

# Dry Needling

## Let's Get To The Point

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Maggie Hanna PT, DPT

# Clinical Questions:

- What is Dry Needling (DN)?
- Are there other names for Dry Needling?
- What are trigger points and what can cause them to form?
- How did Dry Needling come about?
- Does North Carolina have state specific regulations?
- Are Dry Needling and acupuncture the same treatment?
- Are there risks to Dry Needling?
- When should the provider start thinking “Dry Needling” as a treatment option?
- What are the absolute contraindications and relative contraindications to DN?
- What patient education should be performed by every PT/PTA before being scheduled for DN?
- If a patient can't get scheduled for DN, what techniques can be employed in the mean-time?





# Dry Needling Definition

- A skilled intervention 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.
  - Treat dysfunctions in skeletal muscle, fascia, and connective tissue
  - Diminish persistent peripheral nociceptive input
    - Decrease pain
  - Reduce/Restore impairments of body structure
    - Increase ROM
  - Improve patient functional activity and participation
    - Improve the coordination of tissue activation

# Other Names For Dry Needling

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- Intramuscular Manual Therapy (IMT)
- Functional Dry Needling (FDN)
- Trigger Point Dry Needling (TDN)
- Intramuscular Stimulation (IMS)

# Myofascial Trigger Points MTrP's (Palpable Taut Bands AKA "knots" )

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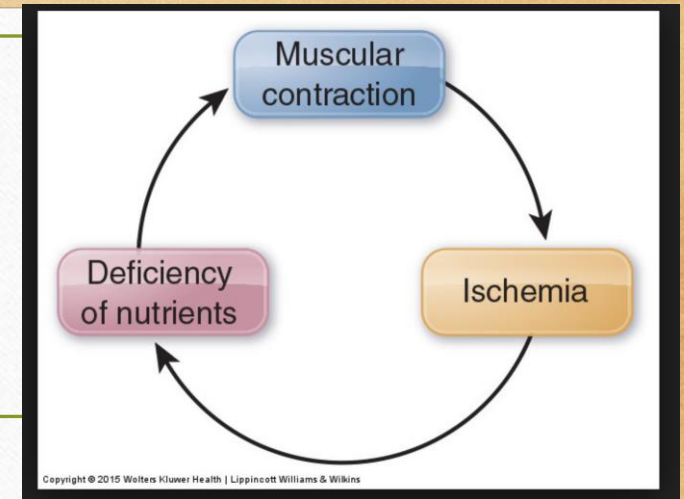
- MTrP's are physiological contractures characterized by local ischemia, hypoxia, lowered pH, chemically altered environment, local and referred pain, and altered muscle activation patterns
- MTrP's are associated with dysfunctional motor end plates, presence of end plate noise, and increased release of acetylcholine
- Increase peripheral and central sensitization

APTA Public Policy , Practice, and Professional Affairs, February 2013

Mechanism of Myofascial Pain, 2014



# Cyclical Mechanism of MTrP formation

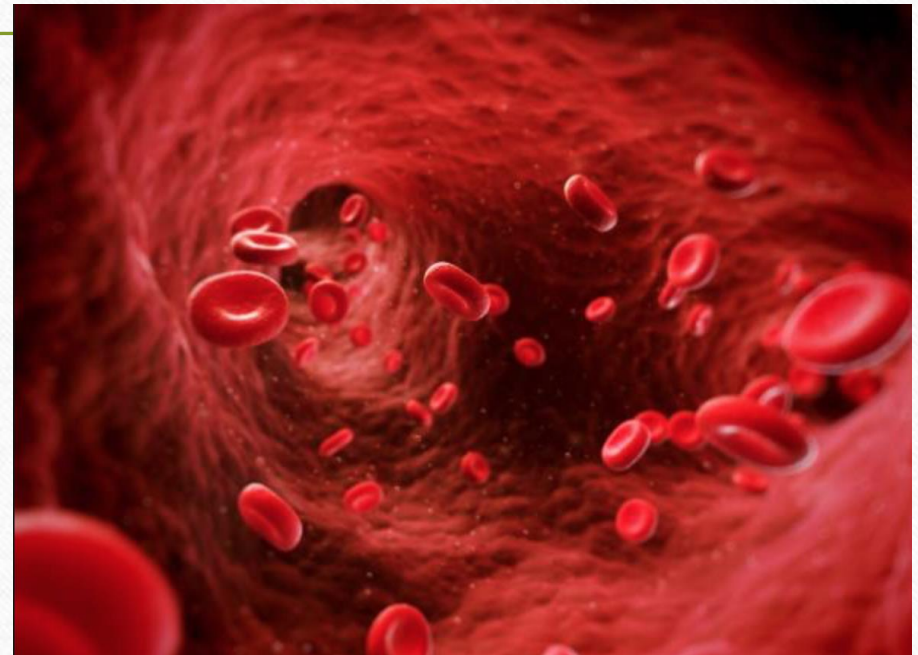


- Abnormal acetylcholine presence
  - The clearance of acetylcholine from the synaptic cleft “resets the muscle tissue” and allows the ability for another activation to occur
- Increased fiber tension and reduced blood flow
- Local hypoxia to tissue → ATP demand and less ATP supply → tissue distress
- Release of sensitizing substances (bradykinins, cytokines, substance p) which activate nociceptors
- Autonomic modulation → the cycle starts over

