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- Email customerservice@PhysicalTherapy.com
Myofascial Interventions Part III: Dry Needling and Cupping

Scott Cheatham, PhD, DPT, PT, OCS, ATC, CSCS

Presenter Disclosure: Financial: Scott Cheatham has received an honorarium for presenting this course. Non-financial: Scott Cheatham has no relevant non-financial relationships to disclose.

Content Disclosure: This learning event does not focus exclusively on any specific product or service.

Sponsor Disclosure: This course is presented by PhysicalTherapy.com.
Speaker Bio

- Scott Cheatham PT, PhD, DPT, OCS
- Educator/Researcher

Learning Outcomes

As a result of this course, participants will be able to:

- Discuss at least two current scientific theories behind dry needling and cupping.
- Discuss at least three best practice patterns for dry needling and cupping.
- Discuss at least two common indications, precautions, and contraindications for each intervention.
Disclaimer

- Implus, LLC provided permission to use their products, images, and media in some of the topics presented in this talk.
- Different products are shown with permissions and/or proper citations.
- There are no conflicts of interest with this presentation.
- We are still learning about the myofascial world. This presentation share’s what we are currently learning.

Module I: Scientific Theory Review
What are the current scientific theories behind myofascial compression interventions?
Scientific Theories

Mechanical

Mechanical compression to the local myofascia affects the tissue viscoelastic properties. Other mechanisms involved may include changes in thixotropy, reduced MF restriction, trigger points, fluid changes, cellular responses, and fascial inflammation.

Neuro-Physiological

Mechanical compression influences tissue relaxation and pain reduction in the local and surrounding tissues through CNS afferent input from the golgi tendon reflex, mechanoreceptors, nociceptors, and other CNS pathways. Parasympathetic Effect?

Summary

Myofascial Compression

Pain – Decrease
Muscle/Joint - Greater ROM
Myofascia – Decreased Stiffness
Function – Increased Movement
Efficiency

Afferent stimulus to CNS

Efferent Neurophysiological response

CNS processes signal
Summary

Pain Modulation
- Changes in tissue viscoelasticity, thixotropy, MF restriction, trigger points, cellular fluids, and fascial inflammation.
- Changes in local tissue stiffness, stretch tolerance, ROM

Local Effects
- Activation of group III/IV afferents via mechanoreceptors, metaboreceptors, proprioceptors
- Ruffini/Pacinian modulate SNS
- Group III/IV modulate SNS/PNS
- GTO/alpha motor modulated

Global Effects
- Global pain modulation: gate control theory, diffuse noxious inhibition, PNS
- Non-local effects Crossover
- Recip. inhibition

Common Myofascial Compression Interventions
- IASTM
- Manual Myofascial Release
- Mechanical Percussion
- Myofascial Interventions
- Dry Needling
- Roller Massage
- Cupping
- Floss Bands
Bottom Line

- The scientific research suggests two theories:
  - Mechanical
  - Neurophysiological

- Based on evidence, myofascial compression may not:
  - Release myofascia
  - Break up adhesions
  - Promote tissue healing
  - Etc.

---

Bottom Line

- What about cupping?
  - Suction (negative pressure) distracts or decompresses the myofascial

- The effects of this mechanical action has not been fully studied

- Different parts of the world classify cupping differently:
Module II: Cupping

Nomenclature

- CAM: Complimentary and Alternative Medicine
  - Umbrella term that encompasses a vast array of treatment options supplementing conventional therapies

- Common Terms in the Literature:
  - Cupping therapy
  - Myofascial cupping
  - Myofascial decompression
  - Dry cupping/wet cupping
  - Hijama (Arabic)
  - Other ancient terms
History of Cupping

3500 B.C. Egyptians
413 B.C. Greece
340 A.D. Asia
2020 Worldwide

1500 B.C. Egypt
610 A.D. Middle East
1800's Europe


What are the clinical standards for cupping?
Treatment Objectives

- **Rationale:**
  - Cupping uses suction to help promote movement of blood and other fluids through the tissues.

- **Traditional Thought:**
  - Cupping is a form of detoxification or medical treatment for various conditions.

