



THE THERAPEUTIC SCRAPING ESSENTIALS
IASTM AND GUA SHA IN HEALTH AND THERAPY - AN ILLUSTRATED GUIDE

SIMMONS

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IASTM AND GUA SHA
IN HEALTH AND THERAPY
AN ILLUSTRATED
GUIDE ON TREATING
PAIN AND INJURIES
FOR REHAB
PROFESSIONALS

JESSE JAMES SIMMONS



Great Therapy Needs a Tool

A lifelong valuable treatment book, *Therapeutic Scraping: Essentials of IASTM and Gua Sha*, is a unified approach dedicated to bringing together best practices for transforming mainstream care in soft tissue pain and injury.



THERAPEUTIC SCRAPING ESSENTIALS OF IASTM AND GUA SHA IN HEALTH AND THERAPY

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- ✓ Step-by-step technical actions
- ✓ 100s of scraping session pictures
- ✓ Tips on treatment formatting
- ✓ Soft tissue pain and injury details
- ✓ Rules for safe and ethical practice
- ✓ Core clinical education curriculum



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IN HEALTH AND THERAPY**

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TREATING PAIN AND INJURIES
FOR REHAB PROFESSIONALS**

Jesse James Simmons, DPT

THERAPEUTIC SCRAPING ESSENTIALS



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PREFACE

ESSENTIALS OF THERAPEUTIC SCRAPING

The role of prevention, treatment, and recovery from musculoskeletal problems is destined to remain an important issue. It is fascinating to consider that while advancements in technology, products, and services for alleviating bodily pain and accelerating injury healing seem to never stop evolving, even still the human body's functions and structures go unchanged from past, present, and expectably into the future. In light of this, *Therapeutic Scraping Essentials* is a textbook offering a learning experience dedicated to sharing an essential solution that is outright compelling and impressive when taken to heart.

At the core of its essence, this treatment approach and the benefits it provides does not belong to any one group of peoples, or area of origins. Therapeutic scraping is not limited to past traditions, nor is it bound to any modern market brand, neither high tech gadgetry. This remedy is a natural restorative method making use of the body's own healing mechanisms, thus applying to everyone for all time. While this textbook serves informative purposes, it is well intended for this manual to fulfill a critical role in bridging IASTM and gua sha concepts into a unified therapeutic scraping practice, to best represent standards of practice to novice through experienced clinical providers dealing with musculoskeletal care.

Healthcare providers play important roles in promoting quality living and being aware of actions that jeopardize the capacity for the body to operate at a suitable level. This notion is especially important towards the muscles, tendons, ligaments, and fascia of the body; collectively referred to as soft tissue. Along with this goes understanding for using or referring to ideal treatment options, of which suffice to say there are many available from exercises, medications, surgeries, manual therapies, countless products, and more.

This textbook was organized to inform clinical providers on the basis of principles and technical skills involved in therapeutic scraping for treating soft tissue related pain and injuries. Within these pages, essential concepts, procedures, and evidence-based research come together in a clear way for enabling a complete view of successful intervention management. Anyone involved in using rehabilitative techniques, such as massage, myofascial release, soft tissue mobilizations, or therapy exercises, can confidently rely on this material to gain comprehensive familiarity for how scraping treatment works.

The first part of this manual provides a launching point for drawing interest towards scraping concepts and insight into its background as a healing modality. Learners will then be directed into the microscopic perspective of scientific sources explaining scraping principles. This will be based on an organized spectrum of overlapping mechanisms taking place simultaneously for producing beneficial physiological changes within the body. From there a bridge connects to relevant clinical outcomes that constitutes macroscopic viewing of measurable effects translated to treatment recipients.

Once the rationale is in place for understanding how scraping works and why to use it, learners will then be familiarized with methods of assessment, treatment applications, as well as safety guidelines to fulfill utilization. Additionally, content will be discussed for ethical issues related to delivering services while safeguarding relationships and promoting professional courtesy between businesses, providers, and recipients of care.

At the core of this textbook are procedure demonstrations focused on conveying clinical application by showing 50 individual cases treated with therapeutic scraping. Each lesson is classified by anatomical region and arranged for displaying step-by-step instructions of therapeutic scraping session formatting. In addition, meaningful descriptions and tips are provided for extra practical guidance into aspects of pathology, preparations, and technical maneuvers based on bodily area involvement.

In order to improve acceptance of therapeutic scraping this manual is presented in a way that should suffice the informative and technical needs by all clinicians when pursued as a treatment system. It is advised that the included demonstrations are accepted as actual therapeutic scraping procedures. That is to say, there is little room for variation from the included anatomical nomenclature and descriptive features. Also, the concise detailed application instructions within each procedure is accurate and objective with respect to anatomical layout and sequence of treatment steps. Therefore, these procedures serve as essential functions in the needs of operating clinical providers seeking to service musculoskeletal pain and injuries towards a variety of demographics and occupational settings.

Definitively, this textbook aims to dive further into advocating widespread awareness, occupational practice, technical proficiency, and overall enjoyment for the advantages provided by therapeutic scraping. This treatment phenomenon is an all too interesting and meaningfully impactful key to go on remaining generally misunderstood nor limited in use. It is sincerely hoped that the arrangement of principles contained within will serve as an authentic learning experience that will lend to growing and spreading this treatment resource in hands of working clinical providers tasked with musculoskeletal rehabilitation. Likewise, it is expected that therapeutic scraping procedures also be available for entry-level education of student rehab clinicians to bring forth into their emerging career development.

Professionals can rely on this workbook as an authority in the specialty of scraping therapy and using principles herein to develop their career skillsets with the primary goal of improving care for others. Through this newfound textbook they can make sense of scraping in general, scientific, and practical working terms. Follow this guide and learn how easy it is to enliven understanding and jump into action for the betterment of a fresh clinical treatment style to help serve others; instead of being non-informed, narrow-minded, or hung-up on unwarranted taboos. At this point there are no good reasons, just poor habits, to keep up any barriers to the exclusive benefits of therapeutic scraping.

