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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.
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CONTINUED

Speaker Bio

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

CONTINUED

Learning Outcomes

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

- Discuss at least two current scientific theories behind dry needing 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.

CONTINUED

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- 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.

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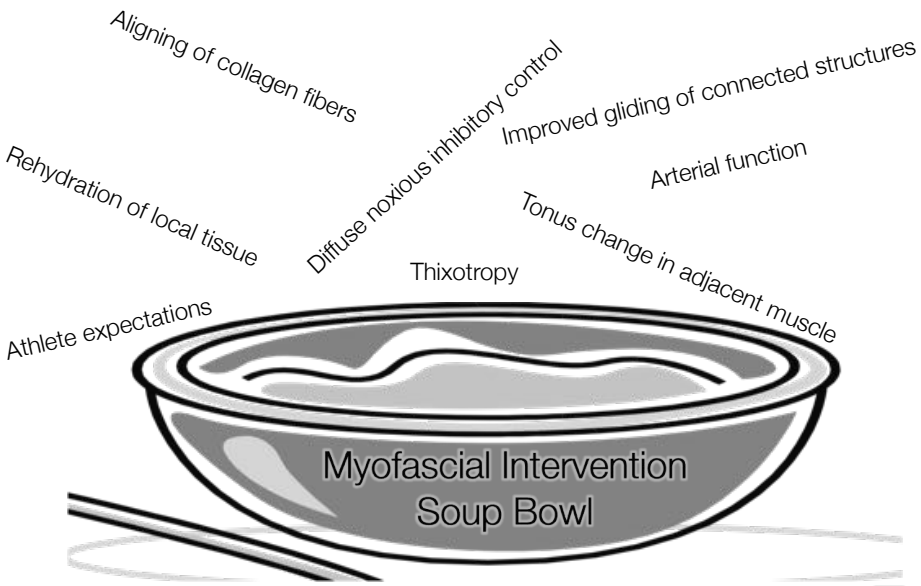
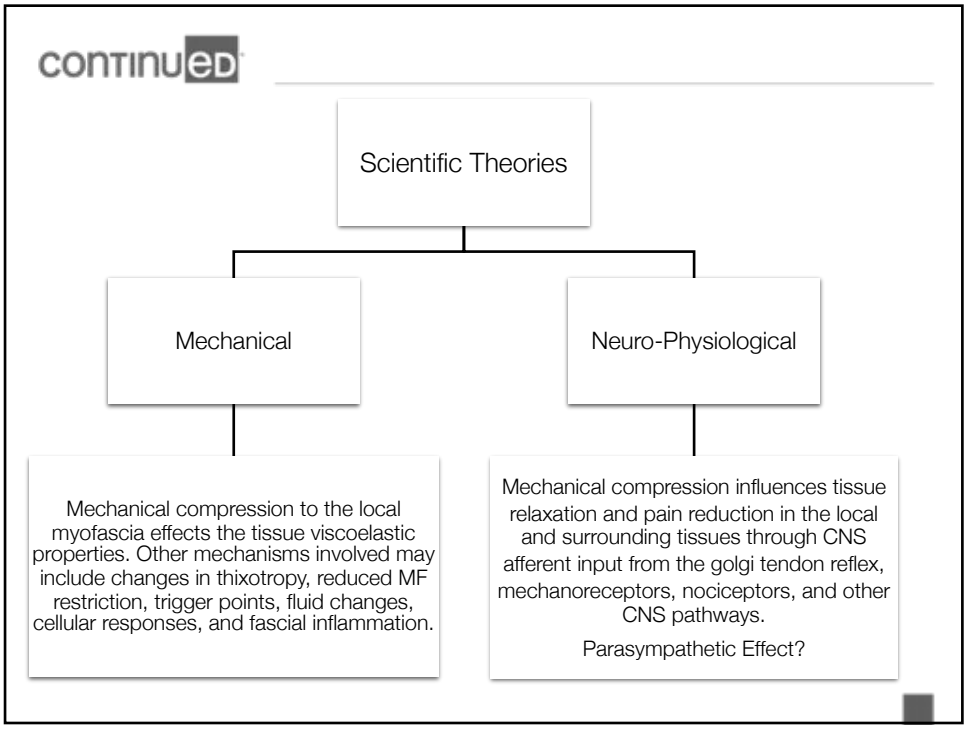
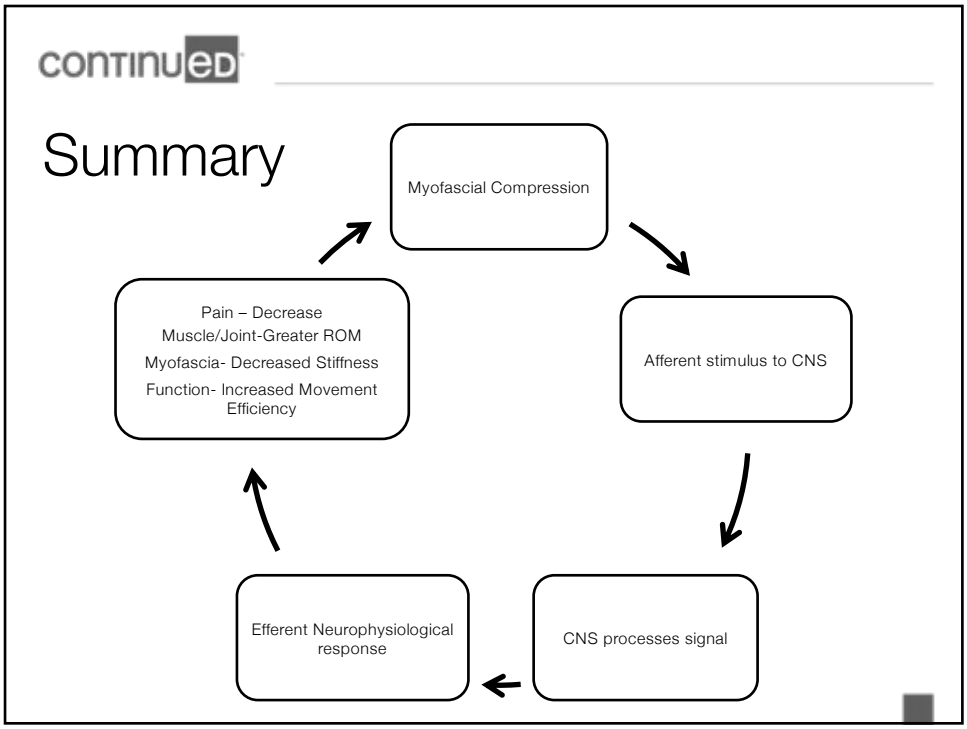
Module I:
Scientific Theory Review