- **Current Thought:**
  - In U.S., cupping has grown to be a mainstream myofascial treatment with different companies providing their own cups and education.

- **Indications:**
  - Health & wellness, MF dysfunction, MSK disorders, and systemic diseases (diabetes, hypertension, & RA).
  - Sites selected according to the treated ailment:
    - e.g. spine, chest, abdomen, buttocks, and legs.

- **Assessment:**
  - Patient reported outcomes: NPRS or VAS
  - Clinical Measures: ROM, pressure pain threshold, strength, and field performance tests.

- **References**
Precautions

- Petechiae, bony landmarks
- NSAIDS, steroids, narcotics
- Herbal supplements
- Patient age, flu or flu like symptoms
- Cancer, pregnancy, Diabetes
- Hypertension, kidney dysfunction
- Acute inflammatory conditions
- Post injection (e.g. steroid)
- Unhealed closed fractures
- Congestive heart disease, circulatory disorders
- Patient intolerance, hypersensitivity, high pain sensation
- Anti-coagulants, hormone replacement, fluoroquinolone antibiotics
- Lymphedema
- Osteoporosis
- Vericose veins, polyneuropathy
- Burn scars, body art
- RA, ankylosing spondylitis
- Allergies to metals, emollients, latex
- Autoimmune disorders, RSD/CRPS
- Pacemaker or insulin pumps (treatment around devices)

Contraindications

- Acute or recent injury, infection or fever
- Skin rash, open wounds, blisters, local tissue inflammation, or tumors
- Recent surgery or Osteoporosis
- Unhealed bone fracture or myositis ossificans
- Acute/ severe cardiac, liver, or kidney disease
- Neurologic conditions
- Metabolic conditions (e.g. diabetes)
- Connective tissue disorders
- Blood thinners or narcotics
- Chronic pain conditions
- Severe pain felt by patient
- Petechiae (severe) or ecchymosis
- Treatment over surgical hardware
- Cancer or malignancy
- Hypertension (uncontrolled)
- Congestive heart disease/circulatory disorders
- Bleeding disorders
- Unhealed surgical site
- Peripheral vascular disease
- Thrombophlebitis or osteomyelitis
- Direct pressure over face, eyes, arteries, vessels, or body regions
- Epilepsy
Most Obvious Issues

Precautions

- Petechia
- Patient intolerance
- Bones/nerves/vessels
- Healing skin (scars/wounds)
- Skin allergies
- Meds effecting sensation
- Diabetes/neuropathy
- Etc.

Contraindications

- Severe petechiae
- Skin rash/open wounds
- Blisters/tissue inflammation
- Cancer/malignancy
- Over eyes/sensitive areas
- Healing surgical/injury site
- Severe pain
- Vericose veins?
- Neurological conditions
- Etc.

Post-treatment “crop circles”
Adverse event or acceptable treatment?

```
<table>
<thead>
<tr>
<th>Preventable cupping adverse event</th>
<th>Nonpreventable cupping adverse event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scar formation</td>
<td>Koebner phenomenon</td>
</tr>
<tr>
<td>Burn</td>
<td>Headaches</td>
</tr>
<tr>
<td>Bullae formation</td>
<td>Tiredness</td>
</tr>
<tr>
<td>Abscess and skin infection</td>
<td></td>
</tr>
<tr>
<td>Pruritus</td>
<td>Vasovagal attack</td>
</tr>
<tr>
<td>Anemia</td>
<td>Nausea</td>
</tr>
<tr>
<td>Panniculitis</td>
<td>Insomnia</td>
</tr>
</tbody>
</table>
```

Bottom Line

- Cupping indications are based upon existing research
  - Research has limitations that should be considered.
- Proposed precautions and contraindications
  - Based upon cupping, myofascial compression, and therapeutic massage research.
- Professional practice patterns do not always follow the research

