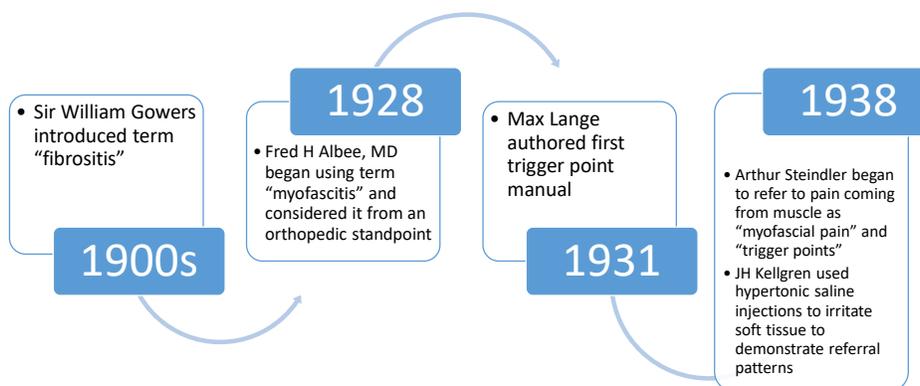


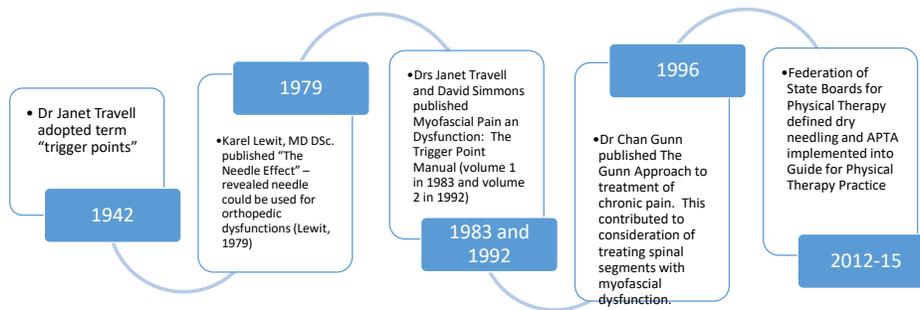
Dry Needling

Rachel Ideus, PT, DPT

History of Dry Needling



History of Dry Needling



Definition of Dry Needling

- A skilled technique performed by a physical therapist using filiform needles to penetrate the skin and/or underlying tissue to affect change in body structures and functions for the evaluation and management of neuromusculoskeletal conditions, pain, movement impairments and disability. (Federation of State Boards of Physical Therapy, 2015)

Definition of Acupuncture

- Method of treatment, derived from a Chinese medicine model 2200 years ago, in which the therapeutic effect is achieved by inserting a sharp, thin needle into acu-points in the body. Application methods are based on the Meridian System and applied accordingly to achieve balanced Qi (pronounced chee). (Evidence Based Acupuncture)

Myofascial Trigger Point (MTrP)

- Active MTrP
 - Hyperirritable spots, taut band of skeletal muscle, and pain with compression
- Satellite MTrP
 - Develop in a zone of reference of the key trigger point (synergist, antagonist, neural link or referral zone)
 - Induced neurologically or mechanically by activity of the key trigger point
- Latent MTrP
 - Painful upon palpation, sensations not recognizable

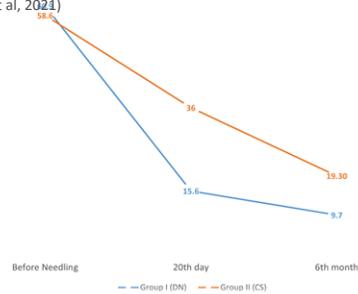
Dry needling an active MTrP will reduce activity of satellite MTrP in zone of pain referral (Hsieh, et al, 2007)

Dry Needling vs Cortisone Injection

- Greater Trochanteric Pain Syndrome (GTPS)
 - Cortisone injections for GTPS did not provide greater pain relief or reduction in functional limitations than dry needling. (Brennan, et al, 2017)

Dry Needling vs Cortisone Injection

- Lateral Epicondylitis
 - DN-treated patients indicated significantly greater improvement than the CS-treated patients at both day 20 and month 6 (Uygur, et al, 2021)



Contraindications

- Inadequate practical knowledge
- Consent denied by patient
- 1st trimester of pregnancy
- Scalp area of infants
- Nipples, umbilicus and external genitalia
- Uncontrolled anticoagulant use
- Compromised immune system
- Local infection or active tumor
- Occipital region of patient with Arnold Chiari Malformation
- Area over pacemaker
- Areas over ribcage or thoracic spine without advanced training

Relative Contraindications

- Controlled anticoagulants
- Post surgical (always communicating with surgeon prior to treatment)
 - 12 weeks at surgical site
 - 6 weeks for adjacent areas with shared vascular/lymphatics to surgical site
- Autoimmune diseases
- History of lymphedema (depends on presence of lymphedema and oncologist clearance)
- Respiratory Illness

