

SOFT TISSUE MOBILIZATION TECHNIQUES; DRY NEEDLING AND INSTRUMENT ASSISTED

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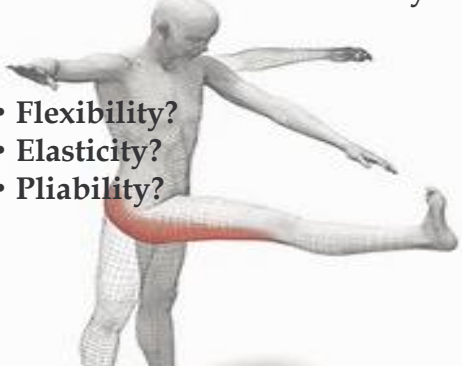
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A little about me...

- ▣ Market Manager; Select Physical Therapy
- ▣ Physical Therapist and Certified Athletic Trainer
- ▣ Keene State College; Bachelors in Sports Medicine
- ▣ American International College; Masters in Physical Therapy
- ▣ Southern New Hampshire University; Masters in Business Administration; Healthcare management
- ▣ Physical Therapy Doctoral work at Utica College
- ▣ Certified Dry Needler; Institute of Manual Therapy
- ▣ Certified Instrument Assisted Soft Tissue Mobilization specialist; Select Medical

What is Soft Tissue Mobility?

- Flexibility?
- Elasticity?
- Pliability?



Why do we need it?



How much is enough??



What tissues are we effecting?

- ❑ Muscles
- ❑ Nerves
- ❑ Tendons
- ❑ Ligaments
- ❑ Synovial Tissues
- ❑ Blood vessels
- ❑ Skin
- ❑ Fascia
- ❑ Other structures?

Focus on Fascia

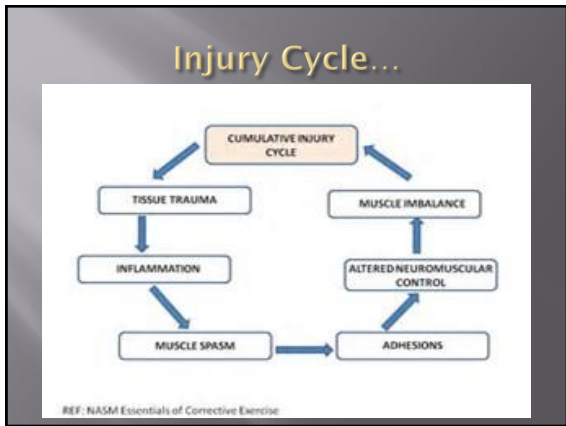
- ❑ The fibrous connective membrane of the body that may be separated from other specifically organized structures, such as tendons, aponeuroses, ligaments, nerves, organs and covers, supports, and separates muscles. It varies in thickness and density and in the amounts of fat, collagenous fiber, elastic fiber, and tissue fluid it contains.

(Mosby's Medical Dictionary, 2009)

Effects of injury on Soft Tissue

- ❑ Inflammation leads to increase in collagen production.
- ❑ Prolonged immobilization(external or protective) can result in cross linking of fibers.
- ❑ Collagen maturity > 6 weeks can result in more permanent restrictions. Collagen healing can take up to 8-12 months.

(Fong, Beckman, Danielson, et al, 2013)



What is a Trigger point?

The classical and most commonly used description of trigger points is that defined by Travell and Simons (1992)

- The presence of exquisite tenderness at a nodule in a palpable taut band (of muscle)
- Trigger points produce referred pain, either spontaneously or by digital compression

Soft tissue mobility... How do we get it??

- ❑ Stretching; A/AA/P, PNF
- ❑ Exercise
- ❑ Manual massage techniques
- ❑ Instrument Assisted
- ❑ Dry Needling

Instrument Assisted Soft Tissue Mobilization (IASTM)

- ❑ What is it?
- ❑ Use of stainless steel tools of various shapes with beveled edges.
- ❑ General Theory; break cross links/mobilize adhesions.
- ❑ "Re-start a stagnant healing process"

Contraindications

- ❑ Patient intolerance
- ❑ Open wounds/ unhealed suture site
- ❑ Over fracture site
- ❑ Osteomyelitis
- ❑ Advanced Diabetes
- ❑ Myositis Ossificans
- ❑ Localized infection
- ❑ Precautions: Burn scars, Anemia, RA, pregnancy, Osteoporosis, Fibromyalgia, Connective Tissue disorders

(Select Medical, 2015)

Treatment Protocol

- ❑ Active warm-up (if possible)
- ❑ Identify treatment area and choose the right tool
- ❑ Apply emollient and initially use light strokes
- ❑ 30-60 seconds of stroking per lesion, then address surrounding tissue or vary stroke/direction.
- ❑ STRETCH THE AREA!!

(Select Medical, 2015)

Petechiae

- ❑ What is it?
- ❑ Appearance of red or purple colored spots due to minor bleeding from broken capillary blood vessels.
- ❑ Is this normal?
- ❑ What does it tell us?