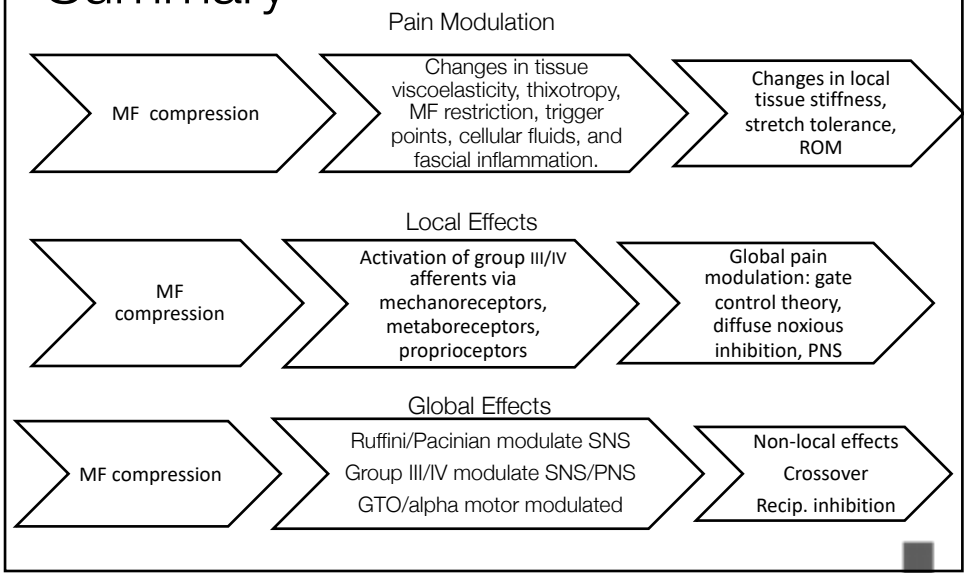
What are the current scientific theories behind myofascial compression interventions?



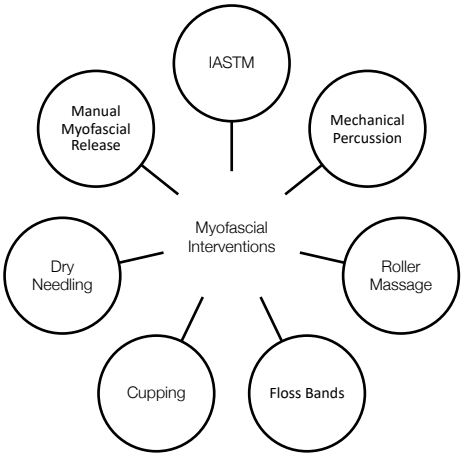

Scientific Theories
Mechanical
Neuro-Physiological
Mechanical compression to the local myofascia effects the tissue viscoelastic properties. Other mechanisms involved may include changes in thixotropy, reduced MF restriction, trigger points, fluid changes, cellular responses, and fascial inflammation.
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
Afferent stimulus to CNS
CNS processes signal
Efferent Neurophysiological response
Pain – Decrease
Muscle/Joint-Greater ROM
Myofascia- Decreased Stiffness
Function- Increased Movement Efficiency

Summary



Common Myofascial Compression Interventions



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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.