What are the different types of cupping device?
Cupping Devices

- Silicone:
  - Material: Silicone
  - Sizes: Small and large

- Glass/Plastic:
  - Material: Plastic or glass
  - Sizes: Variable

- Other:
  - Material: Variable
  - Sizes: Variable

Cupping Classifications

<table>
<thead>
<tr>
<th>Technical Types</th>
<th>Suction Types</th>
<th>Suction Method</th>
<th>Adjunct Therapies</th>
<th>Specific Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry cupping</td>
<td>Light cupping</td>
<td>Fire cupping</td>
<td>Needle cupping</td>
<td>Cosmetic cupping</td>
</tr>
<tr>
<td>Flash cupping</td>
<td>Medium cupping</td>
<td>Manual suction</td>
<td>Moxa cupping</td>
<td>Sports cupping</td>
</tr>
<tr>
<td>Wet cupping</td>
<td>Strong cupping</td>
<td>Automatic suction cupping</td>
<td>Herbal cupping</td>
<td>Pedi cupping</td>
</tr>
<tr>
<td>Massage cupping</td>
<td>Pulsatile</td>
<td></td>
<td>Magnetic cupping</td>
<td>Abdominal cupping</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Laser cupping</td>
<td>Facial cupping</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Electrical stim cupping</td>
<td>Male/female cupping</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Water cupping</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aquatic cupping</td>
<td></td>
</tr>
</tbody>
</table>
What are the current recommendations for cupping hygiene?

Device Hygiene

- Cupping device disinfecting:
  - Use Intermediate-level disinfectant to clean cup.
  - Flush instrument with soap and water before treatment.
  - If the tool contacts blood, bodily fluids, mucous membranes, or non-intact skin, then proper disinfecting with a high-level disinfectant or sterilization should be done.

- Safe treatment sequence: See next slide

<table>
<thead>
<tr>
<th>Center for Disease Control Levels of Disinfection</th>
</tr>
</thead>
<tbody>
<tr>
<td>High-level disinfection</td>
</tr>
<tr>
<td>Intermediate-level disinfection</td>
</tr>
<tr>
<td>Low-level disinfection</td>
</tr>
</tbody>
</table>

EPA: Environmental Protective Agency
## Cupping Safe Treatment Sequence Recommendations

<table>
<thead>
<tr>
<th>Step</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Wash hands with soap and water or rubbing hands together using an alcohol-based hand sanitizer (e.g., gel or wipe) for a minimum of 20 seconds. Wear personal protective equipment (PPE) during treatment, as necessary.</td>
</tr>
<tr>
<td>Step 2</td>
<td>Before treatment, the body region is inspected and cleared for treatment. Then the patient’s skin (at the treatment site) is cleaned with a low-level sanitizing wipe (e.g. Purell®) that is safe for the skin, or 60-70% isopropyl alcohol to further reduce the risk of infection.</td>
</tr>
<tr>
<td>Step 3</td>
<td>The cupping treatment is administered using PPE procedures, as needed.</td>
</tr>
<tr>
<td>Step 4</td>
<td>During the prescribed treatment, the professional monitors for changes in the patient’s status (e.g., petechiae, sensitivity to treatment, etc.)</td>
</tr>
<tr>
<td>Step 5</td>
<td>Upon completion of treatment, the body region is re-inspected and cleaned again using a sanitizing wipe or isopropyl alcohol.</td>
</tr>
<tr>
<td>Step 6</td>
<td>The professional concludes with post treatment hand hygiene, disposing of any PPE, and cleaning of the cups using an intermediate level disinfectant.</td>
</tr>
</tbody>
</table>

## Bottom Line

- Professionals should:
  - Develop a standard cleaning procedure.
  - Use an intermediate-level disinfectant to clean devices.
    - Clorox® and Lysol® brand wipes, 70% isopropyl alcohol
  - Follow the recommended “wet time” (e.g. 4 min to disinfect)
  - Wear proper PPE per the product recommendations
    - At minimum, gloves and maybe a mask (e.g. harmful odor)
What are the proposed physiological responses that occur from cupping?