So now that you are at the beginning of the journey, what is your impression? How will you go onward from here? What are you going to take away? It may be assumed that if you are reading this, you have a vision to be able to help others with your treatment skills. You have been stimulated and positively provoked. You want to get better at your specialty, and you are saluted for that. We suggest developing and sharing your talents for moving towards greater rehabilitative expectations and serving quality care.

This textbook has set a promise to inform, specify in detail, and inspire its readership by exposing the specialty of therapeutic scraping. It is hoped that aspiring scraping providers reach the end of this essential material, feeling assured in gathering as much substance as needed for stepping out with full understanding of the treatment, while creating a sense of know-how along the way.

Please enjoy taking command of developing a first-class treatment style of your own and thank you for participating in this helpful info on handling the tools of the trade. It is intended for many to find its yields unsurpassed and equally experience overwhelming praises from sharing its practice with others.



Procedure Demonstrations of Therapeutic Scraping

LEARNING OBJECTIVES

- ✓ Recognize multiple regions for therapeutic scraping utilization.
- ✓ List anatomical terms, attachments, and actions.
- ✓ Describe assessment aspects for treatment indication.
- ✓ Explain characteristics of body structure pain and injury.
- ✓ Appreciate soft tissue differentiation by the use of palpation.
- ✓ Clarify recipient positioning and draping for treatment access.
- ✓ Specify technical steps of therapeutic scraping procedures.
- ✓ Identify aftercare stretches for each involved body structure.

OVERVIEW OF THERAPEUTIC SCRAPING PROCEDURES

This section serves as primary material acting as a practical workbook in teaching clinical providers how to use therapeutic scraping for treating specific bodily areas. Each component is divided into body regions characterized by instructions and illustrations of procedures derived from clinical cases. All individuals shown presented with pain, bodily impairments, and varying levels in loss of function with activities. Furthermore, generally scraping treatment recipients experienced timely satisfactory outcomes, pain relief, and improved injury recovery.

The organizational layout of the demonstrations unit allows learners to use this textbook similar to a recipe book. Each procedure covers two pages, of which the first supplies objective details of anatomy attachment sites, muscle actions, assessment highlights, and descriptive overviews. Meanwhile, the second page methodically lists step-by-step directions for applying scraping treatment to a featured body area. Additionally, an illustration goes along with each numbered set of directives, creating a visual link to the instructional text. Plus, to introduce extra help within scraping sessions, each procedure has a brief series of *Tips*, for describing useful positioning, strategy, and stretching facilitation information.

Since demonstrated procedures were photo'd amateurly and at random occurrence, scraping images vary in quality and color. Even still, the majority of pictures clearly recall the live session. Also, each feature displays notable reddish petechiae, of which details of shown scraping marks corresponds to topic anatomy sites that were treated. The petechiae accurately indicates anatomical layout, and if the illustration were held next to an anatomy reference, it would show near identical attachment points and muscle regions. This allows providers to see exactly where to examine via palpation and designates sites to target therapies with scraping tools.

While the majority of procedure illustrations display recipient positioning and scraping marks, the actual placement of tool contact is not always shown. In actuality, showing the scraping tool is not needed to acquire basics of treatment objectives for each procedure; just the same that it would be unnecessary to display a cooking knife or mixing spoon next to a prepared dish in a recipe book. And along with that the provider could use any choice of available differing scraping tools to accomplish the treatment procedure. So it was not a strict concern to display tools within each procedure. However, what is of most importance is the presentation of anatomical layout that constitutes scraping therapy effectiveness.

Generally, providers can rely on interpreting each procedure's information, then matching that to their treatment needs, use the method instructions and illustrations to derive a therapeutic solution. As such, when the provider is intending on delivering therapeutic scraping with skin markings, they should be covering the anatomy of topic and near replicating the mapping of displayed petechiae as shown within each procedure lesson; but with having in mind that each individual will display variations in coloration and exact rupturing sites of scraping marks dependent on their injury status.

In the event of providers seeking to provide scraping services without intention on inducing petechiae, the instructions and illustrations still provide valuable information for mapping where to target treatment zones. The provider would still be using assessment criteria, details of anatomical layout, and technical know-how with scraping tools for maneuvering through displayed regions.

Meanwhile, the supplied scraping mark illustrations serve as guides for where to direct tools and how to go about clearing sites, while modulating parameters to avoid deriving an induced capillary rupture response.

In order to improve validity and reliability in therapeutic scraping this manual is presented in a way that should suffice the informative and technical needs by all clinicians when pursued as a treatment system. It is advised that the included demonstrations are accepted as actual therapeutic scraping procedures. That is to say, there is little room for variation from the included anatomical nomenclature and descriptive features. Also, the concise detailed application instructions within each procedure is accurate and objective with respect to anatomical layout and sequence of treatment steps. Therefore, these procedures serve as essential functions in the needs of operating clinical providers seeking to service musculoskeletal pain and injuries towards a variety of demographics and occupational settings.

Therapeutic scraping involves a degree of ongoing critical thinking and clinical decision making for how best to use scraping tools in both technical application and bodily access of restricted soft tissue links. In some cases providers may find indication for utilizing several scraping procedures on a single recipient involving linked impaired body areas over the course of a treatment episode. For example, a subject with a rotator cuff injury may benefit from receiving scraping at various locations overlapping the shoulder. At other times, the provider may be clinically managing a workload that includes 10 to 20 patients per day with injuries spanning across the body. In these situations the provider may be treating someone's back pain in a session, and then have an arm or hip encounter to manage right afterwards with another person.

For devoted providers, this level of involvement requires assessment, logistical, and technical intervention mastery. With this in mind, ideally a scraping provider should be able to combine numerous scraping procedures into practice for making the best therapeutic impact achievable. In addition to being able to properly examine various body parts, logistically the provider must be able to quickly set-up and traverse different recipient positions to gain anatomical access and apply techniques thoroughly using scraping tools while meticulously clearing involved soft tissue sites. Additionally, a provider's strong awareness and swift deployment of supportive facilitated manual therapies, stretches, and exercise programming are extra considerations to build upon the plan of care and success for timely restoration.