CONTINUED

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:

Myofascial Release
Western Medicine

Medical Treatment/Detoxification
Asian/Arabic/Greek Medicine

CONTINUED

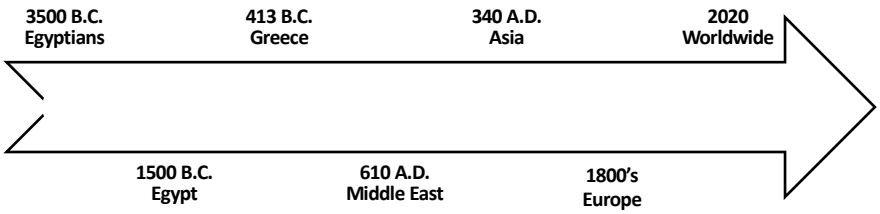
Module II: Cupping

CONTINUED

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



Elsubai et al. History of cupping (Hijama): a narrative review of the literature. J Int Med. 2017

What are the clinical standards for cupping?

CONTINUED

Treatment Objectives

- Rationale:
  - Cupping uses suction to help promote movement of blood and other fluids through the tissues.
- Traditional Thought:
  - Cupping is a form 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.

CONTINUED

- 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
  - Aboushanab and Alsanad. Cupping Therapy: An Overview From a Modern Medicine Perspective. J Acupuncture Meridian Stud. 2018
  - Mehta and Dhapte. Cupping therapy: A prudent remedy for a plethora of medical ailments, J Trad Compl Med. 2015

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 factures
- Congestive heart disease, circulatory disorders
- Patient intolerance, hypersensitivity, high pain sensation
- Anti-coagulants, hormone replacement, fluoroquinolone antibiotics
- Lymphadema
- 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 1 Classification of cupping therapy adverse events.

Preventable cupping adverse event	Nonpreventable cupping adverse event
Scar formation	Koebner phenomenon
Burn	Headaches
Bullae formation	Dizziness
Abscess and skin infection	Tiredness
Pruritus	Vasovagal attack
Anemia	Nausea
Panniculitis	Insomnia

- Aboushanab and Alsanad. Cupping Therapy: An Overview From a Modern Medicine Perspective. J Acupuncture Meridian Stud. 2018

continued

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

continued

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

Technical Types	Suction Types	Suction Method	Adjunct Therapies	Specific Treatment
Dry cupping	Light cupping	Fire cupping	Needle cupping	Cosmetic cupping
Flash cupping	Medium cupping	Manual suction	Moxa cupping	Sports cupping
Wet cupping	Strong cupping	Automatic suction cupping	Herbal cupping	Pedi cupping
Massage cupping	Pulsatile		Magnetic cupping	Abdominal cupping
			Laser cupping	Facial cupping
			Electrical stim cupping	Male/female cupping
			Water cupping	
			Aquatic cupping	

CONTINUED

What are the current recommendations for cupping hygiene?

CONTINUED

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

Center for Disease Control Levels of Disinfection	
High-level disinfection	These disinfectants kill all organisms, except high levels of bacterial spores, and is effected with a chemical germicide cleared for marketing as a sterilant by FDA. Typically, they are not used for generalized disinfecting.
Intermediate-level disinfection	These disinfectants kill mycobacterium, most viruses, and bacteria with a chemical germicide registered as a "tuberculocide" by EPA.
Low-level disinfection	These disinfectants kill some viruses and bacteria such as HIV and HBV with a chemical germicide registered as a hospital disinfectant by the EPA.
EPA: Environmental Protective Agency	

CONTINUED

Cupping Safe Treatment Sequence Recommendations	
Step 1	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.
Step 2	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.
Step 3	The cupping treatment is administered using PPE procedures, as needed.
Step 4	During the prescribed treatment, the professional monitors for changes in the patient's status (e.g., petechiae, sensitivity to treatment, etc.)
Step 5	Upon completion of treatment, the body region is re-inspected and cleaned again using a sanitizing wipe or isopropyl alcohol.
Step 6	The professional concludes with post treatment hand hygiene, disposing of any PPE, and cleaning of the cups using an intermediate level disinfectant.

CONTINUED

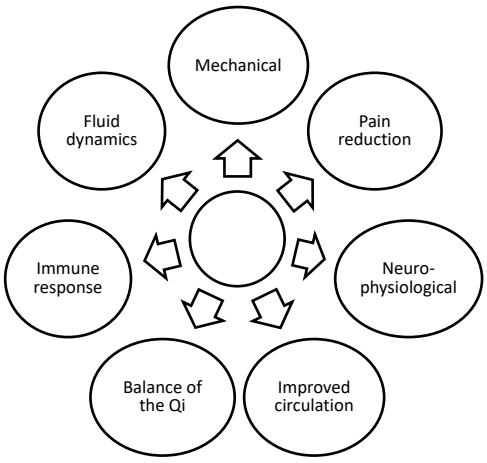
Bottom Line

- 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)

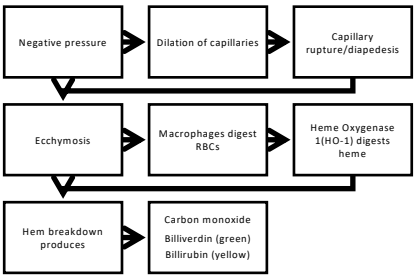
What are the proposed physiological responses that occur from cupping?

