Intra-Muscular Manual Therapy: Dry Needling
An Overview of this Unique Modality

Objectives
1. Discern the differences between acupuncture & dry needling as alternative medical treatments.
2. Who can use it & Where can it be used? How do you Bill for it?
   - Correctly identify the necessary guidelines and training to performing dry needling as a physical therapist.
3. Understand the different theories and mechanisms behind the use of dry needling.
4. Understand the current evidence in order to apply dry needling in clinical practice.

What is it?
- 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 tissue, to the improvement of neuromuscular firing patterns.
  - FSBPT 2013
- “Intramuscular manual therapy, trigger point dry needling, or intramuscular needling”
- 2011: advocated using dry needling as the term of choice. (FSBPT)

What it is NOT: Acupuncture
- “Acupuncture” means a form of primary health care, based on traditional Chinese medical concepts and modern oriental medical techniques
  - Employs acupuncture diagnosis and treatment, as well as adjunctive therapies and diagnostic techniques, for the promotion, maintenance, and restoration of health and the prevention of disease.
  - Treat blockages existing within the body that can be restored by properly placing needles along energy channels called meridians.
  - Most schools take about 3-4 years
  - Master’s degree in acupuncture or Oriental medicine

Why are they often confused?
- Dry needling is presently performed by physical therapists and chiropractors using the same solid, filiform needles as acupuncturists.
  - They look very similar to the consumer and are often mislabeled when reported to peers.
  - PT’s:
    - Do not and cannot claim to practice acupuncture
    - Do not use acupuncture traditional Chinese medicine theories, meridian acupoints and terminology
    - Do not use acupuncture diagnosis like tongue and pulse
    - Do not use dry needling to address things such as fertility, smoking cessation, allergies, depression or other non-neuro-musculoskeletal conditions
  - Overall, an important distinction is that acupuncture is an entire discipline and profession where as dry needling is merely one technique which should be available to any professional with the appropriate background and training.
  - (NAPL PT)

Who Can Perform it?
- FSBPT 2013: States that allow dry needling are only allowing it to be performed by licensed physical therapists and not the support personnel.
  - Is specifically controlled by the state practice act related to one’s profession
  - The state practice act defines the performance of dry needling.
  - Each state has defined what the requirements will be in that state.
  - As Texas has no official position: no requirements are available at this time
- KinetaCore requires a minimum of one year of experience treating patients while licensed.
  - Accepted: Physical Therapists, Medical Doctors, Doctors of Osteopathy, Physician Assistants, Doctors of Chiropractic or Nurse Practitioners.
  - Not Accepted: Athletic Trainers, Acupuncturists, Massage Therapists, Occupational Therapists.
**APTA Position Statement: Jan 2012 - 14**

- ‘Dry Needling is an invasive technique used by physical therapists (where allowed by state law) to treat myofascial pain that uses a dry needle, without medication or injection, which is inserted into areas of the muscle known as trigger points.’
  - Preliminary 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.

- As of March 2014, the APTA Board of Directors has now formally listed dry needling within the scope of practice.

- “Physical therapy, which is limited to the care and services provided by or under the direction and supervision of a physical therapist, includes: Alleviating impairment and functional limitation by designing, implementing, and modifying therapeutic interventions that include, but are not limited to: dry needling”

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**Definition and Technique**

**APTA Public Policy, Practice, and Professional Affairs Unit 2014**

- Practitioners who seek to bill any third party payer should first check the payer’s coverage policy to determine if dry needling is a covered service and if the policy specifies which code is used to report the service.
  - Absent a specific payer policy, the use of CPT code 97740 for the performance of dry needling should not be utilized.

- Currently, there is no CPT code that describes dry needling nor do any of the existing CPT codes include dry needling techniques in clinical vignettes utilized by AMA in their process to establish relative value units.

- CPT specifically states to select the procedure or service that accurately identifies the service performed.
  - Do not select a CPT code that merely approximates the service provided.

- If no such specific code exists, then report the service using the appropriate unlisted physical medicine/rehabilitation service or procedure code 97799”

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**USA- Dry Needling -**

Texas does not have an official position and is legally not allowed to offer advisory opinions; however, the board has made no determination that dry needling is outside the scope of practice for PTs.