Mechanism of Myofascial Pain, 2014

# What DN Does To Stop The Cycle

- Insertion of needle into the trigger point causes a “twitch response”
- The muscle relaxes after the “twitch response” and allows microcirculation
- Release the chemicals that have built up in the muscle: “re-sets” the muscle
- Dry needling also improves blood flow to the area



Physiologic Effects of Dry Needling, 2013  
Dry Needling: A Literature Review, 2014

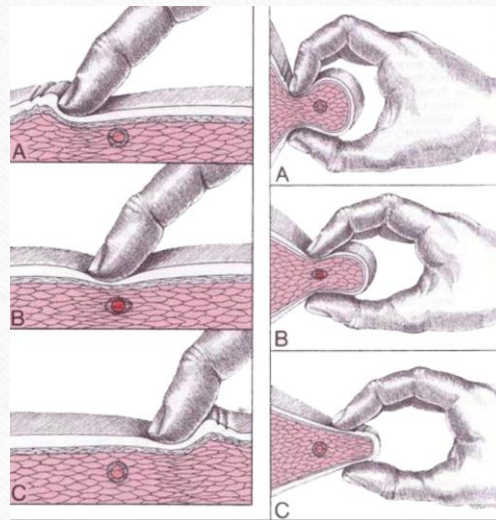


# Active Trigger Point vs Latent Trigger Point

For treatment of myofascial trigger points MTrP's

- Active Trigger Point

- Symptomatic:  
“THE patient’s  
pain”
- Spontaneously  
painful with or  
without palpation



- Latent Trigger Point

- Can cause movement  
impairments
- Painful only when  
palpated



# Causes of Trigger Points

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- Poor posture/positioning
- Overuse
- High stress
- Repetitive overload to the muscle tissue/deconditioned muscle
- Fatigue
- Adhesions from previous trauma (scar tissue)
- Must be non-inflammatory in nature
  - If taking NSAIDS and doesn't help reduce pain → DN

Etiology of Myofascial Trigger Points, 2012

Dry Needling For Myofascial Trigger Point Pain 2015

# Evolution of Dry Needling

- 1942 Janet Travell published the method of injection into Myofascial Trigger Points (Travell & Herman JAMA, 1942) Injection: procaine
- 1979 Karel Lewit: deemed anesthetic as not important: “the needle effect” (Lewit, Pain, 1979)



\*Confirmed no difference between needling with or without an injection by systematic review  
(Cummings & White, Phys Med and Rehab, 2001)



# North Carolina History with Dry Needling

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- 2010 NC Board of PT Examiners stated Dry Needling is within PT scope of practice, requires a PT license, and 54 hours of CEU training
- NC Acupuncture Licensing Board (NCALB) sent cease-desist letters to physical therapists to stop dry needling
- 2011 Letters sent between NC Acupuncture Licensing Board (NCALB) and Attorney General of NC to set regulations
- January 2015 NCBPTE (NC Board of Physical Therapy Examiners) rules were defeated by acupuncture opposition (and position statement was removed)
- September 2015 NCALB sued NCBPTE in state court
- October 2015 NCPTA sued NCALB in federal court alleging anti-trust violations

## Current Status of DN in NC:

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As of 12/7/2018 dry needling  
is within the scope of physical  
therapy practice!

### North Carolina Supreme Court Rules on Dry Needling Case

*Dear fellow NCPTA member,*

For several years, the NCPTA and the North Carolina Board of Physical Therapy Examiners have each been involved in separate lawsuits with the North Carolina Acupuncture Licensing Board to protect patients' access to dry needling. Today, I am pleased to report a tremendous court victory.

On December 7, in litigation initiated by the Acupuncture Board against the Physical Therapy Board, the North Carolina Supreme Court confirmed the Physical Therapy Board's conclusion that dry needling is within the scope of practice of physical therapy in North Carolina. The court's opinion can be found at this [link](#). All seven supreme court justices were unanimous in their decision. The North Carolina Supreme Court is the state's highest court, and the Acupuncture Board cannot appeal the decision.

This is obviously a significant decision in favor of protecting patients' access to care. The NCPTA remains exceptionally grateful for the support that you--our members--have shown in this long-running fight.