It would have been nice to be more in depth with suggesting specific stretches, mobilizations, and myofascial techniques that are suitable for aftercare once scraping has been performed. However, that material would amass in a way taking focus away from introducing therapeutic scraping in this essentials textbook. Providers are certainly encouraged to combine other techniques, e.g., manual therapies, functional approaches, modern modalities, etc. And equally, scraping therapy should be part of a full-course therapeutic plan, with proper treatment sequences leading to the overall plan of care objectives.

While this textbook serves informative purposes, practice is necessary for creating clinical intuition and gaining complete anatomical oversight in fully integrating all therapeutic scraping procedures. Nevertheless, it is well intended that this instruction manual satisfies a critical role in bridging IASTM and gua sha concepts into a unified therapeutic scraping practice to best represent standards of practice to novice through experienced clinical providers dealing with soft tissue.

THERAPEUTIC SCRAPING NECK PROCEDURES



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SUBOCCIPITALS
SEMISPINALIS

BODY STRUCTURE

Suboccipitals
Semispinalis

ANATOMY SITES

Proximal to Distal Attachments

- ✓ Suboccipitals – From C1 posterior arch and TP's, and the C2 SP, inserting onto the occiput inferior nuchal line and C1 TP
- ✓ Semispinalis – From upper thoracic TP's 1-5, attaching at C2 to C5 SP's and back of occiput

MUSCLE ACTION

Neck and head extension, side bending, and rotation

ASSESSMENT FINDINGS

Pain palpating within suboccipitals and cervical pillars
Limited ROM with cervical flexion and side bending
Poor posture of head, neck, and shoulders
Activity difficulty positioning head and neck

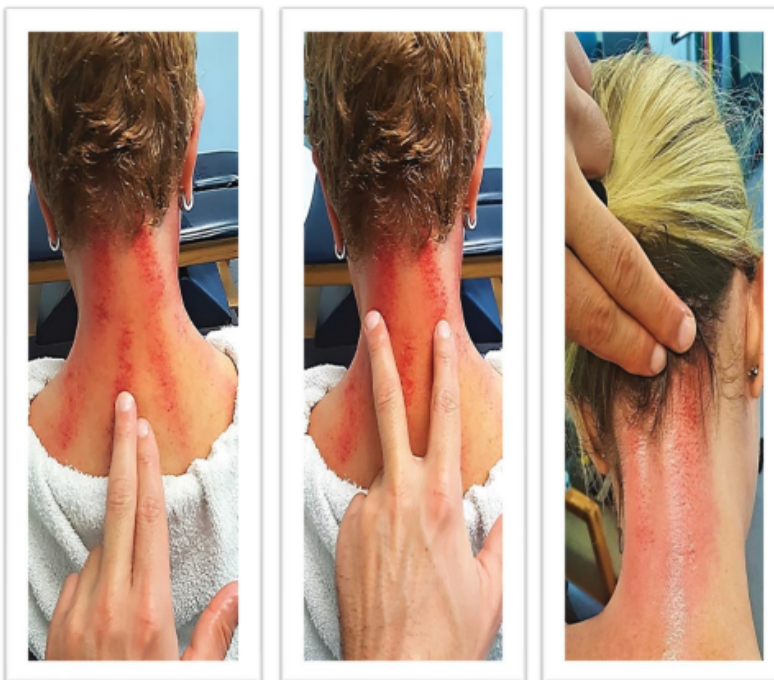
DESCRIPTION

Suboccipitals are a group of small upper cervical muscles distinctly palpated at the base of the skull. Semispinalis are rope like muscles within the cervical pillars between SP's and TP's. Since these groups cross the neck to attach on the head, they are factors for cervicalgia and tension headaches. Observe for a lateral tilt of the cranium on top of the upper cervical vertebrae; seen as a subtle positional fault of one ear being held lower than the other, due to the impact of the restriction on that side. Oftentimes, an uneven restriction, in which one side is tighter than the other, will reveal by palpation denser soft tissue on the side that corresponds with the site of chief complaint.

THERAPEUTIC SCRAPING SUBOCCIPITALS AND SEMISPINALIS

1. Begin scraping upward along the lower, mid, and upper cervical SP's from the base of the neck to the skull.
2. Next, move a finger width laterally, and scrape two lines at the cervical pillars containing transverse processes.
3. Finish with scraping superolaterally within the suboccipital pockets at the posterolateral base of the skull.

TIPS: The ideal position for scraping the neck is sitting up or side lying, with draping at the collar to expose lower attachment sites. While applying strokes, position the recipient into slight to deep neck flexion, which opens the SP's and suboccipital spaces, making contents more accessible. The recipient may also be in prone, with attention to positioning the cervical spine in flexion using a face cradle to open up the neck. Follow-up scraping with cervical flexion coupled with side bending and distraction type stretches; in addition to manual sub-occipital release.



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THERAPEUTIC SCRAPING TRUNK PROCEDURES



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PECTORALIS MINOR

BODY STRUCTURE

Pectoralis Minor

ANATOMY SITES

Proximal Attachments

- ✓ 3rd, 4th, and 5th ribs

Distal Attachment

- ✓ Scapula → coracoid process

MUSCLE ACTION

Protracts the scapula

ASSESSMENT FINDINGS

- Pain with palpation of trigger points
- Limited ROM with shoulder extension
- Poor posture with rounded shoulders
- Activity difficulty pulling, pushing, and reaching

DESCRIPTION

Pectoralis minor is a triangular shaped muscle, under the pectoralis major, at an angle from the upper ribs to the front of the shoulder. It is common to be found tight and having trigger points that refer anterior shoulder pain; particularly in people with internally rotated glenohumeral joints coupled with protracted shoulders. Since pec minor attaches to the coracoid process next to the biceps short head tendon, the two muscles may present with soft tissue restrictions at the same time. Also, the internally rotated positional fault of the scapula and glenohumeral joint is a contributing source to shoulder impingement involving biceps long head tendon. Thus, assess and treat pectoralis minor as needed in shoulder rehab encounters to restore scapula alignment, reduce muscle-tendon imbalances, in addition to relieving upper extremity and chest pain.

