



Some Questions

- How many of you regularly do soft tissue work on your patients?
- How many of you are certified in a particular soft tissue technique?
- What are you looking to get out of this class?
- Is there something in particular you would like me to cover?











YOU WILL ONLY GET OUT OF THIS SEMINAR WHAT YOU PUT INTO IT.





THE MUSCULOSKELETAL PROBLEM



MOST COMMON CAUSE OF SEVERE LONG TERM PAIN

- ENORMOUS BURDEN ON WORLD ECONOMY
- LBP 2ND MOST COMMON REASON FOR VISIT TO PCP (UNITED STATES)

<section-header> **THE MUSCULOSKELETAL PROBLEM MECHANICAL CONDITIONS THAT REDUCE MOBILITY: 1. 1**

MULTI-ARTICULAR (CROSS MORE THAN 1 JOINT)

| THE MUSCULOSKELETAL PROBLEM |
|-----------------------------------|
| |
| MECHANICAL CONDITIONS THAT REDUCE |
| MOBILITY: |
| 1 IOINT MOBILITY |
| DYSELINCTIONS (IMDS) |
| OSTEOARTHRITIS |
| OSTEOARTHROSIS |
| UNI-ARTICULAR MUSCLE SPASM AND |
| GUARDING |
| FUSION |
| ADHESIVE CAPSULITIS |
| DISLOCATION |
| |

THE MUSCULOSKELETAL PROBLEM MECHANICAL CONDITIONS THAT REDUCE MOBILITY: 1. JOINT MOBILITY DYSFUNCTIONS (JMDS) 2. TISSUE EXTENSIBILITY DYSFUNCTIONS (JMDS) 2. TISSUE EXTENSIBILITY DYSFUNCTIONS (TEDS) SCARRING & FIBROSIS FASCIAL TENSION DENSIFICATION OF TISSUE LAYERS NEURAL TENSION MUSCLE HYPERTONICITY HYPERTROPHY TRIGGER POINT ACTIVITY REFERENCE: COOK, GREY <u>MOVEMENT</u> 2011















1990 - One on One Fitness

 David specialized in training injured NFL athletes like Ron Solt as a Personal Trainer using the Roller Concept and then developed the first Instruments with handles and two blades that fit body parts. Also used Weak-Link Training Concept this allowed Ron Solt to became NFL comeback player of the year!





1990 - Early Development of I.A.S.T.M. Instrument Assisted Soft Tissue Mobilization

 The roller concept evolved into curvilinear instruments with beveled edges acting as a roller for maximum coverage. The instruments also possessed a bladed edge for separation and splaying of soft tissue. The instruments were designed using aluminum as the material.







2000 - Carpal Therapy SASTM.com

- 3 Years after David left (to fulfill a noncompete agreement), Carpal Therapy, Inc. was opened in Sept. of 2000
- Carpal Therapy conducts research and development, manufactures and quality controls all products and seminars via SASTM.com.



<u>Considerations in choosing a soft tissue</u> <u>instrument.</u>

- Material: Stainless steel, wood, aluminum, bone, stone, resin, ceramic polymer, seashell, plastic,???
- Weight, ergonomics, texture of part you hold.
- Durability.
- Can it be sterilized.
- Patient feel.
- Multi edge or single edge.
- Shape of the treatment edges.
- What comes with the tool(s)? Case, manual, website, training,
- Replacement policy
- COST\$\$\$\$\$\$\$\$\$\$\$\$
- The company behind the tools.

More Considerations...

-Metal vs Ceramic Polymer

vs Plastic

•Stainless steel tools cost more, are heavier, but more durable, and can be sanitized easier. (Casted or Cut Steel) •Ceramic Polymer tools are more comfortable to hold, cost less, but can break if dropped on a hard surface.

-Single Edge vs Multi Edge

Single edge tools are built to be more specific to different uses and different contours of the body.
Multi edge tools are built to have the "all in one" idea.
One tool is able to do all aspects of the body. May not be as specifically made to fit contours of the body.

More Considerations...

-Single Bevel vs Double Bevel vs Non Bevel

Single bevel tools have a treatment edge designed to be used at a 30-40 degree angle to the tissue being treated. They usually have a sharper edge than others to have a greater sensitivity. Single beveled tools usually provide treatment in only one direction with a lighter return stroke.
Double bevel tools have an edge designed to be used at a 45 degree angle or perpendicular to the treatment tissue, and can typically be used in both directions without turning the tool around. They are usually made with a greater angle (about 45 degrees) so they can be used with a greater pressure into the tissue.
Non Bevel tools are usually used for a "rolling" technique on the soft tissue being treated. This is typically less

invasive to the area treated.





4 Most Common Mistakes in IASTM

- Gripping the instrument too hard
- Too much emollient
- Not specific in treating the appropriate tissue
- Looking for the wrong result
 - Petechiea/Bruising

Instrument Assisted Soft Tissue Mobilization

- Better than ART[®] for densely restricted tissue, post operative scar tissue and tendinosis. Can be used on many soft tissue conditions.
- Treatment is applied in multiple directions.
- A lubricant must be used.
- Best outcomes are achieved when used with eccentric exercises.
- A vibratory sensation is felt by the doctor and patient when the tool is passed over fibrotic tissue.
- Either technique can produce an ecchymosis response.

Additional soft tissue techniques

Kinesiotape

- Self treatment methods; self stretching, foam roller, the roller stick, tennis or lacrosse ball.
- Fascial movement via yoga, tai chi, etc.
- FAKTR (Functional And Kinetic Treatment with Rehab)
- PRP (Platelet-Rich Plasma) Injections
- Prolotherapy
- Cupping
- ESWT (Extracorporeal Shock Wave Therapy)
- LLLT (Low Level Laser Therapy)
- Voodoo Taping
- Astym
- Blood Flow Restriction

Cupping

One of the earliest documentations of cupping can be found in the work titled A Handbook of Prescriptions for Emergencies, which was written by a Taoist herbalist by the name of Ge Hong and which dates all the way back to 300 AD

It is thought to affect tissues up to four inches deep from the external skin. Toxins can be released, blockages can be cleared, and veins and arteries can be refreshed within these four inches of affected materials. Even hands, wrists, legs, and ankles can be 'cupped,' thus applying the healing to specific organs that correlate with these points.