Sincerely,



J. Kyle Covington  
NCPTA President



# Current Status of DN in the U.S.

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- DN is within scope of PT practice in the following states:
  - Alabama, Arizona, Colorado, the district of Columbia, Georgia, Iowa, Kentucky, Maryland, Mississippi, Montana, Louisiana, Massachusetts, Nevada, New Hampshire, New Mexico, North Carolina, Ohio, Oregon, South Carolina, Tennessee, Texas, Virginia, West Virginia, Wisconsin and Wyoming.
- DN is NOT within the scope of PT practice in the following states:
  - Idaho, Kansas, New York, South Dakota

# Dry Needling vs. Acupuncture

same needles but different treatment

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- **Dry Needling**

- Developed from the work of Janet Travell (1942) and Karel Lewit (1979)
- Performed by Physical Therapist
- Physical therapy diagnosis
- Deactivate palpable taut bands within the muscle
- Decrease pain and restore function in the muscle
- Based on the neuromusculoskeletal system

- **Acupuncture**

- Developed from traditional and modern Chinese medicine
- Performed by Acupuncturist
- Have an acupuncture diagnosis
- Promote, maintain, and restore health
- Prevent disease
- Based on acu-points, meridians, energy flow, and one's Qi



# Techniques

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- Piston: “pecking”

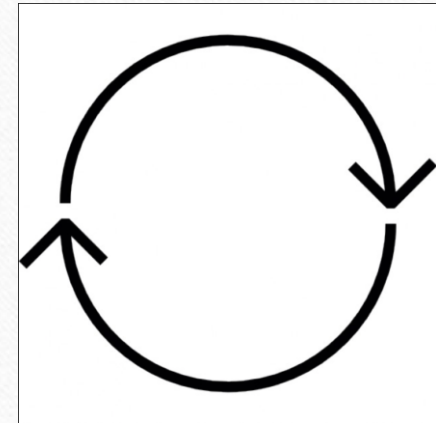


- Coning:

- changing the direction of the needle with retraction to the sub-dermal layer



- Rotation: “twisting”



# Depth of Techniques

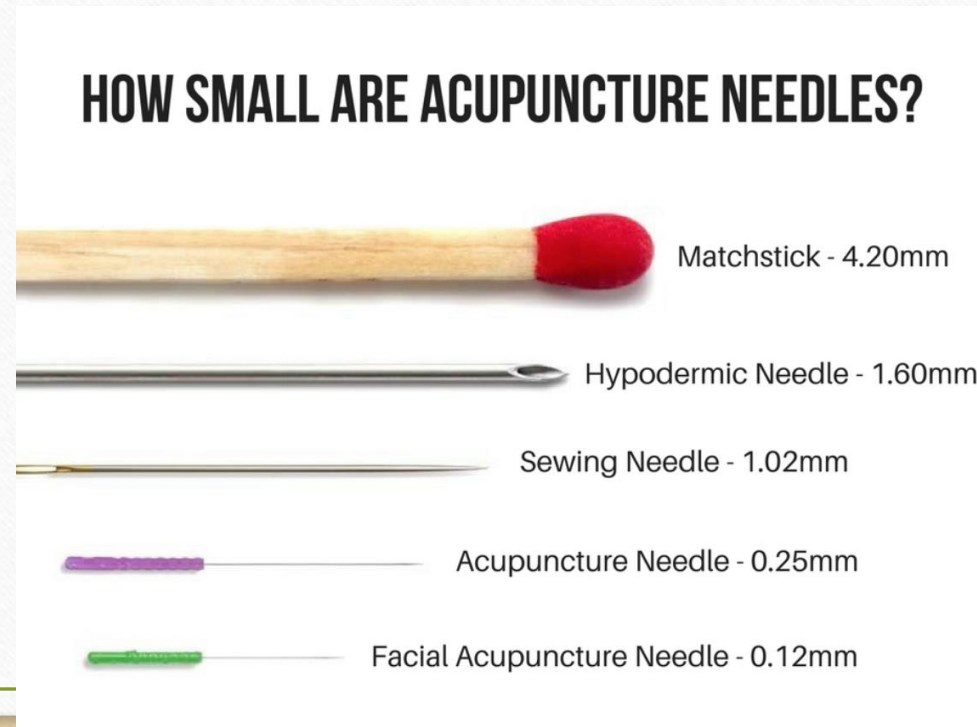
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- Deep Dry Needling:
  - Reduces local and referred pain
  - Improves ROM
  - Decreases spontaneous electrical activity and motor endplate noise
  - Normalizes pH
  - Decrease nociceptive chemicals, inflammatory chemicals, and immune system related chemicals
- Superficial Dry Needling:
  - Reduces local and referred pain
  - Improves ROM



