascial Trigger Points Associated with Temporomandibular Pain

Review of Evidence

Randomized Controlled Trials
A double-blind, sham-controlled trial of dry needling for the treatment of temporomandibular myofascial pain was reported by Diracoglu et al (2012).[9] 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 three weeks. The sham condition involved dry needling in areas away from the trigger points. Patients were evaluated one 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). Also, 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/cm^2) than in the control group (2.75 kg/cm^2; p<0.001).

Section Summary: Temporomandibular Myofascial Pain
One RCT evaluating dry needling for the treatment of temporomandibular myofascial pain was identified; this trial was double-blind and sham-controlled. One 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. This single RCT does not provide sufficient evidence on which to draw conclusions about the impact of dry needling on health outcomes in patients with temporomandibular myofascial pain.

Adverse Events
A prospective survey (2014) of 39 physical therapists, providing 7629 dry needling treatments, reported 1463 (19.18%) mild adverse events (bruising, bleeding, pain) and no serious adverse events.[10]

Summary of Evidence
For individuals who have myofascial trigger points associated with neck and/or shoulder pain who receive dry needling of trigger points, the evidence includes RCTs and systematic reviews. The relevant outcomes are symptoms, functional outcomes, QOL, and treatment-related morbidity. A systematic review of techniques to treat myofascial pain included 15 studies of dry needling for neck or shoulder pain published through 2017. Studies had multiple

methodological limitations, and the reviewers concluded that the evidence for dry needling was not greater than placebo. In more recent systematic reviews and meta-analyses, dry needling was not associated with clinically important reductions in shoulder or neck pain when compared to other physical therapy modalities. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

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. The relevant outcomes are symptoms, functional outcomes, QOL, and treatment-related morbidity. The systematic review, which included three quasi-experimental studies, rated study quality as poor. One RCT was double-blind 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 (i.e., it did not meet the prespecified minimally important difference). The other RCT, a single-blind 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 one month later. Moreover, ROM 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 that the technology results in the net health outcome.

For individuals who have myofascial trigger points associated with temporomandibular myofascial pain who receive dry needling of trigger points, the evidence includes an RCT. The relevant outcomes are symptoms, functional outcomes, QOL, and treatment-related morbidity. One double-blind, sham-controlled randomized trial was identified; it found that one 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 that the technology results in the net health outcome.

SUPPLEMENTAL INFORMATION

Practice Guidelines and Position Statements

American Physical Therapy Association

An educational resource paper by the American Physical Therapy Association (2012) defined dry needling as “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.”[12]

The Association (2013) 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.[1]

American Academy of Orthopaedic Physical Therapists
The American Academy of Orthopaedic Physical Therapists (2009) issued a statement that dry needling fell within the scope of physical therapist practice.[11] In support of this position, the Academy stated that "dry needling is a neurophysiological evidence-based treatment technique that requires effective manual assessment of the neuromuscular system…. 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."

Ongoing and Unpublished Clinical Trials
A search of ClinicalTrials.gov in December 2021 did not identify any ongoing or unpublished trials that would likely influence this review.

Government Regulations

National:
There is no national coverage determination on dry needling of trigger points for myofascial pain.

Local:
There is no local coverage determination on dry needling of trigger points for myofascial pain.

There is a LCD on Trigger Points, Local Injections (L34588, for services on or after 09/30/2021) which addresses only injections and not dry needling.

(The above Medicare information is current as of the review date for this policy. However, the coverage issues and policies maintained by the Centers for Medicare & Medicare Services [CMS, formerly HCFA] are updated and/or revised periodically. Therefore, the most current CMS information may not be contained in this document. For the most current information, the reader should contact an official Medicare source.)

Related Policies

- Myofascial Trigger Point Injections-Dry Needling. Retired 07/01/15.

References

1. American Physical Therapy Association (APTA). Dry Needling. n.d.; https://www.apta.org/patient-care/interventions/dry-needling. Accessed December 7, 2021.
2. Alvarez DJ, Rockwell PG. Trigger points: diagnosis and management. Am Fam Physician. Feb 15 2002; 65(4):653-60. PMID 11871683
3. Charles D, Hudgins T, MacNaughton J, et al. A systematic review of manual therapy techniques, dry cupping and dry needling in the reduction of myofascial pain and myofascial trigger points. J Bodyw Mov Ther. Jul 2019; 23(3):539-546. PMID 31563367
4. Navarro-Santana MJ, Sanchez-Infante J, Fernandez-de-Las-Penas C, et al. Effectiveness of Dry Needling for Myofascial Trigger Points Associated with Neck Pain Symptoms: An Updated Systematic Review and Meta-Analysis. J Clin Med. Oct 14 2020; 9(10). PMID 33066556