The suction and negative pressure provided by cupping can loosen muscles, encourage blood flow, and sedate the nervous system

Cupping

• 1. Clean thoroughly, remove body hair.

2. Wash cups and target areas on skin with warm, lightly salty water, and dry before cupping.

3. Before performing cupping procedure with a suction cup, make sure the inside of the cup is clean and the assembly is intact (valve and seal are firmly fastened to cup).

4. Select an appropriate size or type of cup. (Smaller cups are for smaller body areas).

Cupping (cont.)

6. Connect the connecters Cups may be moved while attached, the cream or oil acting as a lubricant. This allows for cupping of larger areas, or to adjust the placement of the cup for optimal cupping. When moving a cup, grip the cup low on the bowl, and use the fingers of the non-pulling hand to gently hold the skin taut behind the cup as it moves.

7. The cups can be used individually or in combination according to your preference.

8. After the desired elapsed time, simply release the pressure in the cup by pulling up on the cup's valve to release vacuum. Always use this method to release cup gently (rather than wrenching it away suddenly) to prevent skin damage.

9. It is normal for darkening to appear on the skin where cups are applied. This will dissipate in a few days.

Contraindications to Cupping

- Do not use cupping on individuals equipped with a cardiac pacemaker
- Do not apply cupping to subjects who are tired or hungry
- Do not apply cupping on swollen, bruised or ulcerated skin

<u>The following should receive cupping</u> <u>only on the advice of a physician:</u>

- Individuals with hemophilia, thrombocytopenia or other diseases which may cause bleeding
- Pregnant women
- Individuals with allergic skin reactions

Cautions:

- If subject experiences dizziness or fainting during cupping, stop application immediately, give subject fluids and rest.
- Limit application to 15 minutes.
- For those with tender skin, lessen the cupping time to avoid blistering the skin
- If any blistering or infection occurs during/after cupping, ensure proper first aid and/or medical attention as appropriate.
- Discoloration of the skin after cupping is normal. It will disappear after a few days.

Care and Storage

- Keep cups away from sources of high heat
- For cups equipped with magnetic points, keep them at least a foot away from products easily affected by magnetism, such as electronic equipment, watches, etc.

INSTRUMENT ASSISTED SOFT TISSUE MOBILIZATION (IASTM)

TREATMENT EFFECTS OF IASTM:

- 1. BREAK UP ABNORMAL DENSITIES IN TISSUE
- 2. STIMULATE THE NERVOUS SYSTEM
- 3. REINITIATE FIRST-STAGE HEALING IN THE BODY VIA PROLIFERATION



| SECTION 3 | _ |
|---|---|
| INSTRUMENT ASSISTED SOFT TISSUE MOBILIZATION (IASTM) | |
| TREATMENT EFFECTS OF IASTM: | |
| 1. BREAK UP ABNORMAL DENSITIES IN TISSUE | |
| 2. STIMULATE THE NERVOUS SYSTEM »» DECREASE PAIN VIA PAIN GATE THEORY »» INCREASED RANGE OF MOTION »» IMPROVED PROPRIOCEPTION | |





2

SECTION 3

INSTRUMENT ASSISTED SOFT TISSUE MOBILIZATION (IASTM)

TREATMENT EFFECTS OF IASTM:

2. STIMULATE THE NERVOUS SYSTEM

| SENSORY/AFFERENT FIBERS | | | |
|------------------------------------|--|--|--|
| TYPE | FUNCTIONS | | |
| General Somatic Afferent (GSA) | These fibers carry exteroceptive (pain,temperature, light touch, vibration, tactile (2 point) discrimination and proprioceptive impulses from sensory endings in body wall, <u>skeletal muscle</u> , tendons, and joints. | | |
| General Visceral Afferent (GVA) | These fibers carry sensory impulses from visceral structures (hollow organs and glands) within the thoracic, abdominal, and pelvic cavities (non-painful regulatory signals such as p02 as well as pain and temperature). | | |
| Special Somatic Afferent (SSA) | These nerves carry sensory impulses from the special sense organs in the eye and ear (cranial nerves 2 and 8). | | |
| Special Visceral Afferent (SVA) | These fibers carry information from the olfactory and gustatory receptors (cranial nerves 1, 7 and 9). These fibers are designated as <u>visceral</u> because of their functional association with the <u>digestive tract</u> . | | |





| INSTR | SECTION 3 | STED SOFT TISSU | E MOBILIZATIO | ON (IASTM) ² |
|---|--|--|---|--|
| TREATM | IENT EFFEC | TS OF IASTM: | | |
| 2. STIM »» DEC »» MEC FOR AN »» IMP | ULATE THE REASE PAIN CHANORECI I INCREASEI ROVED PRO | NERVOUS SYST I VIA PAIN GATE EPTOR STIMULA D RANGE OF MO PRIOCEPTION Mechanorece | EM E THEORY ATION ALLOW DTION Ptors in Fascia | /ING |
| | | | | |
| | Receptor type | Preferred location | Responsive to | Known results of stimulation |
| | Receptor type Golgi Type I b | Preferred location Myotendinous junctions attachement areas of aponeurosesligaments of peripheral joints | Responsive to Golgi tendon organ: to muscular contraction. Other Golgi receptors: probably to strong stretch only | Known results of stimulation Tonus decrease in related striated motor fibers |
| | Golgi Type I b Pacini & Paciniform Type II | Preferred location Myotendinous junctions attachement areas of aponeurosesilgaments of peripheral joints Myotendinous junctions deep capsular layers spinal ligaments investing muscular tissues. | Responsive to Golgi tendon organ: to muscular contraction. Other Golgi receptors: probably to strong stretch only Rapid pressure changes and vibrations | Known results of stimulation Tonus decrease in related striated motor fibers Used as proprioceptive feedback for movement control. (sense of kinesthese |
| | Receptor type Golgi Type I b & Pacini form Type II Ruffini Type II | Preferred location Myotendinous junctions attachement areas of aponeurosesilgaments of peripheral joints Myotendinous junctions deep capsular layers spinal ligaments investing muscular tissues. Ligaments of peripheral joints, Dura mater outer capsular layers and other tissues | Responsive to Golgi tendon organ: to muscular contraction. Other Golgi receptors: probably to strong stretch only Rapid pressure changes and vibrations Like Pacini, yet also to sustained pressure. Specially responsive to tangential forces (lateral stretch). | Known results of stimulation Tonus decrease in related striated motor fibers Used as proprioceptive feedback for movement control. (sense of kinesthese inhibition of sympatic activity |