How does it present??



Case Study #1

- ❑ 32 y/o competitive cross fitter.
- ❑ Presents to MD with R posterior shoulder pain during overhead press maneuvers.
- ❑ Mildly kyphotic shoulders, increased anterior shoulder/upper trunk development.
- ❑ AROM; Grossly "WFL", pain at end range of ABD, strength 5/5 all planes 4+/5 ER
- ❑ c/o "I can't train the way I want to without pain."

Case #2; GIRD??

Glenohumeral Internal Rotation Deficit (GIRD)
Case; 21 y/o College Baseball player
6 mos. Post-op Right Shoulder labral repair
Full release to throwing; c/o "I can't get my arm
back in the right position and I've lost velocity"
Slight pain on right posterior shoulder
w/throwing
AROM; 95 deg ER, 40 deg IR, hypomobile
posterior capsule, pain w/ palpation of
infraspinatus & teres minor

Dry Needling

- What??
- You want to do what??
- NO not acupuncture!!



"Exactly which school of acupuncture are you from?"



It's not funny
When your next

Definition of Dry Needling

"Dry needling (DN) is a skilled intervention used by physical therapists 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."



Dry Needling(TDN) vs Acupuncture

Trigger Point Dry Needling	Acupuncture
Medical diagnosis is necessary	Medical diagnosis not relevant
Medical examination imperative	Medical examination not applicable
Needle insertion based on examination – motor points	Needle placement according to TCM philosophy into non-scientific meridians
Knowledge of anatomy essential	Knowledge of anatomy not applicable
Prompt subjective and objective signs & symptoms change	No immediate objective change anticipated

(IAMT 2015)

TDN vs Acupuncture cont'd

TDN	Acupuncture
TDN is based on Western Medicine, founded in 1950s.	Acupuncture based upon ancient eastern philosophies, founded over a thousand years ago
The use of needles is not new to physical therapists. (Example: EMG testing)	A profession cannot not claim a skill or technique.
The goal of TDN is not to affect meridians, chi, or energy flow	Acupuncture's goal is not to disrupt muscular trigger points

(IAMT 2015)

Mechanism of Dry Needling

- Relaxing shortened muscles
Improving functional movement of the joint
- Removing a source of the irritation by needling shortened paraspinal muscles
- Promote healing (needle produces local inflammation)
- Decrease spontaneous electrical activity (SEA) at the site of the Trigger Point & help resolve trigger points
- Help with Long Term Depression associated with increased sensitization of pain modulated within the central nervous system

(IAMT 2015 & Tekin et al 2012)

Contraindications

- ❑ Consent- pt refuses to sign consent
- ❑ Bleeding disorders/anticoagulants
- ❑ Infection
- ❑ CA
- ❑ Uncontrolled Diabetes
- ❑ Lymphedema
- ❑ Acute surgery or joint replacement
- ❑ Pregnancy
- ❑ Cardiac pacemaker
- ❑ Spinal stimulator
- ❑ Seizure disorder
- ❑ Low immune function
- ❑ Systemic inflammatory condition

(IAMT, 2015)

Procedure

- ❑ Clean area of clutter, prepare pt's treatment area and wash hands
- ❑ Clear pt's body area of clothing and drape(if necessary)
- ❑ Glove both hands, swab pt's treatment area w/ alcohol
- ❑ Open sterile needle packet
- ❑ Tap end of needle with a firm/quick finger contact
- ❑ Remove tube and grasp handled end of needle
- ❑ Perform TDN technique; "pistoning(5-10 seconds), bake, etc."
- ❑ Remove needle and place in sharps container
- ❑ Then perform STM and mobilize area treated.

(IAMT, 2015)

Case Study #1

- ❑ 34 y/o female marathoner with L heel, anterior & posterior lower leg pain(still training)
- ❑ Slight pes planus and genu valgum
- ❑ Mild soft tissue restrictions found in plantar fascia, gastroc, ITB
- ❑ ROM and Strength; WFL
- ❑ c/o "I have trouble on higher mileage days or when I ramp up my training."

Case #2

- ❑ 41 y/o competitive male golfer with L lateral elbow pain
- ❑ Rx of rest, NSAID's, stretching, ice not providing relief... he's still playing
- ❑ AROM; end range limitations in wrist flex, ext, sup, tissue restrictions found on proximal wrist extensor and deep pronators.
- ❑ Pain with MMT; wrist ext/sup
- ❑ c/o; "I'm having pain when I strike the ball and can't get through."

Conclusion...

- ❑ Anatomy! You have to know what your working on for specificity of Rx and promote healing.
- ❑ Discuss all options with your patient.. The decision is theirs in the end.
- ❑ Educate! Every step of the way.
- ❑ These techniques are tools... Always look in the tool box and the best option



QUESTIONS????

Thank You!

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