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INTRODUCTION

To begin, let us go over a brief background on physiology so as to better understand exactly how Instrument Assisted Soft Tissue Mobilization (IASTM) works. Connective tissue serves to provide mechanical support, exchange metabolites between blood and tissues, protect against infection, and repair damaged tissue.¹ The cells embedded in the connective tissue include fibroblasts, myoblasts, and macrophages, to name just a few. Fibroblasts play a large role in connective tissue repair, as they are the ground substance in collagen synthesis.¹

When soft tissue injury occurs collagen is reassembled in abnormal arrangements or cross-linkages resulting in decreased tensile strength, reactivity, and limited range of motion. This decrease in strength, reactivity, and range of motion can allow the involved tissue to become prone to chronic re-injury and/or pain. Soft tissue injury often involves damage to structural elements of the tissue. This may result in rupture of capillaries, arterioles, and venules while initiating the healing response. The first phase of the healing process, the inflammatory phase, promotes healing by removing injured tissue and promoting growth and repair to restore the tissue to its normal physiological function.^{2,3}

IASTM is an advanced form of myofascial mobilization primarily used to detect and release scar tissue, adhesions, and fascial restrictions.⁴ When coupled with stretching, strengthening, and cryotherapy, IASTM is intended to improve connective tissue function. This technique allows a clinician to locate the area of adhesion in the soft tissue involved through the vibrations or undulations of the instruments in the clinician's hands. The clinician may utilize the instruments to break-up the abnormal cross linkages between muscle, tendon, or fascia and return the injured area to its optimal function.



The theory behind IASTM was based on Cyriax's concept of cross-friction massage.⁴ Cyriax's goals of this massage are to soften or break up scar tissue by providing movement to the tissue itself and increase tissue temperature.⁵ Tissue movement encourages realignment and lengthening to ensure proper lying down of new collagen without stretching or tearing the healing fibers. Collagen, being the basic fiber of soft tissues, needs to lay down parallel to each other to provide rigidity and strength in mechanical tension. Cyriax hypothesized that cross-friction massage will not detach fibrils during healing but instead will prevent their adherence at abnormal sites, thus decreasing abnormal adhesions in connective tissue.⁵

The goal of IASTM is to provide an optimal healing environment for connective tissue by modifying the physiologic responses to injury, such as inflammation, or by enhancing components of normal musculoskeletal function, such as increasing range of motion and strength.⁶ IASTM may re-initiate the inflammatory process, allowing for healing and scar tissue remodeling to begin again.⁴

HAWKGRIPS®

- HawkGrips® (HG) are ergonomically advanced, professionally engineered instruments specifically designed to detect and treat soft tissue dysfunction in muscle, fascia, tendons, and scar tissue.
- HawkGrips® are contoured to facilitate treatment around different body parts.
- HawkGrips® were designed to conform to different body soft tissue contours and joint shapes.
- HawkGrips® were designed with the practitioner in mind. HG4, 5, 6, 7, 8 and 9 are textured to give the clinician a better “grip” on the instruments. This allows the practitioner to use less force holding the instruments, resulting in a reduction of fatigue in the hands and wrists. HG1, 2 and 3 handlebars were designed to be held comfortably and with no stress being placed on the thumbs of the practitioner. During the testing phase, practitioners asked us to hollow out the solid steel handlebars. This transferred much of the weight from the handles to the treatment area of the instrument. It also allowed for more sensitive detection of fibrotic tissue.
- HawkGrips® allow clinical goals to be accomplished more effectively in less time, with less pressure, and less discomfort and strain on the part of the clinician.



CONDITIONS TREATED

HawkGrips® can be used to treat a large range of abnormalities that include:

TENDINOPATHIES

Such as lateral epicondylitis, trigger finger, and Achilles tendinitis.

POSTURAL ABNORMALITIES

Such as upper and lower cross syndrome.

MYOFASCIAL PAIN SYNDROMES

Such as fibromyalgia, ITB syndrome, and plantar fasciitis.

ENTRAPMENT SYNDROMES

Such as carpal tunnel and thoracic outlet syndrome.

LIGAMENT PAIN

Such as chronic and acute ankle sprains.

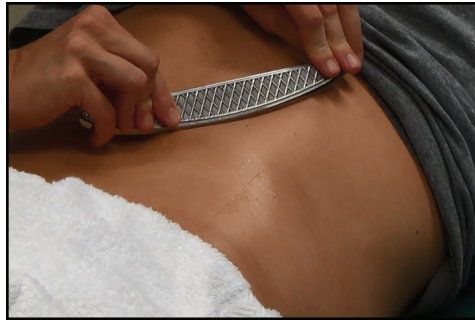
SCAR TISSUE/ADHESIONS

Such as mature post-surgical scarring.

(Best used in conjunction with creams used to treat the appearance of scars.)

EDEMA REDUCTION

Such as acute swelling and lymphedema.



CONTRAINDICATIONS

ABSOLUTE (Red Flags)

- Patient intolerance and/or non compliance
- Open wounds
- Unhealed suture sites
- Unhealed or non-union fractures
- Thrombophlebitis
- Uncontrolled hypertension
- Hemophilia
- Hematoma
- Osteomyelitis
- Myositis ossificans

RELATIVE (Yellow Flags)

- Anti-coagulant medicine
- Cancer
- Varicose veins
- Burn scars
- Anemia
- Family history of hemophilia
- Contractures due to rheumatoid arthritis*
- Pregnancy
- Kidney dysfunction
- Osteoporosis

*It is important to be mindful when treating near a joint that is affected by an autoimmune inflammatory disease such as rheumatoid arthritis as this could cause an unwanted increased inflammatory response.