SECTION 3

INSTRUMENT ASSISTED SOFT TISSUE MOBILIZATION (IASTM)

TREATMENT EFFECTS OF IASTM:

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- 2. STIMULATE THE NERVOUS SYSTEM

3. REINITIATE FIRST-STAGE HEALING IN THE BODY VIA PROLIFERATION

The inducement of tissue microtrauma is believed to elicit a local inflammatory response that promotes breakdown of scar tissue, release of adhesions, synthesis of new collagen, and connective tissue remodeling (Hreljac, 2000). IASTM treatment of enzyme-induced tendinitis in rats has been shown to promote fibroblast proliferation, collagen synthesis, collagen maturation, and collagen alignment (Davidson, 1997). A study of ligament healing in rats following IASTM treatment documented greater cellularity, improved collagen alignment, fewer adhesions and granular tissue, and increased ligament strength and stiffness (Loghmani, 2009).

Loghmani and Warden (2012) demonstrated IASTM increases in blood flow and alters microvascular morphology in the vicinity of healing knee ligaments. IASTM treatment of surgically-induced knee MCL injuries increased regional tissue perfusion. The increase was not observed immediately following intervention suggesting IASTM does not lead to a direct increase in tissue perfusion due to vasodilation. In contrast, IASTM increased tissue perfusion days following treatment, an effect that persisted for 1 wk following the final IASTM intervention.



FUNCTIONAL SOFT TISSUE EXAMINATION

- Futility of listing orthopedic tests.
- Cyriax's differential analysis of passive & contractile tissue.
- Cyriax suggested doing passive testing first in order to not elicit any tonic muscle reaction that would alter active testing.
- Pellecchia GL et al. Intertester reliability of the Cyriax evaluation in assessing patients with shoulder pain. Orthop Sports Phys Ther.1996:23.

FUNCTIONAL EXAMINATION BASED ON CYRIAX PROTOCOL

I. PASSIVE TISSUE:

OWN CONTRACTILE ABILITY:

Joint capsules, bursae, fasciae, ligaments, nerve roots, dura mater..

PASSIVE EXAMINATION (Analysis)

- 1. Bone to bone end-feel. (Elbow Extension)
- 2. Soft tissue end-feel. (Elbow/Knee Flexion)
- 3. Spasm or "twang". (Fracture/Inflamed Joint)
- 4. Capsular end-feel. (Normal Shoulder/Leather)
- 5. Springy block. (Hard Rebound/loss of Knee Ext)
- 6. Empty feeling. (Feels more is possible but Pt Stops)



II. CONTRACTILE TISSUE:

Muscle belly, musculotendinous junction, body of the tendon, tenoperiosteal junction.

Use of isometric testing positions that minimize the activation of involved synergistic muscles & minimize positional pain so that maximal effort can be exerted.

CCEP Isometric Muscle Testing

CONTRACTILE EXAMINATION (Strength Grading)

- **1.** Normal strength & no pain.
- 2. Normal strength & pain.
- **3.** Definite weakness & pain.
- 4. Weakness & no pain.



| Treatme | nt of different types of muscle tightness |
|------------------------------|--|
| Reflex | Treat the cause; ie remove appendix, trt. HNP, then trt any remaining muscle problems. |
| Interneuron Trigger Point | Adjustment |
| Limbic | PIR, Ischemic compression, ART, IASTM |
| Myofascial | Yoga, meditation, biofeedback |
| | PIR, ART, IASTM |
| | |
| | |

SECTION 4

USING THE INSTRUMENTS OF SOFT TISSUE

- 1. Acute & Chronic MSK Condition
- 2. Spinal & Extremity INDICATIONS
 - 3. Physically Active Respond Bette
 - 4. Younger



 Repetitive stress or injury (SUB-ACUTE PHASE)

NSAIDS and soft tissue healing

- Almekinders LC et al. An in vitro investigation into the effects of repetitive motion and nonsteroidal antiinflammatory medication on human tendon fibroblasts. Am J of Sports Med 1995;23(1) 119-123 NSAIDS were found to decrease DNA synthesis.
- Kulik M. Oral ibuprophen: evaluation of it's effects on peritendinous adhesions and the breaking strength of a tennoraphy. J of Hand Surgery 1986; 11A:110-119 Ibuprohpen decreased the strength of tendons undergoing repair by 300% at four weeks.





| SECTION 4 | |
|-------------------|------------------------------|
| ASTM INSTRUMENT | S |
| | |
| Absolut | e Contraindications |
| | a. skin infection |
| | b. open wound |
| | c. bone fracture |
| Contraindications | d. recent suture site |
| | e. uncontrolled hypertension |
| | f. kidney dysfunction |
| | g. hematoma |
| | h. osteomyelitis |
| | i. pregnancy - 1st Trimester |






















1. SCANNING

Using the Scanner with no patient movement the clinician is feeling for restriction in the tissue (depth and direction)



2. "CLEAR THE PATH"

Using the instrument assigned for that region, the clinician works around the bony prominence or joint in all directions with no patient movement.



3. PIN AND STRETCH The instrument is placed with direct pressure on specifici tissue and the patient actively moves around the pinned tissue



4. "PRY AND LIFT"

Using Captain Hook, the clinician lifts the tissue while the patient actively moves the treated tissue.