Cupping Physiological Responses

Cellular Effects



Physiological Effects



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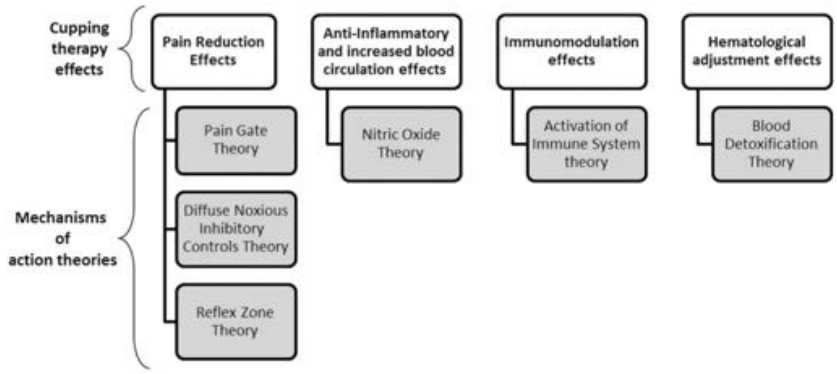
Cupping Physiological Responses



Bedal et al. The medical perspective of cupping therapy: Effects and mechanisms of action. J Trad Complemt Med. 2019

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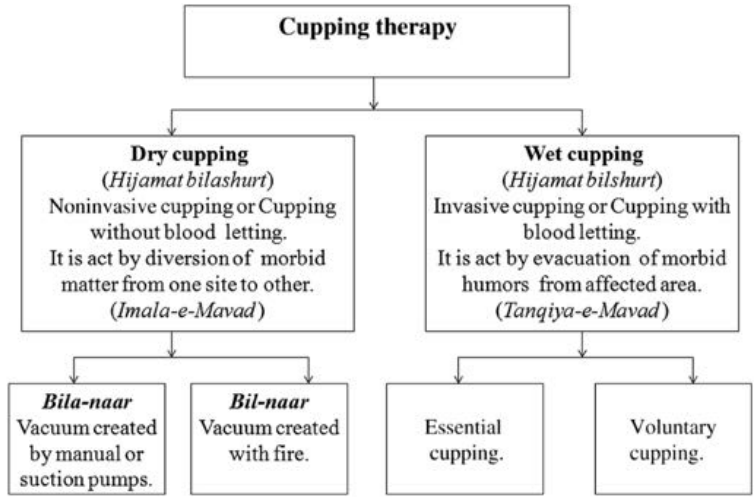
What are common clinical practice patterns among professionals?



Mehta and Dhapte. Cupping therapy: A prudent remedy for a plethora of medical ailments, J Trad Compl Med. 2015

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

Mehta and Dhapte. Cupping therapy: A prudent remedy for a plethora of medical ailments, J Trad Compl Med. 2015

Left image by: Alanna Ralph from Philadelphia, PA, USA / CC BY (https://creativecommons.org/licenses/by/2.0)

Image by Zthedenspa from Pixabay

Image by Zthedenspa from Pixabay

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

Evidence Levels	Grading Criteria	
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

2000 ⇨ 2020

Systematic Reviews

- Reviews:
- 2020- Cramer et al. J Pain
- 2019- Shuting et al. Clin Exp Hypertens.
- 2019- Hudgins et al. J Bodw Mov Ther.
- 2018- Moura et al. Rev Lat Am Enfermagem.
- 2018- Kim et al. BJM Open.
- 2018- Shi-Yu et al. Complement Ther Clin Pract.
- 2018- Yu-Ling Wang et al. Complement Med Res.
- 2018- Bridgett et al. J Altern Complement Med
- Consensus:
- Mixed methods = mixed results
- Moderate to weak evidence for therapeutic benefits
  - Dry Cupping: Neck and Chronic LBP, Ankolysis Spondylitis, Arthritis
  - Dry Cupping: Flexibility, Mobility, Performance, Chronic Pain
  - Wet Cupping: Hypertension, NSLBP, Neck Pain, CTS

Evidence Grade = 1

CONTINUED

Clinical Studies

2019 ⇨ 2020

CONTINUED

Cupping Research

- Combined Intervention
- Myofascial Dysfunction/Trigger Points: (+ dry and massage)
  - 2020- Nasb et al. J Altern Complement Med
- Single Intervention
- Hamstring Flexibility: (- dry)
  - 2019- Williams et al. J Sport Rehabil
- Chronic LBP: (+ wet and dry)
  - 2019- Al-Eidi et al. J Acupunct Meridian Stud
- Non-Specific LBP: (+ wet)
  - 2019- Mardani-Kivi et al. Chin J Intergr Med
- Carpel Tunnel Syndrome: (+ dry)
  - 2019- Mohammadi et al. Physiother Res Int.