THERAPEUTIC SCRAPING OF PECTORALIS MINOR

1. Begin scraping pectoralis minor on a line from the 3rd, 4th, and 5th ribs, at the upper chest towards the shoulder.
2. Finish releasing at the distal site located on the coracoid process, residing under the anterior deltoid.

TIPS: Scrape pectoralis minor in supine or side lying. During treatment, the glenohumeral joint should be externally rotated for opening access to the coracoid process, which is observed by the hand being turned so that the palm is facing up and outward, as opposed to rotated down and inward (see image 1 below). In supine position, there is added benefit by hanging the arm off the table into shoulder extension, which passively lengthens the pectoralis minor in front of the shoulder. In cases of significant tightness and pain, the recipient may not tolerate extension, and a bolster can be placed under the arm to support slight shoulder flexion; of which immediately following proper treatment, gains in extension ROM should be achievable. Afterwards, the provider facilitates stretching by scapular retraction coupled with shoulder extension stretches in supine or side lying positions.



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THERAPEUTIC SCRAPING BACK PROCEDURES



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ERECTOR SPINAE

BODY STRUCTURE

Erector Spinae: Iliocostalis, Longissimus, Spinalis

ANATOMY SITES

Proximal to Distal Attachments

- ✓ Spinalis thoracis - starts at SP's of T11 - L2, inserting on SP's of T2 - T8 vertebrae
- ✓ Longissimus thoracis - has origins at SP's and TP's of L1 - L5, the sacrum, iliac crest, with insertions onto TP's of T1 - T12 and the angles of ribs 7 to 12
- ✓ Iliocostalis lumborum - starts on the iliac crest and attaches to TP's of L1 - L4, angles of ribs 4 to 12, and thoracolumbar fascia

MUSCLE ACTION

Moves the spine by extension, side bending, and rotation. Supports upright posture of the body.

ASSESSMENT FINDINGS

Pain with palpation of longitudinal back muscles
 Limited ROM in back flexion, side bending, rotation
 Muscle weakness of core back extensors
 Activity difficulty bending and lifting items

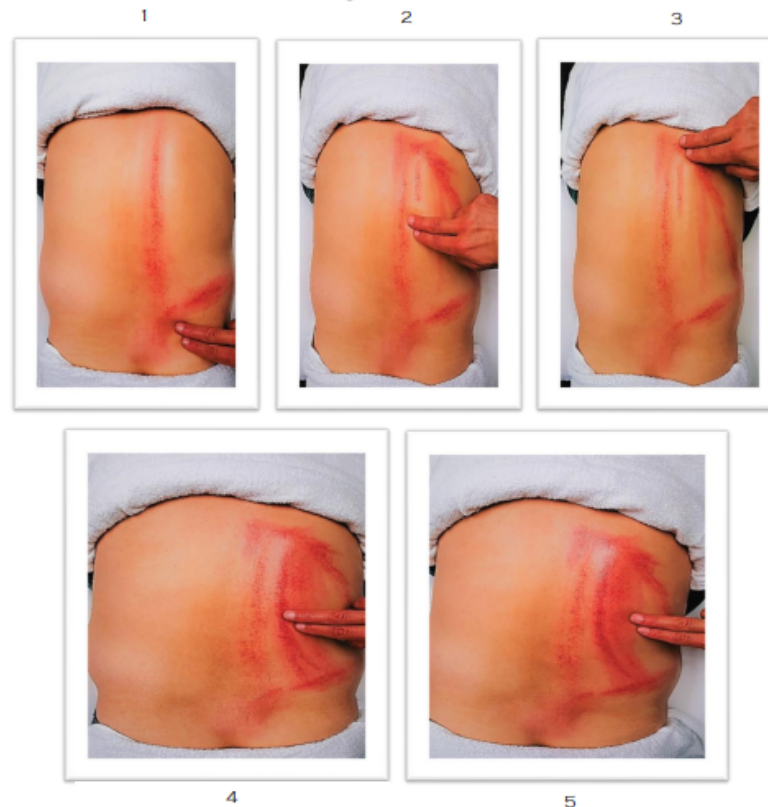
DESCRIPTION

The erector spinae (ES) are formed by a complex series of muscles crossing the length of the spine. The group is arranged medially by spinalis, centrally by longissimus, and laterally by iliocostalis; with each having sub-divisions. Palpate the rope like ES fibers coursing longitudinally for taut band restrictions that are factors in chronic pain and acute strain injuries. The ES tracks up the back are differentiated from other overlapping muscles and thoracolumbar fascia in the region having sheet like angular arrangements.

THERAPEUTIC SCRAPING THE ERECTOR SPINAE

1. Begin scraping erector spinae proximal attachments along the sacrum and posterior iliac crest borders.
2. Scrape the spinalis section in a line upward along the SP's and TP's of the lumbar and thoracic spine.
3. At the posterior rib angles, scrape a lateral line to release attachments sites of iliocostalis and longissimus.
4. Return to the iliac crest to scrape upward along longissimus; (5) and then scrape iliocostalis that is most lateral.

TIPS: Set the recipient in a supported prone position. Scraping the erector spinae doesn't require treating all 3 sections. Let palpation be a guide for detecting restricted bands of fibers orientated along the back. The provider finishes with facilitated back stretches of choice, e.g., knees to chest, lumbar distraction, back rotation, etc.



THERAPEUTIC SCRAPING UPPER EXTREMITY PROCEDURES



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BODY STRUCTURE

Infraspinatus

ANATOMY SITES

Proximal Attachment

- ✓ Scapula – posterior infraspinous fossa

Distal Attachment

- ✓ Humerus – greater tuberosity

DESCRIPTION

Infraspinatus is located on the back of the scapula, having its distal tendon at the posterolateral shoulder. It is part of the rotator cuff group of muscles that originate in various shoulder areas, but converge as separate tendons together at the humerus to stabilize the glenohumeral joint. In chronic and acute injury, trigger points are distinct at the bulk within the infraspinous fossa, while the distal tendon is subject to wear and tear tendinopathy from rotation overuse. Differentiate infraspinatus situated below the spine of the scapula from supraspinatus that resides superiorly within the supraspinous fossa. Also, distinguish from teres minor that is near infraspinatus, but tracks along the lateral border of the scapula and not within the fossa. Since infraspinatus and teres minor are paired for external rotation actions, they may be related for pain and injury; thus requiring treatment restoration together.



