Dry Needling Overview

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No relevant financial or nonfinancial relationships exist
About Me

- Merrill High School 2003
- UW-Madison 2007
  - Kinesiology-Exercise Science
- UNC-Chapel Hill 2010
  - Doctor of Physical Therapy
- Gillette Children’s- St. Paul, MN
- Merrill Physical Therapy 2011
- Certification in Functional Dry Needling from Kinetacore 2014
- Board Certified Specialist in Orthopaedic Physical Therapy June 2016
Goal/Objectives

Goal: To improve the clinician’s ability to discuss dry needling as a treatment option with their patient, and appropriately identify/refer patients with musculoskeletal pain and/or dysfunctional movement patterns for dry needling treatment.

Objectives:
1. Describe Dry Needling in plain language to a patient.
2. Differentiate dry needling from traditional Chinese acupuncture.
4. Appropriately prescribe dry needling as one component of the patient’s physical therapy treatment plan.
What is Dry Needling?

APTA: 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.¹

Federation of State Boards of Physical Therapy: Dry Needling (Intramuscular Manual Therapy) is a technique using the insertion of a solid filament needle, without medication, into or through the skin to treat various impairments including, but not limited to: scarring, myofascial pain, motor recruitment and muscle firing problems. Goals for treatment vary from pain relief, increased extensibility of scar tissue to the improvement of neuromuscular firing patterns.²

Physiologic effects of dry needling supported in the literature include increased blood flow to tissues, decreased muscle banding, Decreased spontaneous electrical activity, biochemical changes, and CNS changes¹-⁵
What can go through a patient’s mind when you say the words “dry needling”
What is Dry Needling?

For your patient:

“Dry needling is a procedure where a very small needle is inserted into a muscle or scar tissue in order to decrease pain and improve movements that may be painful or dysfunctional”

“How small is the needle????”

“Similar to a needle used in acupuncture”

“Oh….So it’s like acupuncture”
Dry Needling vs. Acupuncture

FSBPT Resource paper definition (from Delaware and Florida statutes)²

"Acupuncture" refers to a form of health care, based on a theory of energetic physiology that describes and explains the interrelationship of the body organs or functions with an associated acupuncture point or combination of points located on "channels" or "meridians." Acupuncture points shall include the classical points defined in authoritative acupuncture texts and special groupings of acupuncture points elicited using generally accepted diagnostic techniques of oriental medicine and selected for stimulation in accord with its principles and practices. Acupuncture points are stimulated in order to restore the normal function of the aforementioned organs or sets of functions. Acupuncture shall also include the ancillary techniques of oriental medicine including moxibustion, acupressure or other forms of manual meridian therapy and recommendations that include oriental dietary therapy, supplements and lifestyle modifications according to the principles of oriental medicine.

Moxibustion-burning of dried mugwort
Dry Needling vs. Acupuncture

Same tool...different technique as well as different background/training

Similar comparison: thrust manipulation vs. chiropractic adjustment

No single tool or technique defines a profession\(^1,2\)
Can any physical therapist perform DN?

Most, but not all, states allow physical therapists to perform dry needling as part of their scope of practice\(^1\)

Within physical therapist’s scope of practice in Wisconsin,

- need to have documentation of proper education/training

Multiple companies provide training/continuing education for therapists to become “certified”, can go through multiple “levels” of training to learn more advanced techniques
**Who is an appropriate patient for DN**

<table>
<thead>
<tr>
<th>Indications</th>
<th>Contraindications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Musculoskeletal pain/dysfunction Including:</td>
<td>Inadequate knowledge/training</td>
</tr>
<tr>
<td>Tendonitis/tendinopathy</td>
<td>Consent denied</td>
</tr>
<tr>
<td>Muscle strains</td>
<td>1st trimester pregnancy</td>
</tr>
<tr>
<td>IT band syndrome</td>
<td>Nipples, umbilicus, genitalia</td>
</tr>
<tr>
<td>P-F pain/dysfunction</td>
<td>Uncontrolled anticoagulant usage**</td>
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<tr>
<td>Plantar fasciitis</td>
<td>Compromised immune system</td>
</tr>
<tr>
<td>Neck Pain/Tension-type Headaches</td>
<td>Local infection or active tumor</td>
</tr>
<tr>
<td>Rotator cuff impingement</td>
<td>Hx of Lymph node removal**</td>
</tr>
<tr>
<td>Carpal tunnel syndrome</td>
<td>Area over cardiac pacemaker</td>
</tr>
<tr>
<td>SI joint dysfunction</td>
<td>Over ribcage/thoracic spine (lung field)**</td>
</tr>
</tbody>
</table>
Who is an appropriate patient for DN

Precautions⁴

- Needle aversion/phobia
cognition/communication issues
- Avoid Local skin lesions
- Severe hyperalgesia/allodynia
- Metal allergies**
- Controlled anticoagulants (INR 2-3)
- Vascular disease
- Post surgical patients → always consult with surgeon even if intended area of dry needling is not near surgical site

Risks/Complications⁴

- **Common (1-10%)**
  - Needle insertion pain, muscle soreness, fatigue, bruising
- **Uncommon (.1-1%)**
  - Aggravation of symptoms, lightheadedness/dizziness, stuck or bent needle, headache
- **Rare (0.1-.1%)**
  - Infection, pneumothorax
- **Less than .01%**
  - Vasovagal response, fainting, forgotten needle, nausea/vomiting, neurological response, emotional response
Incorporating dry needling into a patient’s therapy plan of care

Exam Considerations:

- History- Identify potential contraindications/precautions, Patient’s problems and goals, develop rapport with patient