Evidence Grade = 2

continued

Cupping Research

Interventions	Parameters
Treatment duration	5-30 minutes
Outcome measures	Variable: Pain (0-10), ROM, Function, Questionnaires
Long-Term Outcomes	Variable: No-long term efficacy (e.g. 4 wks HTN patients)

Evidence Grade = 1

continued

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

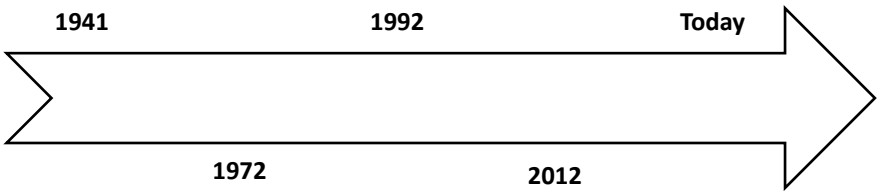
B-

Module III: Dry Needling

Nomenclature

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

History of Dry Needling



Unvertzagy et al. Dry needling for myofascial trigger pain: a clinical commentary. IJSPT 2015

What are the clinical standards for dry needling?

CONTINUED

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.

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Dry Needling versus Acupuncture

	Dry Needling	Acupuncture
Origin	Western Medicine	Eastern Medicine
Treatment Rationale	MF trigger points	Qi and energy meridians
Licensure	PT/Acupuncturist	Acupuncturist
Accepted States	Not all 50	All 50 states
Types of needles	Similar	Similar
Precautions/Contraindications	Similar	Similar

Most Obvious Contraindications

Relative

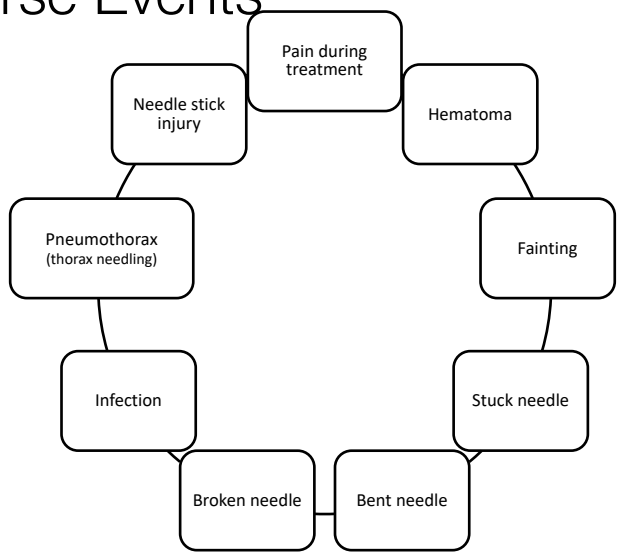
- Abnormal bleeding
- Compromised immune system
- Heart/vascular disease
- Pregnancy/children
- Frail patients
- Epilepsy/psychological status
- Diabetes/neuropathy
- Allergies
- Medications
- Lung region?

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?
- Caner/malignancy
- Neurological conditions?

APTA. Description of dry needling in clinical practice: an educational resource paper. 2013
Dommerholt J., Fernandez-de-las-Penas C. Trigger Point Dry Needling. An Evidenced and Clinical-Based Approach. Churchill Livingstone-Elsevier, 2013

Adverse Events



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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

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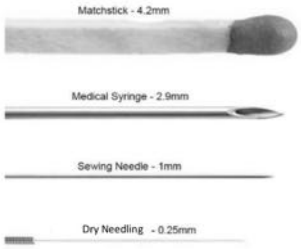
What are the different types of dry needles?

CONTINUED

Dry Needles

Image by: U.S. Air Force photo by Airman 1st Class Ceaira Tinsley/Released



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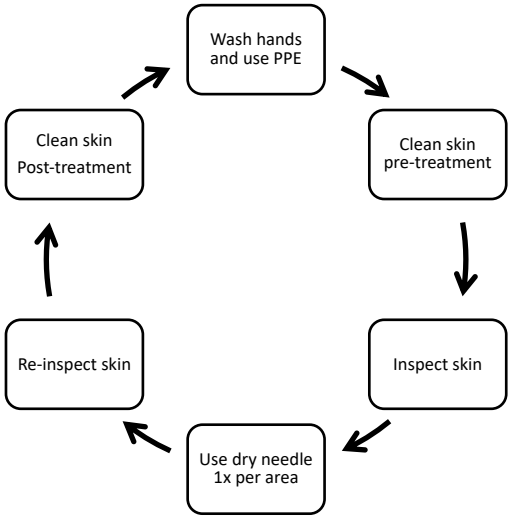
What are the current recommendations for dry needling hygiene?

