Game Changing Concepts
11/14/18

Major League Soft Tissue Modalities

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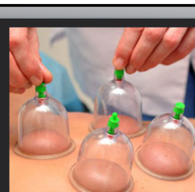
Overview



- Cupping
- IASTM
- Bands
- Hands

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Three-Dimensional Mathematical Model for Deformation of Human Fasciae in Manual Therapy

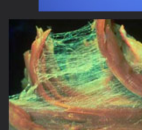
IASTM Using to treat

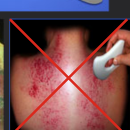
- NOT breaking up scar tissue with compression (Hans et al 2008)

To change fascia by 1% in ITB/Plantar Fascia

- Normal load > 2,000lbs, tangential force >1,000 lbs
- Normal load > 1,800lbs, tangential force > 900 lbs
- “require very large forces—far outside the human physiologic range”

- High Force Not needed





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ACUTE EFFECTS OF INSTRUMENT ASSISTED SOFT TISSUE MOBILIZATION FOR IMPROVING POSTERIOR SHOULDER RANGE OF MOTION IN COLLEGIATE BASEBALL PLAYERS

35 Collegiate BB Players

17 IASTM vs. 18 control

Purpose: effectiveness of IASTM on GH H. adduction and IR immediately after tx

Only acute effects

Similar to Moore et al. (JOSPT 11')

- 6.8 deg h adduction
- 4.2 deg IR

Table 2. *Glenohumeral horizontal adduction range of motion**

Group	Pretest	Posttest	Difference	P Value
IASTM	-10.9 ± 5.8	0.2 ± 6.3	+11.1†	< 0.001
Control	-10.4 ± 4.2	-10.6 ± 4.4	-0.12	

Table 3. *Glenohumeral internal rotation range of motion**

Group	Pretest	Posttest	Difference	P Value
IASTM	42.4 ± 10.8	47.2 ± 9.2	+4.8†	< 0.001
Control	41.6 ± 8.0	41.5 ± 9.1	-0.14	

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Rhomboids/Subscap/Serratus

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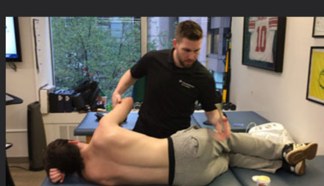
LAT/Teres & Pec



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Instrument Video

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Cupping

Thought to date back to 3000 BC

Safe with minimal adverse events

Wet vs Dry Cupping

Biomechanical and neurophysiological effects

Larger cups exert more stress

Used to affect pain:

decreasing pain → increase mobility from decreased threat → altered movement patterns restored

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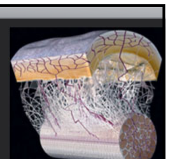
Cupping



Causing tissue distraction

- Different type of stimulus
- Skin mobility
- Separate tissue layers
- Scar tissue
- Move fluid
- Improve circulation

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Medicupping
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Cupping videos
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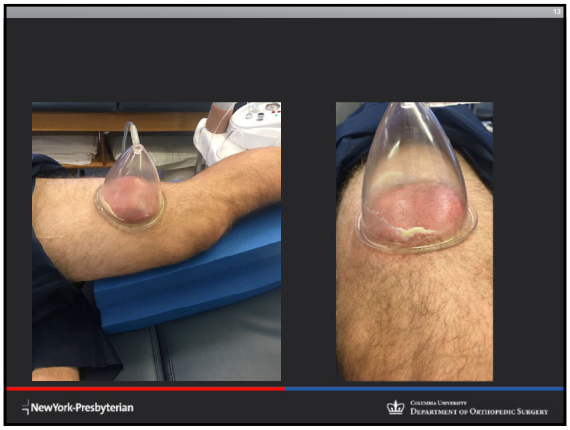
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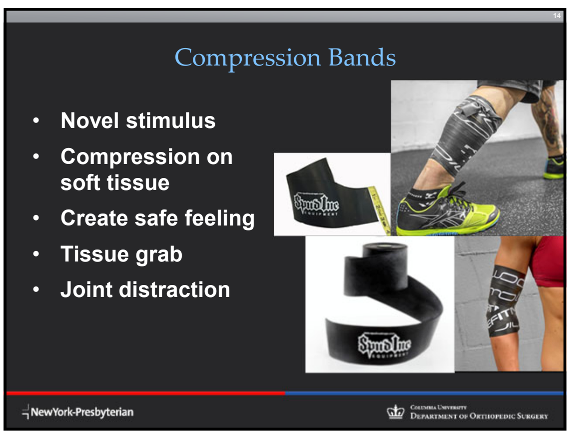
Compression Bands
• Novel stimulus
• Compression on soft tissue
• Create safe feeling
• Tissue grab
• Joint distraction
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Compression Bands
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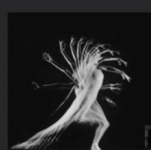
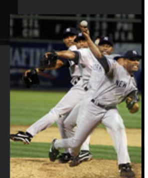
Hip Mobility with Banding