**Cupping Physiological Responses**

**Cellular Effects**
- Fluid dynamics
- Immune response
- Balance of the Qi
- Improved circulation
- Mechanical
- Pain reduction
- Neuro-physiological

**Physiological Effects**
- Negative pressure
- Resolution of capillaries
- Capillary rupture/dependent
- Echymosis
- Macrophages digest RBCs
- Hemoglobin (green)
- Bilirubin (yellow)
- Hem breakdown products
- Carbon monoxide
- Biliverdin (green)
Cupping Physiological Responses


What are common clinical practice patterns among professionals?
Common Approaches

- **Dry Cupping**: skin and myofascia are sucked into the cup by negative pressure
  - Silicone: push and pull
  - Glass: suction pump or flame
  - Plastic: suction pump
- **Wet Cupping**: blood letting process (5-6 steps)
  - Method (1): Skin demarcation, sterilization, puncturing, cupping, and sterilization
  - Method (2): Skin demarcation, sterilization, cupping, puncturing, cupping, and sterilization
Cup Suction Strength

- **Light**: 2 pumps/100 and 300 millibar
- **Medium**: 4 pumps/300 and 500 milibar
  - Often indicated for painful MSK conditions.
- **Strong**: 5 or more pumps/above 500 milibar
- **Pulsatile**: Variable pressure inside the cups
  - (between 100 and 200 milibar every 2 seconds).
Common Types of Cupping

- 4 Types of Cupping
  - Flash cupping
  - Dry cupping
  - Wet cupping
  - Massage cupping

Types of Cupping
Types of Cupping

- Massage Cupping

- Myofascial Stripping Technique
Bottom Line

- Professional practice patterns do not always follow the research
  - Treatment is often individualized

Cupping Research
What does the cupping research suggest?

Levels of Evidence

<table>
<thead>
<tr>
<th>Evidence Levels</th>
<th>Grading Criteria</th>
</tr>
</thead>
</table>
| Level 1         | A: Systematic Review of RCT’s  
                    B: Individual RCT with narrow CI  
                    C: Series of cases (all or none) |
| Level 2         | A: Systematic review of cohort studies  
                    B: Individual cohort study, RCT with dropouts >20%  
                    C: “Outcomes” Research or ecologic studies |
| Level 3         | A: Systematic Review (case-controls)  
                    B: Individual case-control |
| Level 4         | Case Series |
| Level 5         | Expert’s opinion |
Literature Review

Systematic Reviews

- Reviews:
  - 2020- Cramer et al. J Pain
  - 2018- Kim et al. BJM Open.
- Consensus:
  - Mixed methods = mixed results
  - Moderate to weak evidence for therapeutic benefits
    - Dry Cupping: Neck and Chronic LBP, Ankylosis Spondylitis, Arthritis
    - Dry Cupping: Flexibility, Mobility, Performance, Chronic Pain
    - Wet Cupping: Hypertension, NSLBP, Neck Pain, CTS

Evidence Grade = 1
Clinical Studies

- Combined Intervention
  - Myofascial Dysfunction/Trigger Points: (+ dry and massage)
- Single Intervention
- Hamstring Flexibility: (- dry)
  - 2019- Williams et al. J Sport Rehabil
- Chronic LBP: (+ wet and dry)
- Non-Specific LBP: (+ wet)
- Carpel Tunnel Syndrome: (+ dry)

Evidence Grade = 2
Cupping Research

<table>
<thead>
<tr>
<th>Interventions</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment duration</td>
<td>5-30 minutes</td>
</tr>
<tr>
<td>Outcome measures</td>
<td>Variable: Pain (0-10), ROM, Function, Questionnaires</td>
</tr>
<tr>
<td>Long-Term Outcomes</td>
<td>Variable: No-long term efficacy (e.g. 4 wks HTN patients)</td>
</tr>
</tbody>
</table>

Evidence Grade = 1

Bottom Line

- The research on cupping is very diverse with a focus on the therapeutic effects for specific medical conditions
  - Moderate efficacy with short-term results
- Western medicine has modernized the practice, but the research has produced little results
- Future research needs to compare the 4 common methods of cupping on ROM, PPT, and movement efficiency.

Final Evidence Grade

B-
Module III: Dry Needling

Nomenclature

- Common Terms in the Literature:
  - Dry needling (DN)
  - Needling
  - Acupuncture?
History of Dry Needling


Unverzagy et al. Dry needling for myofascial trigger pain: a clinical commentary. JSPT 2015

What are the clinical standards for dry needling?
Treatment Objectives

- **Rationale:**
  - Dry needling is 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.