Dry Needling Hygiene



Dry Needling Safe Treatment Sequence Recommendations	
Step 1	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.
Step 2	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.
Step 3	The dry needling treatment is administered using PPE procedures, as needed.
Step 4	During the prescribed treatment, the professional monitors for changes in the patient's status (e.g., petechiae, sensitivity to treatment, etc.)
Step 5	Upon completion of treatment, the body region is re-inspected and cleaned again using a sanitizing wipe or isopropyl alcohol.
Step 6	The professional concludes with post treatment hand hygiene, disposing of any PPE, and cleaning of the cups using an intermediate level disinfectant.

CONTINUED

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)

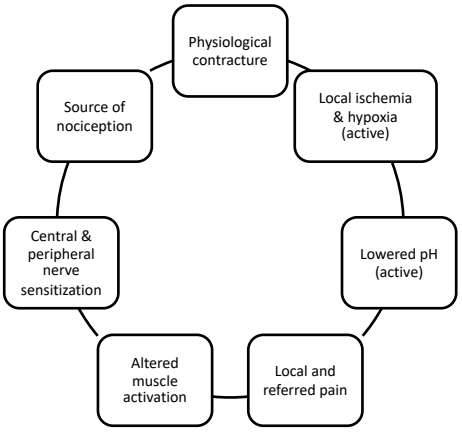
Australian Society for Acupuncture Physiotherapists. Guidelines for Safe Acupuncture and Dry Needling Practice. 2013

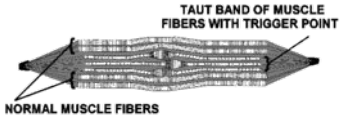
CONTINUED

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



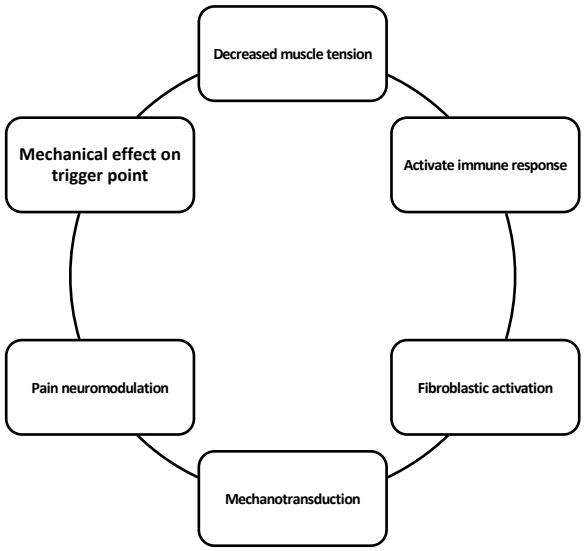


Trigger points

- 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

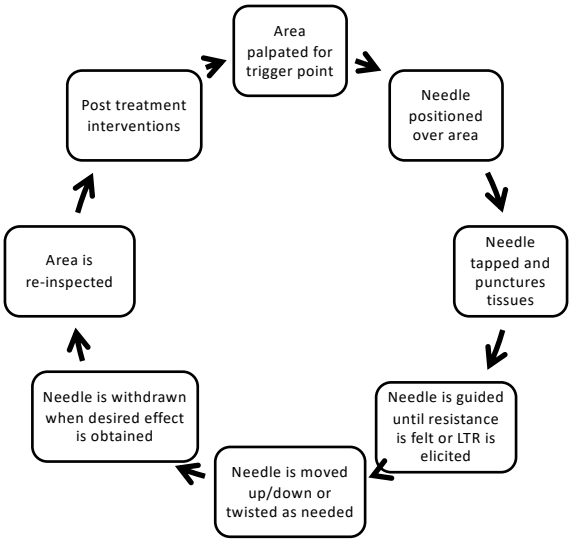


What are common clinical practice patterns among professionals?

Common Conditions

Radiculopathies	Joint dysfunction	Disc pathology
Tendonitis	Mandibular dysfunction	Migraines
Tension-type headaches	Carpel tunnel syndrome	Computer related disorders
Whiplash	Spine dysfunction	Pelvic pain/urological
Post-herpetic neuralgia	Complex regional pain syndrome	Nocturnal cramps
Phantom pain	Neurological disorders	Others

Common Procedure



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

CONTINUED

Dry Needling Video Example

CONTINUED

Bottom Line

- Professional practice patterns do follow the research and guidelines
  - Treatment is often individualized

Dry Needling Research

Levels of Evidence

Evidence Levels	Grading Criteria	
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	

CONTINUED

What does the dry needling research suggest?