INFRA SPINATUS

MUSCLE ACTION

Moves the shoulder by external rotation and provides glenohumeral joint stability

ASSESSMENT FINDINGS

Pain with palpation at posterior scapula and humerus
Limited ROM with shoulder internal rotation
Muscle weakness of shoulder external rotation
Activity difficulty rotating, reaching, and lifting items

THERAPEUTIC SCRAPING FOR INFRA SPINATUS

1. Scrape infraspinatus by applying upward and lateral strokes at the infraspinous fossa of the posterior scapula.
2. Continue scraping laterally to its distal tendon attachment on the greater tuberosity of the humerus.
3. Fill in the posterior aspect of the scapula, scraping the bulk of infraspinatus muscle down and outward.

TIPS: Infraspinatus is scraped in side lying. After releasing a portion of the proximal attachment behind the scapula, have the recipient reach out and hang their arm off the table, which further elongates the fibers. Then continue scraping through the posterior muscle and tendon attaching to the outer arm. Facilitate infraspinatus stretching with variations of shoulder internal rotation and posterior capsule based release techniques.

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THERAPEUTIC SCRAPING LOWER EXTREMITY PROCEDURES



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BODY STRUCTURE

Hamstrings:

- Biceps Femoris
- Semimembranosus
- Semitendinosus

ANATOMY SITES

Proximal to Distal Attachments

- ✓ Biceps femoris – starts at ischial tuberosity and posterior femur, attaching onto the fibular head and lateral tibial condyle
- ✓ Semimembranosus – starts at ischial tuberosity, attaching onto the medial tibial condyle
- ✓ Semitendinosus – starts at ischial tuberosity, attaching onto the medial tibia via pes anserine



HAMSTRINGS

MUSCLE ACTION

Moves the knee by flexion and tibial rotation
Assists with hip extension

ASSESSMENT FINDINGS

Pain with palpation of muscle bulk behind thigh
Limited hip flexion-knee extension flexibility
Muscle weakness with knee flexion
Activity difficulty with walking, running, jumping

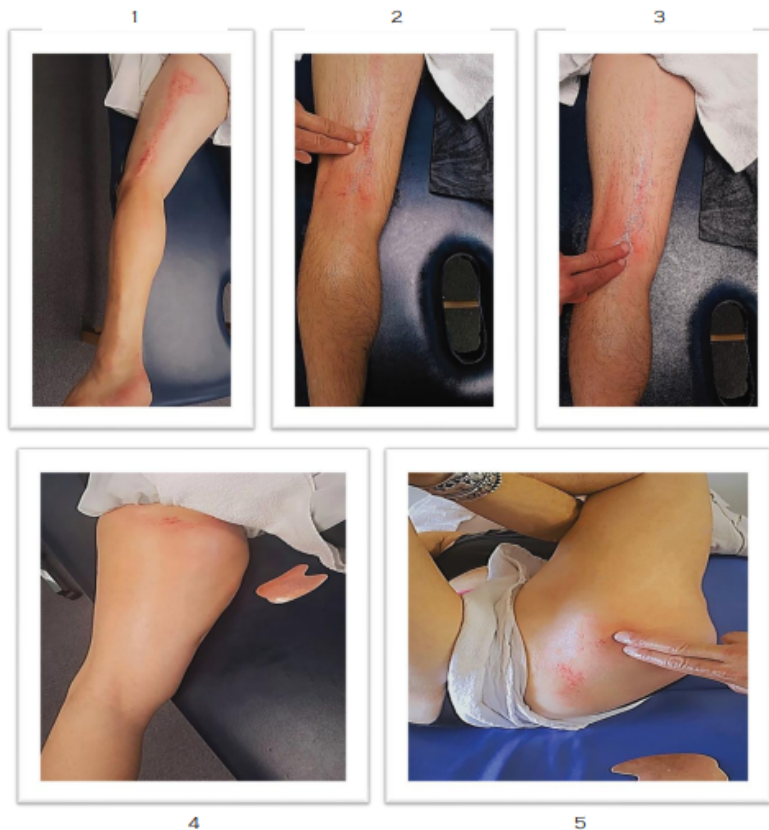
DESCRIPTION

Hamstrings are palpated at the back of the thigh starting from the lower end of the glute and going down behind the knee. Acute hamstring strain and chronic myofascia pain are examined and targeted based on medial, central, and lateral divisions longitudinally arranged across the femur to the tibia.

THERAPEUTIC SCRAPING THE HAMSTRINGS

1. Scrape biceps femoris on the back of the lateral thigh, going downward to the tendon site on the fibular head.
2. Access semitendinosus medially at the inner posterior thigh, clearing to the pes anserine on the medial tibia.
3. The semimembranosus is situated slightly more centrally down the back of the thigh on a pathway to the tibia.
4. Scrape the common proximal attachment at the the ischial tuberosity along the gluteal line per indication.
5. Utilize a figure 4 position to maximally clear the ischial tuberosity by scraping the lower end of the buttock.

TIPS: Hamstrings are accessed in prone. Drape to expose proximal fibers and the upper tendon site. Biceps femoris often blends with IT band restrictions. After, facilitate medial to lateral hamstring stretch variations.





and compressive forces, then tendinopathies, muscle injuries, and myofascial dysfunctions may be impacted by cellular signaling stimulating remodeling within the ECM. This offers application for a direct approach in musculoskeletal injuries to bring forth regenerative tissue treatments.

Mechanotherapy defined is (58), “any intervention that introduces mechanical forces with the goal of altering molecular pathways and inducing a cellular response that enhances growth, remodeling, or repair.” Based on this description therapeutic scraping, with its known capacities for fibroblast signaling, is part of mechanotherapy options to influence soft tissue remodeling and repair. The scraping mechanical stimulus also influences removal of debris by active macrophage cells. This ultimately promotes cellular function, translating into regaining elasticity, as opposed to stiffness, and relieving painful defects.