- **Indications:**
  - Myofascial pain syndromes, trigger points, MSK conditions

- **Current Thought:**
  - In western medicine, dry needling is a myofascial treatment used to treat active or latent trigger points.

---

Dry Needling versus Acupuncture

<table>
<thead>
<tr>
<th></th>
<th>Dry Needling</th>
<th>Acupuncture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Origin</strong></td>
<td>Western Medicine</td>
<td>Eastern Medicine</td>
</tr>
<tr>
<td><strong>Treatment Rationale</strong></td>
<td>MF trigger points</td>
<td>Qi and energy meridians</td>
</tr>
<tr>
<td><strong>Licensure</strong></td>
<td>PT/Acupuncturist</td>
<td>Acupuncturist</td>
</tr>
<tr>
<td><strong>Accepted States</strong></td>
<td>Not all 50</td>
<td>All 50 states</td>
</tr>
<tr>
<td><strong>Types of needles</strong></td>
<td>Similar</td>
<td>Similar</td>
</tr>
<tr>
<td><strong>Precautions/Contraindications</strong></td>
<td>Similar</td>
<td>Similar</td>
</tr>
</tbody>
</table>
Most Obvious Contraindications

Relative
- Abnormal bleeding
- Compromised immune system
- Heart/vascular disease
- Pregnancy/children
- Frail patients
- Epilepsy/psychological status
- Diabetes/neuropathy
- Allergies
- Medications
- Lung region?

Absolute
- Needle phobia
- Skin rash/open wounds
- Blisters/tissue inflammation
- Patient unwilling (fear)
- Over eyes/sensitive areas
- Unable to give consent
- Emergency/acute injury
- Lymphedema
- Pacemaker?
- Cancer/malignancy
- Neurological conditions?

Adverse Events

- Needle stick injury
- Pain during treatment
- Hematoma
- Pneumothorax (thorax needling)
- Fainting
- Infection
- Stuck needle
- Broken needle
- Bent needle

APTA. Description of dry needling in clinical practice: an educational resource paper. 2013
Bottom Line

- Dry needling indications are based upon existing research
  - Research has limitations that should be considered.
- Proposed contraindications
  - Based upon dry needling and acupuncture research.
- Professional practice patterns seem to follow the research

What are the different types of dry needles?
Dry Needles

What are the current recommendations for dry needling hygiene?
Dry Needling Hygiene

Dry Needling Safe Treatment Sequence Recommendations

<table>
<thead>
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</tr>
</tbody>
</table>
Bottom Line

- Professionals should:
  - Develop an OSHA standard cleaning procedure
    - E.g. blood and sharps
  - Use an intermediate-level disinfectant to clean devices.
    - Clorox® and Lysol® brand wipes, 70% isopropyl alcohol
  - Follow the recommended “wet time” (e.g. 4 min to disinfect)
  - Wear proper PPE based upon the treatment:
    - At minimum, gloves and maybe a mask (e.g. harmful odor)


What are the proposed physiological responses that occur from dry needling?
Trigger points

- TrPs: Hyperirritable spots within a taut band of contractured skeletal muscle fibers that produce local and/or referred pain when stimulated.
  - Active TrPs - Spontaneously painful
  - Latent TrPs - Painful when stimulated

![Diagram of Trigger Points]

TrPs treatment:
- DN Superficial:
  - Activate mechanoreceptors and nociceptors, and other CNS afferent pathways
    - Reduced local/referred pain, improved ROM
- DN Deep:
  - LTR - local twitch response is an involuntary spinal cord reflex contraction of the muscle fibers in a taut band.
    - Reduced local/referred pain, improved ROM, reduced local and remote TrPs irritability, normalizes pH and circulation, etc.