Summary

- **Trying to create a safe/novel stimulus**
- **Help decrease pain**
- **Create a window of opportunity**
- **Improve movement quality**
- **Maximize strength/hypertrophy**
- **Minimizing atrophy**





Manipulation

- **Decrease pain**
  - Induced analgesia
- **Sympathetic and parasympathetic effects on vasculature**
- **Neurophysiological**
  - Immediate reflex responses
  - Resetting of muscle spindles

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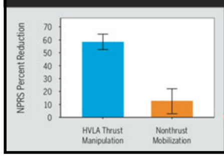
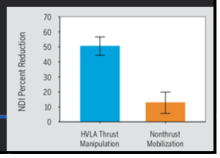
Upper Cervical and Upper Thoracic Thrust Manipulation Versus Nonthrust Mobilization in Patients With Mechanical Neck Pain: A Multicenter Randomized Clinical Trial

Variable	Preintervention: HVLA Thrust Manipulation Group (n = 56)	Preintervention: Nonthrust Mobilization Group (n = 51)	Postintervention: HVLA Thrust Manipulation Group (n = 56)	Postintervention: Nonthrust Mobilization Group (n = 51)
NPRS[†]	5.3 ± 1.7	5.3 ± 2.0	2.3 ± 1.5	4.4 ± 1.7
NDI[‡]	21.7 ± 8.2	21.3 ± 8.8	10.8 ± 6.0	18.4 ± 8.6
FRT right, deg[§]	28.0 ± 7.7	29.7 ± 6.9	36.4 ± 6.4	33.1 ± 9.7
FRT left, deg[§]	31.0 ± 7.3	29.7 ± 6.8	36.9 ± 6.1	32.2 ± 7.2
CCFT, mmHg[‖]	24.1 ± 2.1	23.7 ± 2.0	27.5 ± 2.1	24.9 ± 2.6





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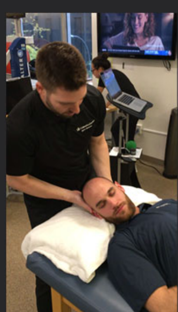
Occiput/Atlas



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Junctions

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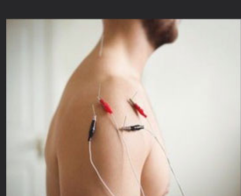
Ribs/Lumbar

Chaining Together

- **Manipulation**
- **Soft tissue techniques**
  - Cupping
  - IASTM
  - Banding
- **Mobility**

- **Improved motion with decreased pain/threat to system**
- **Back up motion actively**
- **Strengthen**

Dry Needling



EFFECTS OF DRY NEEDLING

PAIN MODULATION

- Central effects via opioid, cannabinoid release *Binder 2004, Guo 2010, Zhang 2012*
- ACh clearance at NM junction of MTrP *Hsieh 2011, Kuan 2007*
- Peripheral effects via decreasing dorsal receptive field size and mechanical sensitivity *Gillette 1998*

SOFT TISSUE HEALING

- Fibroblast stimulation -> collagen synthesis *Almeida 2014, Kook 2009*
- Vasodilation *Lundeberg 2013*

ANTI-INFLAMMATORY EFFECTS

- Regulation of CGRP and substance-P *Zijlstra 2003*
- Reduction of inflammatory cytokines *Ahsin 2009*

SOFT TISSUE REALIGNMENT (RESTRUCTURING)

- Tissue grasp with needle winding -> alignment of collagen *Langevin 2001, 2011*

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Review — Open Access

Peripheral and Spinal Mechanisms of Pain and Dry Needling Mediated Analgesia: A Clinical Resource Guide for Health Care Professionals

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Thank You

AMAZING THINGS ARE HAPPENING HERE

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