The network of soft tissue including fascia, muscles, tendons, and ligaments is applicable to mechanotherapy interventions for exercising regenerative treatments (58). Therapeutic scraping is a reliable source of physical medicine under the umbrella of manual treatments, using guided forces to treat cellular disruptions from fibrosis, which is fitting to restorative treatment options. The correlation between cellular soft tissue remodeling and scraping characteristics clearly emphasize regenerative effects linked to developing new soft tissue fiber patterns.

Returning to the macro level, based on the presented rationale, scraping’s utilization role with regards to soft tissue remodeling is to examine and detect restrictive fiber arrangements within fascia, muscles, tendons, and ligaments; and when indicated set out to rearrange fibers to slide in proper directions. Thereby breaking apart restrictions associated with myofascial tightness, trigger points, knots, spasms, adhesions, scar tissue, fibrotic nodules, muscle soreness, and stiffness. This is done using scraping tools to directly contact adhesions, and remodel by displacing restrictive tissues.

This ties in with other features of the multimodal mechanism for pain modulation by decreasing compression on pain nerve fibers. Imaging research has demonstrated that fascia are filled with nerves contributing to nociception (52). Conjointly, imaging of abnormal fascia changes have been demonstrated, showing that deformed fiber designs degrades soft tissues elasticity (36).

The fascia network needs to be examined in cases of musculoskeletal pathologies and pain syndromes. Fascia layers are innervated with bunches of nociceptors nerves that must be able to slide as they pass to various tissues. When stressed from overuse, poor posture, injury, or surgery, the fascia tightens, losing elastic abilities to slide. In the event of restrictive tissue and not being able to slide, fascia’s neural network senses compression of bodily tissues, triggering pain. From this is derived that therapeutic scraping provides contributions for correcting fascia and decompressing nociceptor signals that is vital to structure, function, and preventing painful stiff bodies.

With this information intentions for selecting interventions is heightened by awareness for use of soft tissue remodeling mechanisms. Providers’ success in repair and relief would be improved utilizing treatment methods that serve to regenerate and align healthy fibers. Thus, therapeutic scraping for soft tissue remodeling represents exclusive roles as not just a means of externally directed interventions, but for directly architecturally redesigning the musculoskeletal system.

Multimodal Model - Microcirculation Mechanisms

Perhaps the most intriguing and misunderstood component of therapeutic scraping are the easily observable red to purplish skin markings that can arise during the treatment. Puzzlingly, there is a divide between current sources on the matter, in which those opposed call out “bruising” as neglectful and unintended, while advocates point to “petechiae” as a vital component exclusive to scraping therapy. The therapeutic scraping multimodal model seeks to unravel the innerworkings of microcirculation and pin down best presented rationale for explaining how skin markings lend value to the injury restoration process.

Angiogenesis is the natural process by which growth of blood vessels occurs from existing vasculature throughout life. All active tissue within the various bodily systems rely on proximity to blood capillaries that developed by angiogenesis (1). Capillaries are made up of microvessels that are needed for diffusion exchange of nutrients and metabolites, in which oxygen is vital for cellular purposes. Microcirculation is the specialized term describing volumes of blood flowing through capillary networks. Coinciding with microcirculation, tissue perfusion describes absorption of nutrients from blood streams into specific bodily tissues for cellular application.

The cardiovascular system formulates angiogenesis by active hemangioblasts that produce into angioblasts, which gives rise to endothelial cells making up the lining of all blood vessels (1). In consideration of vasculogenesis, angioblasts create structures resembling blood islands, in which bundles of cells attach together for adapting new vascular networks (1). With regards to circulation within the movement system, there is increased requirements for metabolic activity to pass through vessels of differing volumes, in which the capillary has smallest size in order to flow nutrients within cellular compartments.

Muscle cells and capillaries are organized together, in which the quality of skeletal muscle necessitates greater metabolic activity from utilizing oxygen as primary means of nutritional support for movement. By commonly adapting to demands, muscular function stimulates angiogenesis that generates greater capillary networks; while at the same time, capillary reduction results from low muscle activity (1).

In matters of injury the capillary is pinched by soft tissue restrictions, and blood does not flow in proportion to movement demands. Fibrosis limits perfusion to injured soft tissue, restricting the supply of oxygen and nutrients, and interferes with collagen synthesis within recovering tissues (18). The slow pooling blood flow is commonly referred to as stagnation and is said to contain a toxic factor from not being able to transport nutrients into cells nor circulate waste away for elimination. There are a variety of waste materials that get trapped in vessel networks, such as lactic acid, metabolites, and other micro-angions that build-up and interfere with circulation, thereby diminishing exchange functions.

The factors that stimulate angiogenesis to build new capillaries forms the basis for therapeutic scraping to control blood vessel growth and removal of contaminants. Induced controlled microtrauma contributes to removal of blood and metabolic waste, which restores circulation and metabolic processes (12). As scraping enhances microcirculation, more rapid substance exchange occurs among the blood, lymphatic fluid, interstitial fluid, and the immune active cells (9). Once new blood supply is in an injured

In general, myofascial elements responds to thermal modalities that allow it to become more elastic and slippery for sliding, such as heating pads that warm up the tissue decreasing its viscosity and making it more limber. This is comparatively analogous to ice cream warming-up and becoming more oozy as it melts from solid to a sticky liquid form. In addition, hands on approaches, such as massage, myofascial release, facilitated stretches, and mobilizations directly contribute to elasticity. Furthermore, following along with this conventional rationale, bodily contact and friction with scraping tools mixes viscoelastic properties by generating heat, vibrations, and circulation to bring about physiological flow.

In practical guidance for cryotherapy versus thermal therapy to complement the treatment, either ice packs or heat pads have been applied to scraping therapy recipients after treatment with no adverse effects. And there is no focused research stating advantages or disadvantages of one form of thermal or cryotherapy over another with scraping treatments. Ordinarily, aside from cold application in acute conditions, heat or ice follow-up is up to the provider, or requests of the subject. Many times ice is a default selection as a post treatment modality in just about all types of rehab syndromes.