CONTINUED

Literature Review

2000 ⇨ 2020

CONTINUED

Systematic Reviews

- 2020: Vazquez-Justes et al. Neurologia
- 2020: Vander Doelen and Jelley. J Sci Med Sport
- 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

CONTINUED

Systematic Reviews

Interventions	Parameters
Treatment technique	Dry needling (variable techniques)
Treatment duration	Variable: 10-30 minutes??
Outcome measures	Variable: Pain (0-10), Questionnaires, Clinical Measures
Long-Term Outcomes	12 weeks (pain reduction)

Outcomes:

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

Evidence Grade = 1

CONTINUED

Clinical Studies

2019 → 2020

CONTINUED

Dry Needling Research

- Myofascial Dysfunction/Trigger Points:
  - 2019- Luan et al. Am J Phys Med Rehabil
  - 2019: Mansafnezhad et al. J Back Musculoskelet Rehabil
  - 2019: Kutuk et al. J Craniofac Surg
  - 2019- Tabatabaiee et al. J Back Musculoskelet Rehabil
  - 2019- Walsh et al. J Bodw Mov Ther
- Piriformis Syndrome:
  - 2019- Tabatabaiee et al. Muscle Nerve
- Osteoarthritis:
  - 2019- Ceballos-Laita et al. Musculoskelet Sci Pract
- Plantar Fasciitis:
  - 2019- Uygur et al. J Foot Ankle Surg
  - 2019- Al-Boloushi et al. J Orthop Surg Res

Evidence Grade = 2

CONTINUED

Dry Needling Research

- Shoulder Impingement:
  - 2019- Kamali et al. J Sport Rehabil
- Shoulder (subacromial pain):
  - 2019- Hando et al. Braz J Phys Ther
- Neck Pain/Facial Pain
  - 2019- Martin-Rodriguez et al. Acupunct Med
  - 2019- Dalewski et al. Pain Res Manag
- Headaches:
  - 2019- Gildir et al. Medicine
  - 2019- Kamali et al. J Bodw Mov Ther

Evidence Grade = 2

CONTINUED

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+

CONTINUED

Module III:
Manual Myofascial Release

CONTINUED

Nomenclature

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

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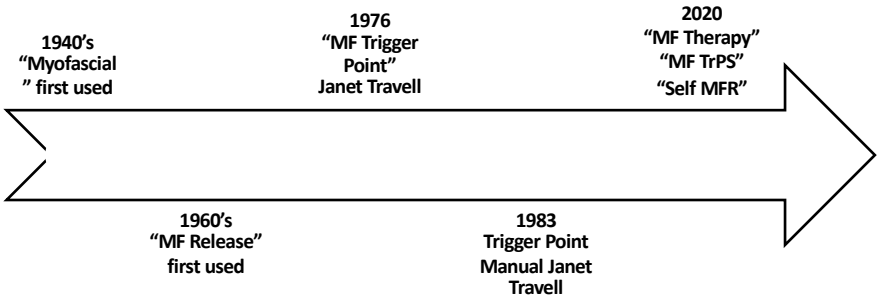
History of Manual Myofascial Release



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- 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

CONTINUED

What are the clinical standards for myofascial release?

CONTINUED

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

Evidence Levels	Grading Criteria	
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	

CONTINUED

Clinical Studies

2015 ⇨ 2020

CONTINUED

Myofascial Release Therapy

- 2019: Cathcart et al. J Bodyw Mov Ther
- 2019: Arguisuelas et al. Clin Biomech
- 2019: Pecos-Martin et al. Acupunct Med
- 2019: Sera-Ano et al. Support Care Cancer
- 2018: Liami et al. Clin Rehabil
- 2018: Wasserman et al. J Bodyw Mov Ther
- 2015: Ajimsha et al. J Bodyw Mov Ther

Interventions	Parameters
Treatment technique	Variable, often combined with other interventions
Treatment duration	Variable among studies
Outcome measures	Variable: Pain (0-10), Questionnaires, Function
Long-term outcomes	Poorly reported

Evidence Grade = 2

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

Trigger Point Therapy Ischemic Compression

- 2019: Laroshevsky et al. Wiad Lek
- 2018: Liami et al. Clin Rehabil
- 2018: Wasserman et al. J Bodyw Mov Ther
- 2015: Cagnie et al. Arch Phys Med Rehabil
- 2015: Takamoto e al. Eur J Pain

Interventions	Parameters
Treatment technique	Ischemic compression (TP site)
Treatment duration	15-60 seconds of compression (i.e. 6 reps)
Outcome measures	Pain (0-10), ROM, strength, pain, questionnaires
Long-Term Outcomes	6 months

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

Evidence Grade = 2

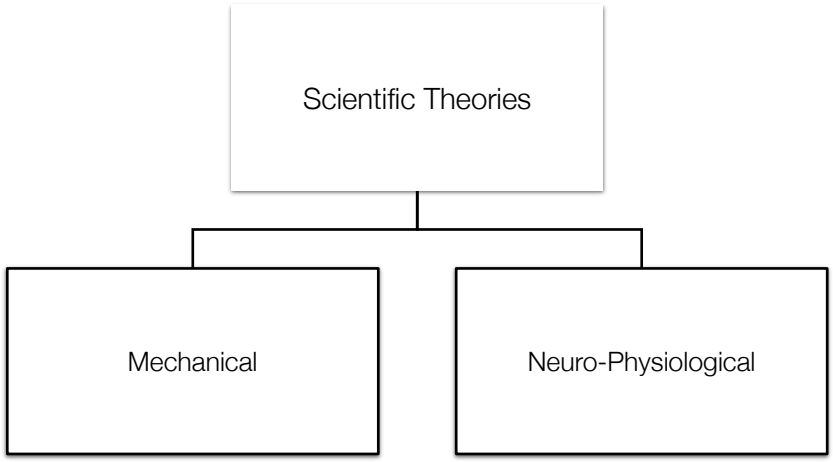
Bottom Line

- 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



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Myofascial Interventions Interchangeability








CONTINUED

Thanks!!!