# Needle Sizes

- Sizes of needles: diameter x length in mm:
  - .25 x 30mm
  - .30 x 30mm
  - .30 x 40mm
  - .30 x 50mm
  - .30 x 60mm
  - .30 x 75mm
  - .50 x 100mm



# Risks of DN

ordered most common to least common



- Pain/Fatigue during and after treatment
- Hematoma/Bruising
- Vasovagal response/Headache
- Infection
- Bent needles
- Accidental needle stick by provider
- Broken needle
- Nerve injury
- Pneumothorax (If performed over the thorax)
  - 0.001 % which includes from MD's

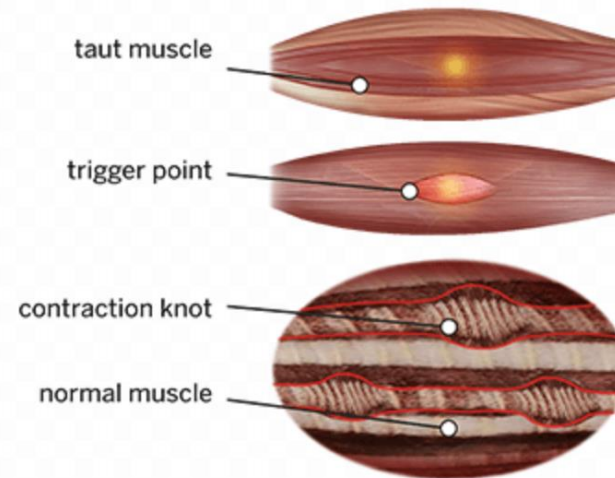
Brady, Dommerholt, Doody, Journal of Manual and Manipulative Therapy, 2014  
APTA Public Policy , Practice, and Professional Affairs, February 2013



# Think “Dry Needling” as a Treatment Option for Myofascial Pain When: (Patient Selection)

- MTrPs reproduce the patient’s pain (the reason they are seeking treatment)
  - “the pain” not “a pain”
- Impairment in body structure
- Functional limitation
- Restricted ROM
- Scar tissue

trigger point complex



# Contraindications to Dry Needle

- PT does not feel comfortable needling the specific area/patient
- Patient has a needle phobia
- Patient is unwilling or is fearful
  - If the treatment is seen as “threatening” it will not likely have a therapeutic effect
- Unable to give consent (cognitive impairment)
- Lack of sensation in the area
- Infection present
- If patient has undergone an implant (eg. NO needling around a total joint replacement) --> this is OC specific
- Needling over cosmetic implant
- Medical emergency/acute medical condition
- Compromised immune system
- Heart valve replacement (endocarditis)
- Inappropriate for any other reason deemed by PT
- \*\*\*Not contraindicated to dry needle a patient with HIV: weigh pros vs cons



# Relative Contraindications to Dry Needle

- Compromised immune system
- Abnormal bleeding
- Patient is on anti-coagulant medication (heparin/warfarin/coumadin/xarelto)
- Vascular disease
- Lymphedema
- Diabetes Mellitus (poor healing)
- Epilepsy (or seizure disorder)
- Allergy to metals
- Pregnancy (first trimester)
- Children (must get consent from patient and parent)
- Frail/elderly
- Abnormal psychological status
- Any other reason that is considered unsuitable by the therapist (lawyer involved/secondary gain)

# What Needs to Happen Before a Patient is Put on Schedule to be Dry Needled at OC

- Education on purpose of dry needling giving short term relief, with the long term relief being obtained with stopping the cause of the formation of taut bands and performing HEP on a regular basis for maintenance
- Screen patient for contraindications
- Task the MD/PA-C for a script for “dry needling” (must get the okay from the provider)
  - Some providers do not know what dry needling is or when it should not/should be employed
  - The script may say “dry needle” but that does NOT mean dry needling must be performed
- It may be a good idea to first see response with soft tissue mobilization and stabilization/neuromuscular re-ed/functional re-training exercises instead of immediately trying dry needling
  - **Dry needling is not the “cure all”, it is a PASSIVE treatment however the patient needs to play an ACTIVE role in the treatment process for long-term relief**



# What Needs to Happen Before a Patient is Put on Schedule to be Dry Needled at OC Continued...

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- Have the patient sign a consent form
- Talk about out of pocket cost in addition to co-pay (currently 30 dollars) for 15 minutes
- Expectations during dry needling: deep crampy/achy feeling
- Dry needling will be stopped if you feel: faint, light headed, dizzy, nauseas
- Expectations after dry needling: one may feel sore however continue to perform HEP and stay hydrated

# What Techniques Can Be Employed Before Dry Needling

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- Soft tissue mobilization to decrease presence of palpable taut bands
  - Strain/counter strain
  - Ischemic compression
  - Myofascial release
  - Instrument assisted soft tissue mobilization
- Stabilization exercises for the secondary muscles that are not performing “their job”





*That's all Folks!*

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