- Screening/Exam- Functional Movement Screen can be helpful tool to identify painful/dysfunctional movement patterns and guide areas of further investigation, allow for nice pre/post treatment assessment

- Presentation of Dry needling as one option and letting patient decide on best course of treatment for them

*I do not recommend/discuss dry needling with all of my patients, only those I feel would benefit.*
Incorporating dry needling into a patient’s therapy plan of care

Procedure:

1. Clean technique: area properly draped, cleaned with alcohol, gloves/hand sanitizer, sterile needles

2. Insertion of needle, palpating muscle for changes/local twitch response in the trigger point

3. Electrical stimulation can be incorporated with point stimulator (2-4Hz for nociceptive pain, 80-100 Hz for neuropathic pain)

4. Segmental stimulation can be beneficial where possible (example: C7 paraspinals with wrist extensors, L5 with hamstrings)
Incorporating dry needling into a patient’s therapy plan of care

Dry Needling as ONE component of PT plan of care:

- Manual therapy (especially after DN treatment)
- Therapeutic exercises, emphasis on corrective exercises to restore normal movement patterns
- Therapeutic activities to incorporate normalized movement patterns into functional activities
- Home exercise program
- Other modalities to supplement dry needling (usually done 1x/week), or for those patients who decide not to pursue or continue DN
Prescribing Dry Needling Treatment

If you and your patient feel that dry needling might be an appropriate treatment for their musculoskeletal issue and/or movement dysfunction...

“Physical Therapy Eval & Treat”

Keep diagnosis general

“Consider Dry Needling as indicated”
Patient Cases
Patient V.V.

**History/Exam Info**

62 year old female, retired teacher but works part time as as substitute, low blood pressure, acoustic neuroma, history of seizures but with medications hasn’t had one in last 10+ years. Presently is a healthy and active person.

Primary complaint: L plantar heel pain, top 3 problems listed were 1. Walking  2. Walking  3. Walking

Initially not interested in dry needling....treated with stretching, manual therapy, ultrasound, HEP

Few symptoms after 10 visits but still had some soreness with first steps in morning.

Went to Florida for 1 month, symptoms returned while on her trip affected her ability to walk on beach while on trip, which she loves to do with her husband.

Receptive to Dry needling treatment upon return from her trip and after 1-2 more visits of “traditional” PT
Patient V.V.

**Evidence to support dry needling for this condition**

2014 Physical Therapy Journal published a Randomized Controlled Trial

84 participants with 1 month Hx of plantar heel pain, placed in either real or sham dry needling groups

- Soleus, Gastroc, quadratus plantae most commonly found/treated trigger points, but also FDB, FHL, Abductor hallucis, Abductor digiti minimi,

Treated 1x/week for 6 weeks, followed for 12 weeks

**Results:** Improved pain with 1st step measured with visual analog scale, as well as improved score on pain subscale of Foot Health Status Questionnaire.

***Frequency of minor transitory adverse effects was 32% in treatment group compared to <1% in sham group***
Patient V.V.

**Treatment performed/Results**

Dry needling performed to Gastroc and Soleus, along with S1 multifidi/paraspinals, stimulation utilized in all areas.

After 2 visits of dry needling patient had no pain with walking during day and no pain with first steps in morning.

Seen 3 more visits over next month, work on balance exercises with no recurrence of heel symptoms, Discharged to home stretching program.
Patient S.W.

History/Exam Info

46 year old male employed as surgical assistant, History of asthma

R lateral forearm and elbow pain with quick movements, “achy and sore” at end of workday, occasional pain in back of hand as well as 3rd and 4th fingers

- Trigger points palpated in ECRL, ECRB, Extensor digitorum, tender at lateral epicondyle and common extensor tendon

- Negative Spurling’s test and cervical AROM as well as PROM with overpressure all normal and pain free

Interferes with hobbies of bowling and hockey
Patient S.W.

Patient S.W.

**Treatment Performed/Results**

1 Visit Dry Needling with electrical stimulation to ECRB, ECRL, Ext. Digitorum. Instructed pt in stretching exercises as well as eccentric exercises for wrist extensors.

Patient’s wife currently attends therapy, updated that he has no forearm/elbow pain since treatment ~3 months ago.
Patient D.B.

**History/Exam Info**

58 year old female with History of Fibromyalgia, cervical and lumbar DDD, High BP, history of MI with CABG, history of R shoulder RC repair

Medications for pain included Hydrocodone-acetaminophen and Lidoderm patches, patient’s preference is to manage pain without medications/narcotics as much as possible

Right side neck/upper trapezius pain with trigger points, limited cervical and shoulder ROM on R side, Occasional HA, occasional UE paresthesias, UE strength grossly 4+ / 5. Strength testing mostly limited by pain.
Evidence to support dry needling for this condition

JOSPT published Systematic Review of effectiveness of dry needling for upper quarter myofascial pain in September 2013

12 RCTs selected and meta-analysis performed

Recommended dry needling over sham or placebo for reducing pain immediately as well as at four weeks post treatment

2 studies found evidence that lidocaine injections may be more effective than dry needling
Patient D.B.

**Treatment Performed/Results**

Dry needling: Upper trapezius bilaterally, C6-7 multifidi with point stimulator

Stimulated muscles individually as well as simultaneously

Improved pain by 50%, with relief lasting several weeks at a time, improved cervical ROM and shoulder mobility as a result of decreasing tension and trigger points in upper trapezius

Patient also received manual therapy to cervical and thoracic spine, therapeutic exercises to address strength in back, neck, shoulder musculature and ROM/flexibility impairments, as well as a home exercise program
Thanks!

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REFERENCES


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