5. GENERAL TREATMENT

Using the designated tool, the clinician places just enough pressure into the tissue (in the direction of restriction found with the scanner) that allows gliding of the instrument as the patient moves.























| Reference: Mario Novo BFR Training Manual; The Lifters Clinic | | | | | | | |
|---|---|-------------------------------|------------------------------|--|--|--|--|
| Blood Flow Restriction Training | | | | | | | |
| Comparison of HIT vs BFR +LI vs LI | | | | | | | |
| | High Intensity | BFR +LI | Low Intensity (LI) | | | | |
| Training Range | 65 - 90% 1RM | 20 - 35% 1RM | 20 - 35% 1RM | | | | |
| Muscle Damage (Creatine Kinase) | | | | | | | |
| Lactate Production (mmol) | Similar | Similar | Not Present | | | | |
| Neuromuscular Type II Recruitment | Type II Activation Near Maximal Effort | Type II Activation Submaxi | No additional recruitment | | | | |
| Growth Hormone | 100 x Increase | 1.7x > Than Hit | No Change from baseline | | | | |
| IGF-1 | | | | | | | |
| MTOR1C | Increase | Significant Increase | No Change from baseline | | | | |
| Myostatin | Down Regulation | Down Regulation | No Change from baseline | | | | |
| Time To Adaptation | 12 Weeks | 2 Weeks | ?? | | | | |

| | High intensity (HIT) | (BFR) +low intensity | Low intensity |
|--|---|---|---------------------------|
| Training range | 65 - 90% %1 RM | 20 – 35% 1 RM | 20 - 35% 1 RM |
| Muscle Damage (Creatine Kinase) | Present | Not significant | Not significant |
| Lactate production (mmol) | Similar | Similar | Not present |
| Neuromuscular (Type II recruitment) | Type II activation near maximal effort | Type II activation at sub max effort | No additional recruitment |
| Growth Hormone | 100 fold increase | 1.7 X greater than HIT | No change from baseline |
| IGF-1 | Increase | Significant Increase | No change from baseline |
| MTORIC | Increase | Significant Increase | No change from baseline |
| Mvostatin, | Down regulation | Down regulation | No change from baseline |
| Time to adaptation | 12 weeks | 2 weeks | |

| EXERCISE PRESCRIPTION | | | |
|--|--------------------------|-----------------------|--------------------------------|
| • FIND YOUR 1RM OR ESTIMATE | Number of Repetiti | Percent of 1- | M ul pl y W ei |
| • I PREFER USING A 10RM FOR SAFETY | ons Perform ed | Repetition Maximum | gh t Lif d By : |
| • Example | 1 | 95 | 1. |
| Example | 3 | 93 | 1. 08 |
| . 10 PM tost: 100lbs | 4 | 90 | 1. 11 |
| | 5 | 87 | 1. 15 |
| • 100lb x 1.33 = 133lbs | 6 | 85 | 1. 18 |
| Estimated 1 RM | 7 | 83 | 1. 2 |
| • 133 x 25 = 33 25lbs | 8 | 80 | 1. 25 |
| $122 \times 25 = 4/55$ | 9 | 77 | 1. 3 |
| • 133 X .35 = 46.55IDS | 10 | 75 | 1. 33 |
| BFR training intensity | 11 | 70 | 1. 43 |
| range of 25-35%1RM : | 12 | 67 | 1. 49 |
| 33.25 - 46.55lbs | 15 | 65 | 1. 54 |









EXERCISE PRESCRIPTION BFR

3 Exercises Away from the area - (as dynamic as possible)

1 Exercise Involving the Tissue (ROM or Specific)

1 Exercise Supporting the Tissue

Reps Scheme: 30 reps - 30s break 15 reps - 30s break 15 reps - 30s break 15 reps -



EXERCISE PROGRESSION - EXTREMITIES

Phase 1 (Days 0-3) — Reciprocal Inhibition - antagonist

Phase 2 - (Days 4-7) Isometrics (5s hold x 12-15 reps)

Phase 3 - (Days 7-10) Stretch (60 - 90s, 6 times per day)

Phase 4 - (Days 10 - 17) Eccentrically load (1 set of 40 reps 2/day

Phase 5 - (Days 17 - 24) Concentrically load (2-3 sets of 12-15 reps)

Phase 6 - (Days 24+) Dynamically load (2-3 days per week of 3 sets of 12-15)

Ten General Physical Skills

1. Cardiovascular Endurance: The Ability of body systems to gather, process and deliver oxygen.

2. Stamina: The Ability of body systems to process, deliver, store, and utilize energy.

3. Strength: The ability of a muscular unit, or combination of muscular units to apply force.

4. Flexibility: The ability to maximize the range of motion at a given joint.

5. Power: The ability of a muscular unit, or combination of muscular units, to apply maximum force in minimum time.

6. Speed: The ability to minimize the time cycle of a repeated unit.

7. Coordination: The ability to combine several distinct movement patterns into a singular distinct movement.

8. Balance: The ability to control the placement of bodies center of gravity in relation to its support base.

9. Agility: The ability to minimize transition time from one movement pattern to another.

10. Accuracy: The ability to control movement in a given direction or at a given intensity.















Voodoo Taping

1-- Wrap a band around the joint or restricted tissue creating a large compression force a few inches below and a few inches above the area (75% across area working, 50% area around)
2-- Move the limb in every direction for 2 or 3 minutes.
3-- Remove band.
4-- Repeat if necessary on and off every 3 minutes up to a half of an hour.

| SECTION # | |
|--|--------------|
| ASSESSMENT | Foot + Ankle |
| OBSERVATION: LOOK FOR CALLOUS FORMATION, SIGNS OF STRESS, MORTON'S TOE, MUSCLE IMBALANCE, TOE NAIL FUNGUS, HALLUX VALGUS | |
| PALPATION: USING YOUR HANDS, PALPATE FOR FLEXIBILITY OF CALCANEUS/BETWEEN METATARSALS/MIDFOOT/ARCHES/TMT JOINTS/MTP JOINTS | |
| RANGE OF MOTION: 1ST METATARSAL PHALANGEAL JOINT, FOREFOOT, CALCANEUS, SUBTALAR JOINT, MORTISE JOINT | |
| STRENGTH TESTING: MANUAL MUSCLE TESTING | |
| STATIC ASSESSMENT: NON WEIGHT BEARING & WEIGHT BEARING | |
| DYNAMIC ASSESSMENT: WALKING/RUNNING GAIT | |