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**Billing**

- The quick answer for this is YES, we can bill for Dry Needling.
  - However, payment is dependent on your specific insurance contracts and on the state in which you practice.
    - Billing Insurance
    - Fee for Service

- Must include in the POC
  - Notify Physician if they are unfamiliar

- The APTA recently published remarks about the inappropriate use of the CPT’s NMR/Manual for Dry Needling

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**AMERICAN ACADEMY OF ORTHOPAEDIC MANUAL PHYSICAL THERAPISTS (AAOMPT)**

Dry Needling: (10/17/09)

POSITION: It is the Position of the AAOMPT Executive Committee that dry needling is with the scope of physical therapist practice.

SUPPORT STATEMENT:

- "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.”
What are Trigger Points

- Inflammatory mediators
- Reduced pH
- Neuropeptides
- Cytokines
- Catecholamines

Second: How Do They Form?

- The cause is usually multi-factorial:
  - Overworking or overstretching muscles with activity
  - Poor Posture leading to chronic elongation
  - Muscular maladaptation or misuse related to firing patterns
  - Direct Trauma or reflexive protection after an injury
- Blood supply is restricted due to the holding state which leads to accumulation of metabolic waste (notably hydrogen ions) which further the acidic environment and increase nociceptive sensory input.
- EMG studies have shown the MTrP is “kind of like buzzing with uncontrolled electrical activity” which causes the muscle to feel tight and can restrict motion.

Third: Is It Right for You?

- FDN (Functional Dry Needling) can be used for a variety of musculoskeletal pathologies:
  - Neck/Back/Shoulder MTrP pain
  - Headaches
  - Tennis/Golfer’s Elbow
  - Hip/Buttock/Leg or “Sciatica” MTrp Pain
  - Jaw or TMJ pain
  - Whiplash
  - Carpal Tunnel
  - Etc.

What’s the Process?

Insertion of needle
- Active TrP = Painful
- Normal muscle = painless

Technique: as described by Dommerholt
1. Palpate an active trigger point
2. Clean the area via
3. Place a solid filiform sterile needle into the trigger point
4. Withdraw the needle from the muscle but not from the skin.
5. Change direction of the needle and bring it back into the same area to get more and more twitch responses
6. The muscle will “grasp” the needle in what can be described as a cramping sensation
7. Elicit twitch responses until they are no longer present.

Proposed Response

- Local:
  - CGRP (calcitonin gene-related peptide) release
  - This promotes vasodilation and formation of new blood vessels
- Segmental:
  - Stimulation of small myelinated nerves = Enkephalin
  - Pain blocking and modulating peptide
- Systemic:
  - Beta-Endorphin released
  - Analgesic effect

Does It Hurt?

- FDN responses can be extremely varied and individual
- Typically will not feel the needle enter the skin

Various Responses Include:
- “Pressure” over the area
- “Cramping” sensation
- “Good Pain”
- Surprising type discomfort
- Sweating or dizziness or Nausea
- Bruising and Soreness
Typically, a positive response takes ~ 0-2 days

- This can be longer in chronic conditions
- It may take multiple sessions to achieve a cumulative effect

After the first session:
- Expect to feel sore (like a hard workout or long run) in that area
- Ice and topical ointments can help with the soreness
- Stretching is OK, avoid strenuous activity

After subsequent sessions:
- Expect less soreness and faster improvement of symptoms
- Can and should begin to complete activity or exercises same day

**Take Home Message**

- “Remember that trigger points are rarely an isolated phenomenon, and the key to successful long-term outcomes of any treatment regime is addressing the precipitating and predisposing factors for each particular person.”

**Dry Needling – The Evidence**

- *Cummings et al., 2001* - Needling Therapies in the Management of Myofascial Trigger Point Pain: A Systematic Review
  - Reviewed 23 studies
  - Included if some form of needling therapy was used to treat musculoskeletal trigger points
  - Concluded that direct needling of myofascial TP is an effective treatment

- *Karacurum et al., 2001* - The dry needle technique: intramuscular stimulation in tension type headache
  - Dry needling (vs. placebo needling) resulted in significant improvement in pain and neck range of motion in patients with tension headaches
**Muscle Trigger Point Biochemistry**

- Shah, 2008
  - 9 Subjects
  - UT Active, latent, normal
  - Method
    - Microdialysis needle analysis
  - Results
    - Analyt concentrations were high in active MTPs compared to latent MTPs and normals

**Motor End Plate Hypothesis**

- Abnormality of motor end plate is a causative factor due to trigger point
  - Increased acetylcholine release results in spontaneous electrical activity (SEA)
  - Ongoing depolarization and contraction of muscle

**Energy Crisis Theory**

- Injury to muscle causes calcium release
  - Sarcomere shortens
    - Increased metabolic demand and compromise of local circulation
  - Recovery is compromised
    - Prolonged shortening of muscle fibers