APTA. Description of dry needling in clinical practice: an educational resource paper. 2013
Myofascial Treatment

- Decreased muscle tension
- Mechanical effect on trigger point
- Activate immune response
- Pain neuromodulation
- Fibroblastic activation
- Mechanotransduction

What are common clinical practice patterns among professionals?
### Common Conditions

<table>
<thead>
<tr>
<th>Radiculopathies</th>
<th>Joint dysfunction</th>
<th>Disc pathology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tendonitis</td>
<td>Mandibular dysfunction</td>
<td>Migraines</td>
</tr>
<tr>
<td>Tension-type headaches</td>
<td>Carpeltunnel syndrome</td>
<td>Computer related disorders</td>
</tr>
<tr>
<td>Whiplash</td>
<td>Spine dysfunction</td>
<td>Pelvic pain/urological</td>
</tr>
<tr>
<td>Post-herpetic neuralgia</td>
<td>Complex regional pain syndrome</td>
<td>Nocturnal cramps</td>
</tr>
<tr>
<td>Phantom pain</td>
<td>Neurological disorders</td>
<td>Others</td>
</tr>
</tbody>
</table>

### Common Procedure

1. **Area palpated for trigger point**
2. **Needle positioned over area**
3. **Needle tapped and punctures tissues**
4. **Needle is withdrawn when desired effect is obtained**
5. **Needle is moved up/down or twisted as needed**
6. **Needle is guided until resistance is felt or LTR is elicited**
7. **Area is re-inspected**
8. **Post treatment interventions**

APTA, Description of dry needling in clinical practice: an educational resource paper, 2013
Dry Needling Video Example

Bottom Line

- Professional practice patterns do follow the research and guidelines
  - Treatment is often individualized
### Levels of Evidence

<table>
<thead>
<tr>
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                  B: Individual case-control |
| Level 4         | Case Series                                                                       |
| Level 5         | Expert’s opinion                                                                  |
What does the dry needling research suggest?

Literature Review

2000 → 2020
### Systematic Reviews

- 2020: Vazquez-Justes et al. *Neurologia*
- 2020: Pourahmadi et al. *Chiro Man Therap*
- 2019: Callejas-Marcos et al. *Rehabilitacion*
- 2019: Griswold et al. *J Man Manip Ther*
- 2019: Mansfield et al. *JOSPT*
- 2019: Charles et al. *J Bodw Mov Ther*
- 2019: Vier et al. *Braz J Phys Ther*
- 2018: Hall et al. *Physiotherapy*
- 2018: Liu et al. *Arch Phys Med Rehabil*
- 2018: Espejo-Antunez et al. *Complement Ther Med*
- 2018: Hu et al. *Medicine*

Evidence Grade = 1

---

<table>
<thead>
<tr>
<th>Interventions</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment technique</td>
<td>Dry needling (variable techniques)</td>
</tr>
<tr>
<td>Treatment duration</td>
<td>Variable: 10-30 minutes??</td>
</tr>
<tr>
<td>Outcome measures</td>
<td>Variable: Pain (0-10), Questionnaires, Clinical Measures</td>
</tr>
<tr>
<td>Long-Term Outcomes</td>
<td>12 weeks (pain reduction)</td>
</tr>
</tbody>
</table>

Outcomes:
- (+) Results with TrPs(?), pain, headaches, neck pain, tendinopathy, UE pain
- (+/-) Mixed results on myofascial pain, TrPs, force production, and function

Evidence Grade = 1
Clinical Studies

2019 → 2020

Dry Needling Research

- Myofascial Dysfunction/Trigger Points:
  - 2019: Mansafnezhad et al. J Back Musculoskelet Rehabil
  - 2019: Walsh et al. J Bodw Mov Ther

- Piriformis Syndrome:
  - 2019: Tabatabaiee et al. Muscle Nerve

- Osteoarthritis:

- Plantar Fasciitis:
  - 2019: Uygur et al. J Foot Ankle Surg

Evidence Grade = 2
Dry Needling Research

- Shoulder Impingement:
- Shoulder (subacromial pain):
- Neck Pain/Facial Pain
- Headaches:
  - 2019- Gildir et al. Medicine
  - 2019- Kamali et al. J Bodw Mov Ther

Evidence Grade = 2

Bottom Line

- Thoughts:
  - The dry needling research is very diverse with a focus on the therapeutic effects for specific medical conditions
  - Western medicine has modernized the practice
  - Research has moderate to weak evidence
    - Short-term outcomes
    - Often part of a comprehensive treatment strategy