Foot + Ankle

INTERVENTION

STEP 1. SCANNING: FOOT DORSUM, LATERAL, & MEDIAL PATIENT POSITION: SUPINE/SEATED WITH FOOT HANGING OFF TABLE 2" IN NEUTRAL TOOL HAND: DOMINANT STABILIZING HAND: CALCANEUS AND BILATERAL MALLEOLUS TOOL: SCANNER (SMART TOOL LOGO UP) TARGET AREA: RETINACULUM TO METATARSAL HEADS TISSUE TREATED: NONE PATIENT ACTIVE MOTION: NONE CLINICIAN PRESSURE: LIGHT PASSES: 1-2



SMART T

Foot + Ankle

INTERVENTION

STEP 3. TREATMENT: FOOT DORSUM PATIENT POSITION: SUPINE/SEATED WITH FOOT HANGING OFF TABLE 2-6 INCHES/5-15CM IN NEUTRAL TOOL HAND: DOMINANT STABILIZING HAND: LOWER 1/3 TIBIA AND FIBULA TOOL: SHARK, EDGE 3 TARGET TISSUE: RETINACULUM TO BASE OF THE TOES

TISSUE TREATED: DORSUM OF THE FOOT PATIENT ACTIVE MOTION: LIGHT PLANTAR/DORSIFLEXION

CLINICIAN PRESSURE: LIGHT PASSES: 2-5



















Rules for Kinesio Taping:

1) ALWAYS STRETCH THE SKIN AND NOT THE TAPE

2) NEVER STRETCH THE LAST 2 INCHES OF TAPE ON EACH SIDE, SO THAT IT WILL STICK BETTER.

3) THE TAPE HAS A 20% STRETCH AS IT SETS ON THE PAPER, MORE STRETCH IS NOT NECESSARY FOR RESULTS.

4) THE MORE YOU STRETCH THE TAPE, THE MORE IT HAS THE POTENTIAL TO IRRITATE THE SKIN.

5) USE KINETIC CHAINS



Taping for Plantar Fasciitis





"Don't stretch the tape, Stretch the skin under the tape"







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Foot + Ankle **INTERVENTION STEP 12. TREATMENT: ACHILLES' TENDON** PATIENT POSITION: PRONE TOOL HAND: DOMINANT STABILIZING HAND: BRACING CALCANEUS WITH THUMB AND INDEX "PEELING THE ΡΟΤΑΤΟ" TOOL: SHARK, EDGE 1 **TARGET TISSUE: MEDIAL & LATERAL** ACHILLES' TENDON **TISSUE TREATED: ADHESIONS AROUND** CALCANEUS PATIENT ACTIVE MOTION: DORSIFLEXION TO **NEUTRAL CLINICIAN PRESSURE: LIGHT** PASSES: 2-5 EACH SIDE







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2.COMPARTMENT SYND. (usually Tibialis Ant.)

Occasionally superficial or deep posterior compartment. <u>SYMPTOMS</u>: Dull ache without history of trauma repeatedly occurring at same time (3rd. Lap Syndrome). <u>TEST</u>: pain with passive stretch & resistive testing: ankle dorsiflexion, foot inversion & supination.
























| Key + +/- LAX | Pain Possible Pain Possible Limited ROM Possible Laxity | Lesions | Quadriceps Patellar Tendinitis | Hamstrings (Distal) | Popliteus | lliotibial | Osteoarthritis | MCL (opposite for LCL) | Meniscotibial | ACL | POL | Meniscus | Loose Bodies | Plica | Patellofemoral |
|------------------------|--|---------|--------------------------------|---------------------|--|------------|----------------|------------------------|---------------|------------|--------------|----------|--------------|-------|----------------|
| Passive | Flexion (160°) | | +/- | | | | L Most | | + / - L | +/- | +/- | L | L | +/- | L |
| Passive | Extension (0°)-(+10°) | | 1 | + / - L | | | L Less | | + / - L | +/- | + / - LAX | L | L | | |
| Passive | External Rotation (45°) | | 10.57 | +/- | +/- | | L | +/- | + | +/- | +/- | L | +/- | | |
| Passive | Internal Rotation (30°) | | | +/- | | | L | | +/- | +/- | +/- | L | +/- | | |
| Valgus | 30° Flexion | | | | | | | + LAX | | | | | +/- | | |
| 20 | 0° Extension | | | | | | | | | +/- LAX | +/- LAX | | | | |
| Varus | 30° Flexion | | | | | | | | | | | | + / - | | |
| | 0° Extension | | | | | | | | | +/- LAX | +/- LAX | | × | | |
| Lachma | n–Anterior Drawer | | | | | | | | +/- | + LAX | | | | | |
| Pivot-S | Pivot-Shift Tests | | | | | | | | | + LAX | | | | | |
| Dynami Posterie | c Posterior Shift or Sag | | | | | | | | | | + LAX | | | | |
| Menisc | us Tests | | | | | | | | | | | + | | | |
| Resiste | d Knee Flexion | | | + | | | | | | | | | | | |
| Resiste | d Knee Extension | | + | | | | | | | | | | | | +/- |
| ADDITI | ONAL TESTS | | _ | | | | | | | _ | | | | | |
| Resiste | d Internal Rotation | | | | + | | | | | | | | _ | | - |
| Ober-F | lexion-Extension | | | | | + L | | | | | | | | | |
| Rotational Drawer | | | | | | | | | | +/- LAX | +/- LAX | | | | |
| Medial | Plica | | | | | | | | | | | | | + | |
| Patella | Patella Tracking | | | | | | | | | | | | | +/- | +/- |
| Patella | Patella Compression | | | - | | ·Funct?- | nal Caft | Tienus T | Vente f | • | <u> </u> | | | +/- | +/- |
| Patella Apprehension | | | | Trea | Treatment by Manual Methods, 2 nd . Ed. Aspen | | | | | | | | | | +/- LAX |
| Joint Play Evaluation | | | Publishers, 1999. | | | | | | | | | | | | |



Rules for Kinesio Taping:

1) ALWAYS STRETCH THE SKIN AND NOT THE TAPE

2) NEVER STRETCH THE LAST 2 INCHES OF TAPE ON EACH SIDE, SO THAT IT WILL STICK BETTER.