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PubMed Citations

https://pubmed.ncbi.nlm.nih.gov/?term=cheatham%20SW

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References

- Ajimsha MS, Al-Mudahka NR, Al-Madzhar JA. Effectiveness of myofascial release: systematic review of randomized controlled trials. J Bodyw Mov Ther. Jan 2015;19(1):102-112.
- Black DW. Treatment of knee arthrofibrosis and quadriceps insufficiency after patellar tendon repair: a case report including use of the graston technique. Int J Ther Massage Bodywork. 2010;3(2):14-21.
- De Groef A, Van Kampen M, Dieltjens E, et al. Effectiveness of Postoperative Physical Therapy for Upper-Limb Impairments After Breast Cancer Treatment: A Systematic Review. Arch Phys Med Rehabil. Jan 13 2015.
- Gulick DT. Influence of instrument assisted soft tissue treatment techniques on myofascial trigger points. J Bodyw Mov Ther. Oct 2014;18(4):602-607.
- Kietrys DM, Palombaro KM, Azzaretto E, et al. Effectiveness of dry needling for upper-quarter myofascial pain: a systematic review and meta-analysis. J Orthop Sports Phys Ther. Sep 2013;43(9):620-634.
- Laudner K, Compton BD, McLoda TA, et al. Acute effects of instrument assisted soft tissue mobilization for improving posterior shoulder range of motion in collegiate baseball players. Int J Sports Phys Ther. Feb 2014;9(1):1-7.
- Liu L, Huang QM, Liu QG, et al. Effectiveness of Dry Needling for Myofascial Trigger Points Associated With Neck and Shoulder Pain: A Systematic Review and Meta-Analysis. Arch Phys Med Rehabil. Jan 7 2015.
- Looney B, Srokose T, Fernandez-de-las-Penas C, et al. Graston instrument soft tissue mobilization and home stretching for the management of plantar heel pain: a case series. J Manipulative Physiol Ther. Feb 2011;34(2):138-142.
- Lucas N, Macaskill P, Irwig L, et al. Reliability of physical examination for diagnosis of myofascial trigger points: a systematic review of the literature. Clin J Pain. Jan 2009;25(1):80-89.
- McKenney K, Elder AS, Elder C, et al. Myofascial release as a treatment for orthopaedic conditions: a systematic review. J Athl Train. Jul-Aug 2013;48(4):522-527.
- Miners AL, Bougie TL. Chronic Achilles tendinopathy: a case study of treatment incorporating active and passive tissue warm-up, Graston Technique, ART, eccentric exercise, and cryotherapy. J Can Chiropr Assoc. Dec 2011;55(4):269-279.

References

- Jay, K., Sundstrup, E., Sondergaard, S. D., Behm, D., Brandt, M., Saervoll, C. A., Jakobsen, M.D., & Andersen, L. L. (2014). Specific and cross over effects of massage for muscle soreness: Randomized controlled trial. Int J Sports Phys Ther, 9(1), 82-91.
- Kim, J.-E., Cho, J.-E., Do, K.-S., Lim, S.-Y., Kim, H.-J., & Yim, J.-E. (2017). Effect of cupping therapy on range of motion, pain threshold, and muscle activity of the hamstring muscle compared to passive stretching. Journal of the Korean Society of Physical Medicine, 12(3), 23–32. http://doi.org/10.13066/kspm.2017.12.3.23
- RockTape (2018). RockPods Course Notes [Lecture notes]. https://www.rocktape.com/medical/education/fmt-rockfloss-rockpods/
- Ross, S., & Kandassamy, G. (2017). The effects of 'tack and floss' active joint mobilisation on ankle dorsiflexion range of motion using Voodoo Floss bands. Journal of Physical Therapy.
- Wang, Y.T., Qi, Y., Tang, F.U., Li, F.M., Li, Q.H., Xu, C.P., Xie, G.P., & Sun, H.T. (2017). The effect of cupping therapy for low back pain: A meta-analysis based on existing randomized controlled trials. Journal of Back & Musculoskeletal Rehabilitation, 30(6), 1187–1195. https://doi.org/10.3233/BMR-169736
- Yim, J., Park, J., Kim, H., Woo, J., Joo, S., Lee, S., & Song, J. (2017). Comparison of the effects of muscle stretching exercises and cupping therapy on pain thresholds, cervical range of motion and angle: a cross-over study. Physical Therapy Rehabilitation Science, 6(2), 83–89. http://doi.org/10.14474/ptrs.2017.6.2.83
- Zhuang, X., Tan, S., & Huang, Q. (2014). Understanding of myofascial trigger points. Chin Med J (Engl), 127(24), 4271-4277. http://doi.org/10.3760/cma.j.issn.0366-6999.20141999