However, based on viscoelasticity and thermodynamic rationale, heat is the suggested modality of choice when treating soft tissue restrictions. Thermal modalities serve the purpose of warming and remodeling tissue, making it more pliable for manipulation and movement. With this view the proper sequence would be to start therapy sessions with a warm-up exercise or thermal application, then provide scraping, leading to corrective exercises, and lastly ending with heat pads. This sequence targets ECM viscoelasticity and tissue to conclude the therapy session with warm elastic bodies.

Multimodal Model - Theories for Pain Modulation

One of the most intriguing, but still not entirely understood aspects of any bodily treatment is how it influences the subjective nature of pain experiences. Facing the facts of life, from early childhood to late adulthood, physical pain will be felt by just about every single person, whether be momentary or prolonged. Most people are familiar with the notion of pain tolerance. Certain people claim a high pain tolerance, meaning that what is perceived as unpleasant by someone else, doesn't seem to bother them to the same level. This occurs in many ordinary scenarios involving not just a bad injury, but dealing with all sorts of situations, such as exercise, a lengthy day of labor, going to the dentist, etc.

There are numerous examples of what is tolerable to one individual is simply more painful to go through for another. Quite frankly, most people have come across a person who seemed to be overly complaining about pain that doesn't appear as bad as others would make it out to be. And at the same time, we've all come across someone who seem to be able to suffer more pain without verbalizing or showing distress that ordinarily has people cringing.

This places bodily pain into a unique position being characterized by both qualitative and quantitative states. On the one hand pain is a measurable physiological event, involving complexes of cellular structures, mechanical signaling, and mental processing, which requires exact stimulus, or pathology, to set off receptors and activate internal operations to reach individuals' awareness. On the other hand, pain has a component that is related to the subjective quality of the circumstances.

The International Association for the Study of Pain describes bodily pain as a subjective unpleasant sensory and emotional experience that is associated with actual or potential tissue damage (46). Several theories have been presented, whether it be mechanical, chemical, sensory, neurological, or even psychological processes, attempting to describe how an individual comes to perceiving and relieving bodily pain.

One therapeutically pertinent theory of pain explains that when injured tissue becomes inflamed, immune cells are recruited stimulating phagocyte activity (22). Through the process of phagocytosis, macrophages ideally clear unwanted cellular debris and waste materials (22). The presence of debris substrates and various immune cells leads to activating nociceptor pain nerves (22). The nociceptors themselves synthesize neuropeptides that alter surrounding tissue and form an inflammatory environment, in which upon contact with the fascial layers causes pain and creates a vicious cycle (5).

Another meaningful explanation of soft tissue pain is based on decreased quantity of hyaluronic acid that lessens tissue sliding, causing changes to the viscoelasticity of the fascial system, and resulting in nociceptor activation of pain signals (5). Thus, the subjective experience of minor discomfort to increasing higher levels of mild to severe pain with either acute injury or chronic tightness syndromes. When treating injuries and relieving pain, primarily of concern for therapeutic scraping is the detection of soft tissue restrictions bringing about fascia compression that carries over to pain pathways.

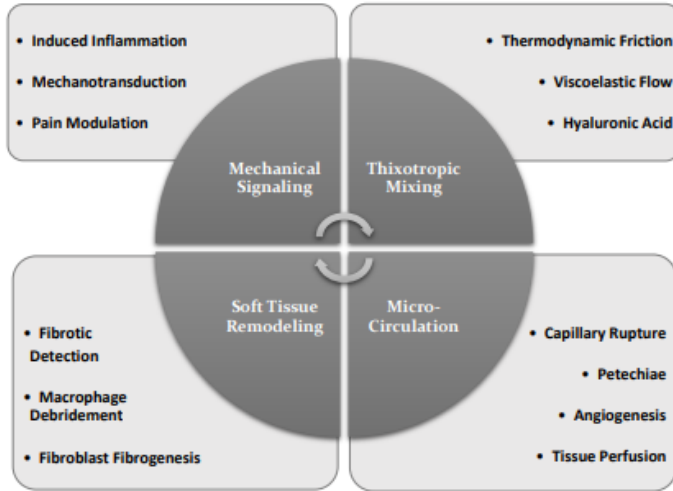
Essentially, nociceptors sensing mechanical stimulus from the soft tissue restriction pressure are bombarded by signaling demands. When nociceptor cells sense deformation, they send neural signals to the central nervous system that is perceived by the individual as pain. Initially this is activated by the experience of having an injury due to a particular mechanism, such as a forceful pull or a direct impact with another object. However, pain signals can also be activated by stressful overuse and patterns of poor postural tightness. Actually, there are numerous sources that cause tissue deformation and thus trigger pain signals, which may be short-lived or long-lasting in duration and level of intensity.

Therapeutic Scraping for Pain Relief

The mechanisms for effects on pain as described in application of manual therapy is suitable for understanding how therapeutic scraping makes contributions towards relief. Specifically looking into mechanical forces from manual therapy, and its relation to pain relief outcomes, points to interactions between biomechanical and neurophysiological responses (4). Imaging research has shown that fascia is filled with nociception sensory nerves that are responsive to manual pressure (31).

Manual therapy directly reduces fascial pain by biomechanical remodeling to lessen tissue deformation and decrease pressure on nociceptor fibers. This lends to having a pain modulation effect, in which nociceptors no longer transmit pain signals to the nervous system. This supplies the fundamental basis for using therapeutic scraping as an instrument of manual therapy seeking to control structural pain components and thereby provide relief care, in addition to other multimodal parts: remodeling, thermodynamics and viscoelasticity, and regenerative inflammation mechanisms.

Therapeutic Scraping Multimodal Model



Chapter 2 References

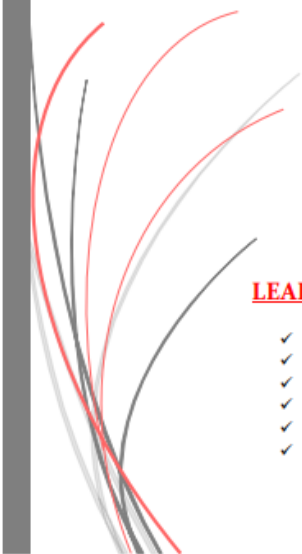
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Fundamental Concepts of Therapeutic Scraping



LEARNING OBJECTIVES

- ✓ Develop appreciation for various scraping customs in past history.
- ✓ Introduce objectives and outcomes linked with scraping.
- ✓ Compare IASTM and gua sha definitions, rationale, and application.
- ✓ Familiarize with petechiae scraping marks.
- ✓ Describe discrepancies resulting in confusion over scraping therapy.
- ✓ Advocate therapeutic scraping as mainstream physical medicine.