3) THE TAPE HAS A 20% STRETCH AS IT SETS ON THE PAPER, MORE STRETCH IS NOT NECESSARY FOR RESULTS.

4) THE MORE YOU STRETCH THE TAPE, THE MORE IT HAS THE POTENTIAL TO IRRITATE THE SKIN.

5) USE KINETIC CHAINS



Taping of the Knee



"Don't stretch the tape, Stretch the skin under the tape"

Voodoo Taping

1-- Wrap a band around the joint or restricted tissue creating a large compression force a few inches below and a few inches above the area (75% across area working, 50% area around)
2-- Move the limb in every direction for 2 or 3 minutes.
3-- Remove band.
4-- Repeat if necessary on and off every 3 minutes up to a half of an hour.











Cupping

 CLEAN AREA
 SELECT APPROPRIATE CUP SIZE

- 3) SMEAR OIL OR SKIN CREAM OVER TARGET AREA
- 4) CONNECT CUP OR CUPS
- 5) RELEASE CUP OR CUPS AFTER DESIRED TIME







Voodoo Floss

1-- Wrap a band around the joint or restricted tissue creating a large compression force a few inches below and a few inches above the area (50% across area working)
2-- Move the limb in every direction for 2 or 3 minutes.

3-- Remove band.

4-- Repeat if necessary on and off every 3 minutes up to a half of an hour.



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5) USE KINETIC CHAINS



TFL Taping





"Don't stretch the tape, Stretch the skin under the tape"















INTERVENTION Thigh

STEP 5. TREATMENT: ADDUCTORS PATIENT POSITION: SUPINE FIGURE FOUR POSITION (BOLSTER IF LIMITED EXTERNAL HIP ROTATION) TOOL HAND: DOMINANT STABILIZING HAND: STRETCHING ADDUCTORS PROXIMAL TO DISTAL TOOL: BATMAN, EDGE 1 TARGET AREA: PUBIC RAMI TO MEDIAL CONDYLE OF THE FEMUR TISSUE TREATED: ADDUCTOR GROUP PATIENT ACTIVE MOTION: DRIVE KNEE INTO BOLSTER OR TABLE CLINICIAN PRESSURE: LIGHT

PASSES: PIN THE TISSUE AS PROXIMAL AS POSSIBLE. STRETCH THE TISSUE USING STABILIZING HAND TOWARD THE KNEE











LATERAL FEMORAL CUTANEOUS ENTRAPMENT

 <u>SYMPTOMS: anterolateral</u> thigh pain, paresthesia & burning. Sensitive to clothing contact and leg extension.

• <u>FUNCTIONAL</u>: + reverse SLR, pressure over inguinal ligament may increase symptoms. No motor signs.







| Key + Pain + /- Possible Pain L Possible Limited ROM Hip TESTS | Osteoarthritis | Trochanteric Bursitis | lliopectineal & lliopsoas Bursitis | Ischiogluteal Bursitis | Adductor Tendinitis | Gluteus Medius Tendinitis | Upper Rectus Tendinitis | lliopsoas Tendinitis | Upper Hamstring Tendinitis | Piriformis Syndrome | Loose Bodies | Osteitis Pubis |
|---|----------------|-----------------------|---------------------------------------|------------------------|---------------------|------------------------------|-------------------------|----------------------|-------------------------------|---------------------|----------------------------------|----------------|
| Passive Flexion (140°) | L + / - | + / - (1) | + | +/- | | | +/- | + / - (1) | +/-L | | Springy Block +/- | + |
| Passive Extension (30°) | L + / - | +/- | +/- | | | | +/- | + / - | | | | |
| Passive Abduction (50°) | L + / - | +/- | 2011 | 1 | +/- | | | | | | | + |
| Passive Adduction (30°) | + / - | + / - | | | | +/- | | | | | | |
| Passive Internal Rotation (40°) | L + / - | + / - | +/- | | | + / - | + / - | | | + / - | | |
| Passive External Rotation (60°) | | +/- | +/- | | | +/- | +/- | | | | Springy Block + / - | |
| Resisted Flexion | | | + | | | | | + | | | | |
| Resisted Extension | | + / - | | + | | | | | + | | | |
| Resisted Adduction | | | | | + | | | | | | | + |
| Resisted Abduction | | +/- | | | | + | | | | | | |
| Resisted Internal Rotation | | +/- | | | | | | | | | | |
| Resisted External Rotation | | + / - | | | | | | 1 | | + | | |
| Resisted Knee Extension | | | | | | | + | | | | | |
| Resisted Knee Flexion | | | | +/- | | | | | + | | | |
| Joint Play Evaluation (1) passive flexion with adduction | on. | | | | Н | amme | r WI:Fu nt by I | unction Manua | al Sof Meth | t Tissu ods, 2' | le Exam nd . Ed. A | in. & Aspen |

PASSIVE HIP TESTING

- **1.** Flexion
- 2. Extension
- 3. Abduction
- 4. Adduction
- 5. Internal rotation
- 6. External rotation
- Capsular pattern: most in int. rotation, less in flexion & extension and least in abduction. Rare in external rotation.

According to Cyriax: first loss of ROM in the hip is internal rotation.





| CLEAN AREA SELECT APPROPRIATE CUP SIZE SMEAR OIL OR SKIN CREAM OVER TARGET AREA CONNECT CUP OR CUPS RELEASE CUP OR CUPS AFTER DESIRED TIME | Cupping | | |
|--|------------------------------|--|--|
| 2) SELECT APPROPRIATE CUP SIZE 3) SMEAR OIL OR SKIN CREAM OVER TARGET AREA 4) CONNECT CUP OR CUPS 5) RELEASE CUP OR CUPS AFTER DESIRED TIME | 1) CLEAN AREA | | |
| SIZE 3) SMEAR OIL OR SKIN CREAM OVER TARGET AREA 4) CONNECT CUP OR CUPS 5) RELEASE CUP OR CUPS AFTER DESIRED TIME | 2) SELECT APPROPRIATE CUP | | |
| CREAM OVER TARGET AREA 4) CONNECT CUP OR CUPS 5) RELEASE CUP OR CUPS AFTER DESIRED TIME | SIZE | | |
| TARGET AREA 4) CONNECT CUP OR CUPS 5) RELEASE CUP OR CUPS AFTER DESIRED TIME | CREAM OVER | | |
| 4) CONNECT CUP OR CUPS 5) RELEASE CUP OR CUPS AFTER DESIRED TIME | TARGET AREA | | |
| 5) RELEASE CUP OR CUPS AFTER DESIRED TIME | 4) CONNECT CUP OR | | |
| CUPS AFTER DESIRED TIME | 5) RELEASE CUP OR | | |
| DESIRED TIME | CUPS AFTER | | |
| | DESIRED TIME | | |
| | | | |
| | | | |

