Dry Needling

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Dry Needling

• A skilled technique using filiform needles to penetrate the skin and/or underlying tissues to affect change in body structure and function for the evaluation and management of neuromusculoskeletal conditions, pain, movement impairments, and disability (FOSBPT 2015)
Dry Needling

• ‘Dry’ vs. ‘wet’ needles
  – Dry: solid filiform needles
  – Wet: hollow-bore needles with solution to inject into the tissues
    • Corticosteroids, analgesics,

• Size (diameter x length)
  – Depends on body region / depth of tissue
  – Diameter: .25 - .40 mm
  – Length: 25 – 135 mm
Dry Needling (DN) vs. Acupuncture

- DN: uses subjective and objective examination of the neuromusculoskeletal system
  - Need insertion based on assessment and knowledge of neuroanatomy
- Acupuncture: uses the 12 meridians for points of needle insertion
  - Balance energy, life-force and qi in the body
Within the scope of practice?

- **ATs**
  - NATA: “Currently there is no profession-wide standard that defines ATs competence in DN”
  - Texas: no laws against

- **PTs**
  - APTA: “recognizes DN within the scope of practice”
  - Texas: ‘unclear’ and conflicting standards
Current Evidence

- Kietrys 2013: Systematic review and meta-analysis
  - Recommends DN compared to sham/placebo for improving myofascial pain in UEs
- Dunning 2014: literature review with implications for CPR
  - Limited high-quality and long-term studies
- Gattie 2017: Systematic review and meta-analysis
  - Most evidence is very low – moderate quality
  - High risk of bias in current research
Current Research Continued…

• Brennan 2017: DN and corticosteroid injections had similar results in trochanteric bursitis
• Brandy 2017: Double limb vertical jumps improved by 1.2 inches after DN to gastroc
  – Healthy participants
• Epsi-Lopez 2017: No difference between groups w/ additional DN and group without DN in pts with PFPS
  – RCT; both groups included manual therapy & exercise
• Haser 2017: RCT; elite soccer players
  – Improved knee extension endurance and hip ROM up to 4 weeks after DN
Indications

- Acute and chronic conditions
- Altered muscle tone
- Decreased flexibility
- Decreased ROM
- Neural tension
- Fascial restriction
- Neuromusculoskeletal pain
- Movement dysfunction
- Pain with movement
Contraindications

- Altered Sensation
- Pregnancy
- Local Malignancy
- Blood clotting disease
- Uncontrolled anticoagulant use
- Integument compromise
- Local infection
- Needle phobia
- Known bloodborne pathogen
- Metal allergy
- Spina bifida, scoliosis
- Consent denied by patient
Precautions

- Apprehension to needles
- Malignancy (away from site)
- Infection (away from site)
- Communication barrier
- Severe allodynia or hyperalgesia

Post-op
- At 6 weeks: no muscles that communicate with surgical area
- At 12 weeks: involved muscles with clearance from MD
Side Effects

• Common (1-10%)
  – Needle insertion pain
  – Muscle soreness
  – Fatigue
  – Bruising

• Uncommon (0.1-1%)
  – Aggravation of symptoms
  – Feeling faint or dizzy
  – Stuck or bent needles
  – Headaches
Case Scenarios

18 year old pitcher with Thoracic Outlet Syndrome

• Chief complaint – UE weakness and numbness and tingling into 4\textsuperscript{th} and 5\textsuperscript{th} digit
  • Compression - FDN to pec major/minor, upper trap, and scalenes
  • Neural tension - FDN to cervical paraspinals for C8 and T1
Case Scenarios

16 y.o. female volleyball player

- Chief complaint – low back and hip pain
- Exam determined athlete has tenderness and weakness with glut med testing
  - FDN to glut med
    - Helps with muscle activation
    - Glut med trigger points can refer to low back
  - FDN to L4 – 5 lumbar paraspinals (superior gluteal nerve – L4/5, SI)
Needle Safety and Infection Control

Procedure
1. Wash hands
2. Prepare environment with required equipment
3. Expose area to be treated
4. Don gloves
5. Clean gloves with sanitizing agent
6. Swab area to be treated with alcohol, chlorhexidine, or other sanitizing agent
7. Open needle package
8. Ready needle in needling hand
9. Palpate tissue to be treated and stabilize the local area with a bracket or grasping hand-hold
10. Place needle sheath firmly on area to be treated
11. Tap needle through skin *firmly* with needling hand
12. Remove needle sheath and hold in needling hand
13. Anchor needling hand on surface to be treated
14. Advance needle to depth of tissue to be treated without touching shaft of needle
15. *Perform pistoning using DIP and PIP motion*
16. Remove needle from tissue
Needle Safety and Infection Control

17. If re-sheathing needle is necessary, do so by inserting handle first into sheath
18. Dispose of needle in sharps container
19. Apply direct pressure with tissue or alcohol swab for bleeding needles sites
20. Remove gloves enclosing any blood borne tissues and guide tubes and place in bin
Areas of Caution

- Supraclavicular triangle
- Thoracic spine and ribcage
- Thoracolumbar junction to L2
- Iliac crest
- Sacrum/coccyx
- Femoral Triangle
- Cubital and popliteal fossa
Dry Needling with Electrical Stimulation

- Can help alleviate pain
- Can help with muscle stimulation
Dry Needling Lab
Dry Needling Courses

• Structure & Function Education - Sue Falsone
  – Allows ATs
• Kinetacore – Evidence in Motion
• The Dry Needling Institute
• IAOM-US
• Spinal Manipulation Institute
• Integrative Dry Needling
References

- Gattie E, Cleland J, Snodgrass S. The effectiveness of trigger point dry needling for musculoskeletal conditions by physical therapists: a systematic review and meta-analysis. JOSPT. 2017;47(3):133-150.