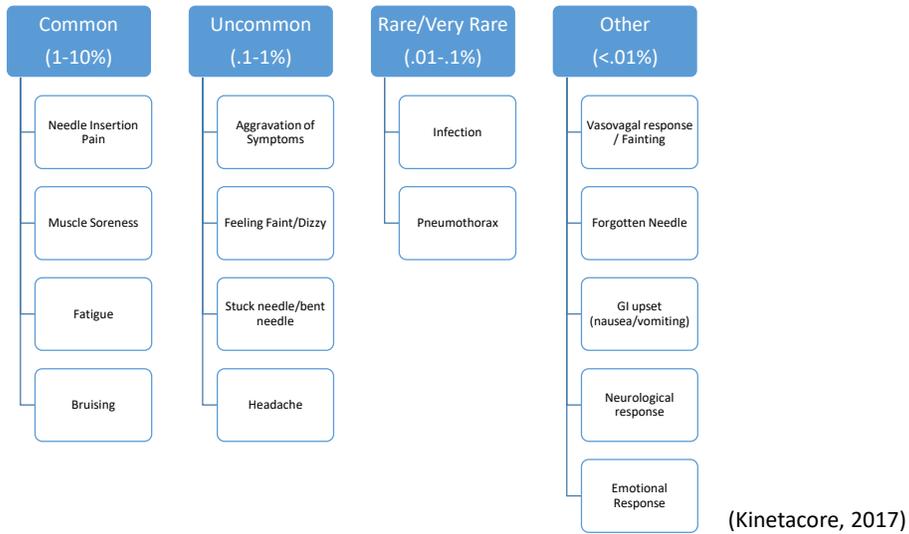
Precautions

- Needle aversion or phobia
- Significant cognitive impairment
- Communication barrier
- History of traumatic or spontaneous pneumothorax
- Severe hyperalgesia or allodynia
- Metal allergy
- Abnormal bleeding tendency
- Vascular disease
- Area of breast implant or spinal simulator
- Area of laminectomy
- Scoliosis
- Severe osteoporosis
- Post-surgical protocols

Physiologic Effects of Dry Needling

- **Increased Blood Flow** (Skorupska et al, 2015)
- **Decreased nociceptive sensitizing agents** (Shah, et al, 2008)
 - Substance P
 - Calcitonin Gene Related Peptide (CGRP)
- **Decreased Banding** (Hsieh, et al, 2012)
 - Restore normal length/tension ratio and sarcomere length
- **Spontaneous Electrical Activity (SEA)** reduced (Chen, et al, 2001)
- **CNS Changes**
 - Activating central inhibitory pathways (Dommerholt, 2011)
 - Decrease Substance P at dorsal root ganglion (Hsieh, et al, 2012)

Potential Complications



Examination

- Pain
- ROM / Strength
- Functional impairments / disability
- Myotomes
 - Segmental component?
- Neural exam
- Palpation

Treatment Plan

- Examination
 - Identify impairment / disability
 - pain
- Electrical stimulation / moist heat (optional)
- Dry Needling
- Manual Therapy (Kheradmandi, et al)
 - Mobilization, manipulation, PNF stretching
- Exercise
 - static/dynamic stretching, aerobic activity, mild-moderate strengthening/stabilization
 - **hold on ice 2-3 hours to allow blood flow to remain in treated area.

Common Treatments

- TMJ
 - Masseter, pterygoid, temporalis
- Cervicalgia / Headaches
 - Sternocleidomastoid, levator scapulae, upper trapezius, rectus capitus posterior major, superior obliquus capitus, multifidus, splenius capitus, semi-spinalis cervicis, semispinalis capitus
- Shoulder pain
 - Deltoid, pectoralis minor/major, rotator cuff (supraspinatus, infraspinatus, subscapularis and teres minor, biceps, triceps, latissimus dorsi)
 - Scapular muscles: Trapezius (upper, middle and lower), rhomboids and serratus anterior
- Elbow pain
 - Wrist extensors, wrist flexors, supinator, pronator, brachioradialis

Common Treatments

- Thoracic pain
 - Multifidi, erectors
- Lumbar pain
 - Multifidi, erectors, quadratus lumborum, Latissimus dorsi
- Posterior Hip/Glute pain
 - Gluteus medius, gluteus minimus, piriformis, superior and inferior gemelli, quadratus femoris
- Anterior Hip pain
 - Psoas, iliacus, rectus femoris, tensor fascia latae, adductor longus/brevis, adductor magnus

Common Treatments

- Knee pain
 - rectus femoris, vastus lateralis, vastus intermedialis and vastus medialis, semimembranosus, semitendinosus
- Shin/Ankle/Foot pain
 - Gastrocnemius, soleus, posterior tibialis, quadratus plantae, peroneus longus and brevis

Expectations

- Increased ROM, improved function
- Reduced pain
- Possible needle site soreness for 3-6 hours post treatment

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