INTERVENTION Hip

STEP 3. TREATMENT: HIP EXTERNAL ROTATORS (PIRIFORIS)

PATIENT POSITION: PRONE TOOL HAND: DOMINANT STABILIZING HAND: LOWER LEG TOOL: BATMAN, EDGE 2 TARGET AREA: IDENTIFY TRIANGLE BETWEEN GREATER TROCHANTER, SACRUM AND COCCYX. TISSUE TREATED: HIP EXTERNAL ROTATORES (GLUTEUS MAXIMUS, MEDIUS, OBTURATORS, GEMELLI) PATIENT ACTIVE MOTION: DRIVE KNEE INTO

BOLSTER CLINICIAN PRESSURE: LIGHT TO MEDIUM

PASSES: 2-5 FROM 1 O'CLOCK TO 5 O'CLOCK WHILE PASSIVELY MOVING FEMUR AND CHANGING ANGLE OF TOOL.















| 120 | • Upper Back: |
|---|---------------|
| | Rhomboid |
| ASSESSMENT | |
| <i>Observation:</i> Scapulae position relative to the spine and other scapulae (superior/inferior/lateral) <i>Palpation:</i> Muscle hypertonicity and with hand on lower back ability to slide fingers under scapulae <i>Range of Motion:</i> Glide and slide scapulae bassively with hand in all directions of the clock <i>Strength Testing:</i> Push up with a plus <i>Static assessment:</i> See Observation <i>Dynamic Assessment:</i> Scapular kinematics with glenohumeral range of motion | |























Cupping 1) CLEAN AREA 2) SELECT APPROPRIATE CUP SIZE 3) SMEAR OIL OR SKIN CREAM OVER TARGET AREA 4) CONNECT CUP OR CUPS 5) RELEASE CUP OR CUPS AFTER DESIRED TIME






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SECTION #

TREATMENT: UPPER EXTREMITY

Shoulder, Arm, Elbow, Wrist/Hand







| Key SHOULDE + Pi R +/- Pi R L Possible limited ROM W Weak pw Possible weakness | LESIONS te Bursitis | onic Bursitis | oracoid Bursitis | ular Lesion | Supra | beriost. | spinatus Tendinitis | apularis Tendinitis | s Tendinitis | nioclavicular n | ires | scapular Injury |
|---|------------------------|---------------|------------------|----------------|-----------|-----------|---------------------|---------------------|--------------|--------------------|------------|--------------------|
| TESTS | Acut | Chro | Subc | Caps | Muse | Tenol | Infras | Subsc | Bicep | Acror Sprain | Ruptu | Supra |
| Passive Abduction (180°) Painful Arc (60°-130°) | +L | +/-+/- | | +/- | | +/-+/- | +/-+/- | +/- | +/- | + over 90° | +/- | +/- |
| Passive External Rotation (90°) | | +L | +/- | +/- L most | + | | + / - | stretch | +/- | | +/- | (90°) |
| Passive Glenohum. Abd. Scapula Fixed (90°-105°) | +L | +/- | | +/- L Less | | | | | | | | |
| Passive Internal Rot. (70°) | +L | +/- | | +/- L Least | | | +/_ stretch | | | +/- | | |
| Passive Horiz. Add. (130°) | +L | +/- | + | | | | +/- stretch | +/- | | + | | +/- |
| Resisted Abduction | + / - | +/- | | | + pw | + pw | +/- | | | | W + (| W |
| Resisted Adduction | +/- | +/- | 7 | | | | | +/- | | | W +/- | 17- |
| Resisted External Rotation | +/- | + / - | | | +/- pw | +/- pw | + pw | | | | W +/- | W +/- |
| Resisted Internal Rotation | + / - | + / - | | | | - | | + pw | | | W +/- | |
| Resisted Elbow Flexion (If + test supination) | +/- | +/- | +/- | | | | | | + pw + pw | | W + / - | |
| Impingement Tests | + | +/- | | | | +/- | +/- | | +/- | | +1 | +1 |

THE SHOULDER

- Most mobile joint in the body.
- Lacks strong ligaments & capsule.
- A delicate balance between the capsuloligamentous structures and the musculotendinous rotator cuff.
- Likened to a golf ball sitting on a tee.
- According to Cyriax: first loss of ROM is external rotation

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5) USE KINETIC CHAINS



Taping the Shoulder







"Don't stretch the tape, Stretch the skin under the tape"



Shoulder

INTERVENTION STEP 3. TREATMENT: DELTOID PATIENT POSITION: SEATED STABILIZING HAND: MID TRAP TOOL: SHARK, EDGE 1 TARGET AREA: ANTERIOR AND POSTERIOR DELTOID TISSUE TREATED: DELTOID PATIENT ACTIVE MOTION: HORIZONTAL ADDUCTION FOR POSTERIOR DELTOID; ABDUCTION AND EXTERNAL ROTATION FOR ANTERIOR DELTOID CLINICIAN PRESSURE: LIGHT TO