5. Navarro-Santana MJ, Gomez-Chiguano GF, Cleland JA, et al. Effects of Trigger Point Dry Needling for Nontraumatic Shoulder Pain of Musculoskeletal Origin: A Systematic Review and Meta-Analysis. Phys Ther. Feb04 2021; 101(2). PMID 33340405
6. Cotchett MP, Landorf KB, Munteanu SE. Effectiveness of dry needling and injections of myofascial trigger points associated with plantar heel pain: a systematic review. J Foot Ankle Res. Sep 01 2010; 3: 18. PMID 20807448
7. Cotchett MP, Munteanu SE, Landorf KB. Effectiveness of trigger point dry needling for plantar heel pain: a randomized controlled trial. Phys Ther. Aug 2014; 94(8): 1083-94. PMID 24700136
8. Eftekharsadat B, Babaei-Ghazani A, Zeinolabedinzadeh V. Dry needling in patients with chronic heel pain due to plantar fasciitis: A single-blinded randomized clinical trial. Med J Islam Repub Iran. 2016; 30: 401. PMID 27683642
9. Diracoglu D, Vural M, Karan A, et al. Effectiveness of dry needling for the treatment of temporomandibular myofascial pain: a double-blind, randomized, placebo controlled study. J Back Musculoskelet Rehabil. 2012; 25(4):285-90. PMID 23220812
10. Brady S, McEvoy J, Dommerholt J, et al. Adverse events following trigger point dry needling: a prospective survey of chartered physiotherapists. J Man Manip Ther. Aug 2014; 22(3): 134-40. PMID 25125935
11. American Academy of Orthopaedic Physical Therapists. AAOMPT position statement on dry needling. 2009; http://aaompt.org/Main/About_Us/Position_Statements/Main/About_Us/Position_Statements.aspx?hkey=03f5a333-f28d-4715-b355-cb25fa9bac2c. Accessed December 7, 2021.
12. American Physical Therapy Association (APTA). Physical Therapists and the Performance of Dry Needling. 2012; http://www.apta.org/StateIssues/DryNeedling/ResourcePaper/. Accessed December 7, 2021.

The articles reviewed in this research include those obtained in an Internet based literature search for relevant medical references through December 2021, the date the research was completed.

Joint BCBSM/BCN Medical Policy History

Policy Effective Date	BCBSM Signature Date	BCN Signature Date	Comments
02/24/03	02/24/03	02/14/03	Joint policy established titled Myofascial Trigger Points
03/21/05	03/21/05	02/28/05	Routine maintenance; policy retired.
07/01/15	04/21/15	05/08/15	Policy taken out of retirement, added information on dry needling, also added to title. Policy re-retired.
5/1/20	2/18/20		Unretired, completely rewritten with focus on dry needling. Remains as E/I service.
5/1/21	2/16/21		Routine maintenance. Reference 4 added. Policy statement unchanged. Title changed from “Dry Needling of Myofascial Trigger Points” to “Dry Needling of Trigger Points for Myofascial Pain”.
5/1/22	2/15/22		Routine maintenance. References added; some references removed. Policy statement unchanged.

Next Review Date: 1st Qtr. 2023

Pre-Consolidation Medical Policy History

Original Policy Date	Comments
BCN:	Revised:
BCBSM:	Revised:

BLUE CARE NETWORK BENEFIT COVERAGE
POLICY: DRY NEEDLING OF TRIGGER POINTS FOR MYOFASCIAL PAIN

I. Coverage Determination:

Commercial HMO (includes Self-Funded groups unless otherwise specified)	Not covered
BCNA (Medicare Advantage)	See government section
BCN65 (Medicare Complementary)	Coinsurance covered if primary Medicare covers the service.

II. Administrative Guidelines:

- The member's contract must be active at the time the service is rendered.
- Coverage is based on each member's certificate and is not guaranteed. Please consult the individual member's certificate for details. Additional information regarding coverage or benefits may also be obtained through customer or provider inquiry services at BCN.
- The service must be authorized by the member's PCP except for Self-Referral Option (SRO) members seeking Tier 2 coverage.
- Services must be performed by a BCN-contracted provider, if available, except for Self-Referral Option (SRO) members seeking Tier 2 coverage.
- Payment is based on BCN payment rules, individual certificate and certificate riders.
- Appropriate copayments will apply. Refer to certificate and applicable riders for detailed information.
- CPT - HCPCS codes are used for descriptive purposes only and are not a guarantee of coverage.
- Duplicate (back-up) equipment is not a covered benefit.