Final Evidence Grade

B+
Module III: Manual Myofascial Release

Nomenclature

- Common Terms in the Literature:
  - Myofascial Release
  - Myofascial Therapy
  - Trigger Point Therapy
History of Manual Myofascial Release

- 1940's "Myofascial" first used
- 1960's "MF Release" first used
- 1976 "MF Trigger Point" Janet Travell
- 1983 Trigger Point Manual Janet Travell
- 2020 "MF Therapy" "MF TrPS" "Self MFR"

- What are the proposed physiological responses that occur from myofascial release?
  - See therapeutic massage literature
- What are the current recommendations for myofascial release hygiene?
  - Standard of care practices
- What are the clinical standard for myofascial release?
  - See therapeutic massage literature
What are the clinical standards for myofascial release?

Myofascial Release Therapies

- Direct MFR: tissue is loaded with a constant force until “release” occurs in the desired direction.

- Indirect MFR: tissue is lightly stretched, and the therapist applies slow, steady pressure in the direction that the fascia can be felt to allow greatest ease of movement “unwinding”.

- Trigger Point: ischemic compression to a trigger point (latent or active).
What does the myofascial release research suggest?

**Levels of Evidence**

<table>
<thead>
<tr>
<th>Evidence Levels</th>
<th>Grading Criteria</th>
</tr>
</thead>
</table>
| **Level 1**     | A: Systematic Review of RCT’s  
                    B: Individual RCT with narrow CI  
                    C: Series of cases (all or none) |
| **Level 2**     | A: Systematic review of cohort studies  
                    B: Individual cohort study, RCT with dropouts >20%  
                    C: “Outcomes” Research or ecologic studies |
| **Level 3**     | A: Systematic Review (case-controls)  
                    B: Individual case-control |
| **Level 4**     | Case Series |
| **Level 5**     | Expert’s opinion |
## Clinical Studies

### 2015 ➔ 2020

## Myofascial Release Therapy

- 2019: Cathcart et al. J Bodyw Mov Ther
- 2019: Sera-Ano et al. Support Care Cancer
- 2018: Wasserman et al. J Bodyw Mov Ther
- 2015: Ajimsha et al. J Bodyw Mov Ther

### Interventions Parameters

<table>
<thead>
<tr>
<th>Interventions</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment technique</td>
<td>Variable, often combined with other interventions</td>
</tr>
<tr>
<td>Treatment duration</td>
<td>Variable among studies</td>
</tr>
<tr>
<td>Outcome measures</td>
<td>Variable: Pain (0-10), Questionnaires, Function</td>
</tr>
<tr>
<td>Long-term outcomes</td>
<td>Poorly reported</td>
</tr>
</tbody>
</table>

Outcomes: (+) orthopedic conditions, fibromyalgia, post breast cancer, TMD, ROM

Evidence Grade = 2
Trigger Point Therapy
Ischemic Compression

- 2019: Laroshevsky et al. Wiad Lek
- 2018: Wasserman et al. J Bodyw Mov Ther

<table>
<thead>
<tr>
<th>Interventions</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment technique</td>
<td>Ischemic compression (TP site)</td>
</tr>
<tr>
<td>Treatment duration</td>
<td>15-60 seconds of compression (i.e. 6 reps)</td>
</tr>
<tr>
<td>Outcome measures</td>
<td>Pain (0-10), ROM, strength, pain, questionnaires</td>
</tr>
<tr>
<td>Long-Term Outcomes</td>
<td>6 months</td>
</tr>
</tbody>
</table>

Medical Conditions: (+) results with individuals with MF pain and TrP's

Evidence Grade = 2

Bottom Line

- Thoughts:
  - Manual myofascial therapy: Positive outcomes. However, the research is varied with the type of technique, combined interventions, and poorly reported long-term outcomes.

  - Trigger point therapy (TrPs): Positive outcomes. Moderate evidence for treating MF trigger points. However, the research is varied with the protocol for treatment and poorly reported long-term outcomes.

Final Evidence Grade

B
Final Thoughts

Scientific Theories

- Mechanical
- Neuro-Physiological
Myofascial Interventions Interchangeability

Thanks!!!
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PubMed Citations
References


References