MEDIUM PASSES: 2-5 IN DIRECTION OF RESTRICTION





















Arm

INTERVENTION

STEP 2. TREATMENT: TRICEPS PATIENT POSITION: SUPINE STABILIZING HAND: MOVING ALONG THE BICEPS TOOL: BATMAN, EDGE 1 TARGET AREA: ACROMION TO OLECRANON TISSUE TREATED: TRICEPS PATIENT ACTIVE MOTION: PUSH HAND INTO TABLE CLINICIAN PRESSURE: LIGHT PASSES: 1-2 IN ALL DIRECTIONS













| Key + Pain +/- Possible Pain L Possible Limited ROM LAX Possible Laxity | LESIONS | | Lowe Bicer Strai | er os in | | | | u | 0 | 8 | orain | prain | | |
|---|------------------|-------------------------|------------------------|------------------|-------------------|--------------------|------------------|---------------------------|--------------------------|---------------------|--------------------|--------------------|---------------|--|
| ELBOW | | Osteoarthritis | enoperiosteal | Musculotendinous | Brachialis Strain | Triceps Tendinitis | Supinator Strain | Pronator Teres Strai | Lateral Epicondyliti | Medial Epicondyliti | Medial Ligament Sp | Lateral Ligament S | Loose Bodies | |
| TESTS | - | +/- | +/- | +/- | +/- | +/- | | | | | L + / - | L + / - | Springy | |
| Passive Flexion (100) | L | MOST | | | | - | | | | - | 1.1 | 1+/- | Springy | |
| Passive Extension (0°) | L | + / - LESS | | | +/- | | | | | | L + / - | | Block | |
| Passive Pronation (85°) | | L | + | | | - | +/- | | | - | | - | | |
| Passive Supination (90°) | | L | | | | - | - | +/- | | | | - | | |
| Valgus Stress | | | 1 | | | | | | | | | | | |
| Varus Stress | | | | | | | | | | | | - | | |
| Resisted Flexion | | | + | + | + | _ | + | - | - | - | - | Ļ | | |
| Resisted Extension | | | - | _ | + / | - + | - | - | - | | - | - | | |
| Resisted Pronation | | | | | - | - | - | + | | +/ | - | | | |
| Resisted Supination | | | +/- | +/- | - | - | + | - | +/- | - | | - | | |
| Resisted Wrist Flexion | | | | 4 | - | _ | - | - | - | +, | 2) | - | | |
| Resisted Wrist Extension | | | | | | | | | + (| 1) | | | | |
| Joint Play Evaluation | | | | | | Ham | me | r WI | :Fur | nctio | onal | Soft 1 | issue | |
| (1) + with elbow extended(2) + with elbow extended | and pa and pa | ssive voli ssive wri | ar wrist st dorsi | flexio flexio | n. n. | Exar Met | nin. hod: | & Tr s, 2 ⁿ | reat ^d . E | mer d. A | nt by spen | Manı Publi | ial shers, | |

COMMON ELBOW LESIONS

- Biceps strain: +Speeds, resisted supin +/-,
 - + passive proximal elbow supin.,
- •Lateral Epicondylosis: + resist. wrist ext. with elbow extended & pronated, + resist. finger ext.,
- Medial epicondylosis: + wrist flex. with elbow extended & supinated.
- Triceps strain: + resist. elbow ext., + passive elbow flexion.



<u>ELBOW PASSIVE</u> EXAMINATION (Cont.)

- PRONATION: <u>Abnormal</u>: biceps brachii insertion; pain & limitation in radio-capitellar incongruity & advanced arthritis; radial head fracture (twang); median nerve in pronator syndrome; pronator strain; medial epicondylosis.
- SUPINATION: <u>Abnormal</u>: radioulnar articulation; radial head fracture (twang); advanced arthritis, supinator strain, lateral epicondylosis.







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"Don't stretch the tape, Stretch the skin under the tape"

TAPING OF GOLFERS ELBOW





"Don't stretch the tape, Stretch the skin under the tape"







PRONATOR TERES SYNDROME

- <u>SYMPTOMS</u>: affects whole med. n. distal to site of compression, may affect not only the thenar muscles (CTS), but also the flexion of first 3 fingers with pain and paresthesia along the volar and dorsal surfaces of the hand, palm and several fingers.
- SIGNS: + resisted pronation
- + percussion test over pron. Teres
- Next slide for testing specific locations.



When a patient complains of "carpal tunnel" look at the "pronator teres"







| Key + Pain + /- Possible Pain L Possible Limited ROM LAX Possible Laxity Wrist TESTS | Arthritis | Extensor Carpi Ulnaris Tendon | Extensor Carpi Radialis Tendon | Flexor Carpi Ulnaris Tendon | Flexor Carpi Radialis Tendon | Intersection Syndrome | Dorsal Ligament Sprain | Palmar Ligament Sprain | Ulnar Collateral Ligament Sprain | Radial Collateral Ligament Sprain | Radioulnar Ligament Sprain | Triangular Fibrocartilage | Capitate Subluxation |
|--|------------|-------------------------------|--------------------------------|-----------------------------|------------------------------|-----------------------|------------------------|------------------------|----------------------------------|-----------------------------------|----------------------------|---------------------------|----------------------|
| Passive Radioulnar Pronation | + / - L | | | | | | | | | | + | | |
| Passive Radioulnar Supination | + / - L | | | | | | | | | | + | | |
| Passive Carpal Pronation | | | | | | | + L | | | | | +/- | |
| Passive Carpal Supination | | + / - | | | | | | + L | | | | +/- | |
| Passive Wrist Flexion (75°) | + L | + / - | + / - | | | + / - | LAX + L | + / - | | | | | |
| Passive Wrist Extension (65°) | + L | | | + / - | +/- | | + / - | + L LAX | | * | | | + L |
| Passive Radial Deviation (20°) | | +/- | | +/- | | | | | + LAX | | | + / - | |
| Passive Ulnar Deviation (30°) | | | + / - | | + / - | 252 | | | | + LAX | - | + L | |
| Resisted Extension Radial Deviation | | | + | | | + | | | | | | | |
| Resisted Extension Ulnar Deviation | | + | | | | | | | | | | | |
| Resisted Flexion Radial Deviation | | | | | + | | | Ham | mer \ | VI:Fu | nctio | nal So | oft |
| Resisted Flexion Ulnar Deviation | | | | + | | | | Tissu | e Exa | min. | & Tre | atme | nt by |
| Joint Play Evaluation | | | | | | | | Aspen Publishers 1999 | | | | | |