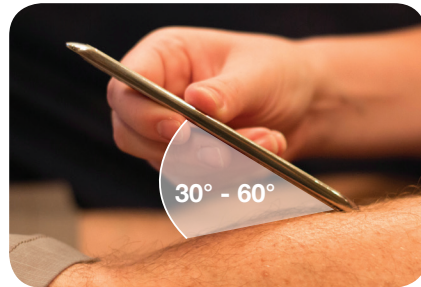
HAWKGRIPS® THERAPY

WARM-UP:

- Ultrasound, diathermy, hot-pack, or active exercise (e.g. stationary bicycle)

INSTRUMENT APPLICATION:

- Apply a small amount of emollient; just enough to make the skin shiny. (Avoid build up of the emollient on the instrument during treatment.)
- Identify the treatment edge.
- Keep the angle of the treatment edge on the skin between 30 and 60 degrees.
- Apply light pressure through the instrument, keeping wrists in a neutral position and fingers loose, in a sweeping motion from proximal to distal. Decrease pressure as you slide the tool back proximally, never removing the instrument from the patient's skin.
- Basic scan of area to find adhesions.
- Use appropriate instrument(s) and stroke(s) for precise treatment.
- Finish with broad strokes in the direction of the heart to control any heightened inflammatory response.



STROKES:

Brush - desensitizes dermatomes with very light pressure stroke, treated in all directions

Sweep - scan for adhesions in a unidirectional, distal to proximal or proximal to distal manner

Fan - scan for adhesions in different planes by fixing one side of the instrument to the skin while pivoting the other side, like opening a fan

Strum - small strokes on localized adhesions, treated in all directions

J-Stroke - sweeping stroke ending with a sharp curve, appearing like a "J". Used often to treat around bony prominences

STRETCHING & REHABILITATIVE EXERCISE:

- High repetition, low load exercise
- Stabilization exercises
- Proprioceptive training

NOTES:

Depending on the structures involved in treatment, cryotherapy may be warranted at the end of treatment. If the condition is inflammatory in nature such as acute injury, tendonitis or bursitis, clinician may recommend using ice to control any extra inflammation post treatment.

HawkGrips® Therapy is best used as a conjunctive therapy. Encourage your patients to perform stretching and high repetition, low load exercises that utilize the involved tissue after receiving an IASTM treatment to encourage proper lying down of new collagen.

PATIENT PROGRESSION

FIRST PHASE:

First session: Soft-tissue evaluation and gentle treatment to desensitize dermatomes and gauge patient response

Second session until second phase: Implement HawkGrips® Therapy with tissue on a slack

SECOND PHASE: Implement HawkGrips® Therapy with the tissue on a stretch

THIRD PHASE: Implement HawkGrips® Therapy while the patient is doing rehabilitative exercise (high repetition, low load; postural positioning; proprioceptive training, etc.)

NOTES:

Progression may occur at different times for different patients. A patient may need numerous treatments to desensitize their dermatomes before being able to treat the tissue for adhesions.

As a patient's therapy starts to plateau, move them to the next phase of HawkGrips® Therapy. Treating a tissue on stretch will increase the intensity of the treatment as will treating the tissue while the patient is firing that muscle, as during a rehabilitative exercise. (i.e. treating the patellar tendon while the patient is performing 15-18 body weight squats)

Modify technique to maximize response and improve functional levels.

POTENTIAL TREATMENT RESPONSES

It is essential that the clinician appropriately coach patients through potential side effects. Some patients may experience the following responses during treatment.

PAIN:

- Be in constant communication with your patient to ensure the amount of pressure is to the patient's tolerance.
- Determine a sign that indicates "stop" that the patient can use if a technique is painful.

PETECHIAE:

- Petechiae is small broken capillaries underneath the skin.
- It is caused by friction.
- This serves as a sign that it is time to end treatment in that area as you may have initiated an uncontrolled inflammatory response that may lead to bruising.

BRUISING:

- The epithelial walls of capillaries in traumatized areas are weakened due to chronic or acute inflammation and swelling.
- As scar tissue is released from healthy tissue, capillaries that have infiltrated the scar may rupture, resulting in a visible bruise. Forewarn the patient of this possibility. Explain why it may occur.
- Dysfunctional soft tissue is more susceptible to bruising than healthy tissue.
- Clear communication with the patient is important. Above all use your clinical experience to decide the best course of treatment for your patient.

DO NOT OVERTREAT:

Excessive treatment may exacerbate a patient's condition. The goal is to break up abnormal adhesions and promote parallel lying down of fibers by initiating a controlled inflammatory response and encouraging healthy use of the involved tissues.

HELPFUL HINTS

- Single bevel edges penetrate deeper than double bevel edges.
- Single bevel treatment strokes are applied in only one direction. When you are ready to treat in the opposite direction, you must turn the tool around so that the bevel edge is against the skin.
- Double bevel strokes can be applied both directions.
- Always position your patient to ensure practitioner comfort during the entire treatment.
- Always treat the entire kinetic chain. Do not concentrate only on area of pain.
- It is important to realize that there is no substitute for hands on experience when using HawkGrips® Therapy. The more hands on experience you have with them, the more they will become an extension of your own trained hands.
- Do not overtreat. This may lead to uncontrolled inflammation and bruising.



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