INTRODUCTION TO THERAPEUTIC SCRAPING CONCEPTS

By way of satisfactory tales circulating about using the edge of a handheld tool for bodily friction, therapeutic scraping is generating growing interests in personal and professional injury care. While general popularity and clinical utilization develops, what the future holds for scraping therapy to become fully accepted into mainstream medicine remains to be seen. This instruction manual's arrangement, content, and illustrative procedures, encourages thinking about scraping as a traditional based remedy that has overtime evolved into a tried-and-true valid modern day physical medicine.

Stemming from a long-standing historical representation that is plenty and meaningful, as a treatment modality scraping is sprouting into a rationale health-science that produces needed outcomes in physical rehabilitation, sports medicine, and health settings. Its lineage begins with several ancient societies, in which it is remarkable that different groups of people separated across lands had instincts to rely on scraping in varying ways. And now after all this time, the modern era is more recently putting together the scientific pieces and exploring clinical outcomes for how this treatment actually works.

Scraping treatment can be grouped under two cultural scopes based on Eastern and Western world practices. Traditional Chinese medicine scraping therapy, known as gua sha, is considered alternative or complementary care in Western senses. The World Health Organization and National Institute of Health uses these terms to describe medicinal options existing outside of conventional researched medicine. However, at this point gua sha is well-represented by published studies with details of scientific mechanisms and resulting outcomes. Furthermore, recognition in Western scraping, under the concept of instrument-assisted soft tissue mobilization (IASTM), has also brought forth abundant amounts of research connecting uses in commonly encountered injuries.

IASTM and gua sha appear to clash with regards to certain mechanism features involved. Even still, with regards to musculoskeletal pain and injury, the goals of rehabilitative outcomes and method of tool application are near identical. When used for treating the movement system, key objectives involve restoring soft tissue disorders that impair range of motion (ROM), strength, and activity, which contributes to subjective pain relief and overall restoration of function.

These particular objectives are concerns across a wide variety of different professionals, whose specialty is centered on providing care for soft tissue pain and injuries. It is therefore common interest to clarify principles, protocols, and technical applications for scraping treatments amongst providers involved in instrument-based soft tissue recovery. However, there are discrepancies in terminology usage, underlying mechanisms, and features of tools that must be clarified in order to even out familiarity amongst providers and recipients, as well as market brands and consumers.

Overall, scraping is a reliable form of physical medicine, which includes healthcare characteristics of examination, diagnosis, intervention, and re-evaluation for servicing injuries. The significance of exclusive scraping therapy benefits presents an exceptional force for getting to the basics of identifying and treating soft tissue elements. With this in mind, a paradigm shift is in order for therapeutic scraping to unquestionably be accepted for all-inclusive use by providers as a first-choice treatment option in mainstream musculoskeletal care.

Scraping's Paradox

Paradoxes are anomalies appearing to go against logical reasoning, but still hold elements of truth in situations that you would think are unlikely. Admittedly, therapeutic scraping is an exceptional oddity and a natural paradox that is contradicting to itself and may be hard for some to accept. An afflicted person comes across with bodily distress, and a blunt tool is dragged across their painful spot, while they endure slight soreness during the process. The scraping continues, and in some cases intends on causing a spectrum of red to deep purple streaking of the skin. And yet, afterwards it is possible for a recipient to voice feeling better and show improved movements.

Wouldn't it seem inconsistent that the apparent tool friction on the body surface has a certain helpful effect? Isn't the skin discoloration held out to be inherently wrong, like battering a bruise? So yes, naturally it would seem easy for any unacquainted spectator of therapeutic scraping to assume that it was anything but beneficial. Well the irony here is that despite any misperceptions, it is absolutely safe, reliable, and useful.

Scraping's paradox is based on recognizing the beneficial relationship that does in fact exist between inducing controlled trauma to a body part, which by natural means serves as a therapeutic source for reducing pain, restoring structural anatomy, and improving physical capabilities. To the general masses little is commonly known of this mystifying therapy that in actuality has been in use for thousands of years. And questionable debate is aroused by certain features of innerworkings and characteristics of its treatment. Of particular concern, and in great need of setting the record straight, are the appearances of scraping marks induced by the treatment.

These bizarre markings are often misperceived by observers as harmful trauma – which is not the case. While the opposed may claim these markings are unacceptable bruises that damage the body, nevertheless a lengthy historical record, as well as solid modern era research, in addition to consistent practical testimonies suggests otherwise. In actuality, effective results are derived from these kinds of scraping marks. This particular debate will be reoccurring as a theme throughout this manual in order to present best practice understanding and applications within mainstream usage.

Throughout this textbook's chapters it is an objective to build a case as to how scraping marks are a legitimate source of treatment advantage that serves mainstream values of Western practices in physical rehabilitation. This manual has a responsibility for threading together background science, along with outcome reports and procedure demonstrations, to make it clear and acceptable for trained providers to feel confident in therapeutic scraping's complete theory in practice.

Like Cures Like

"Nature creates nothing in vain," this was part of Aristotle's worldview embodying that the natural world always acts with a goal towards creating nothing without a purpose in each kind of living creature. When it comes to healing, the body is specified. And similar to a lock and key, to get a healing effect you have to fit the right tool to its related ailment to expect a resolution. Obviously, when

matching the wrong agent, there is no positive response, or worse yet an adverse effect occurs instead. In view of its reputation and dependable research collection, it is clear that a scraping tool is a key to naturally open specific physiological pathways that lead towards a world of healing effects.

Therapeutic scraping is not alone in being a remedy that fundamentally provides a controlled dose of bodily assault for initiating repair and healing. Homeopathic remedies are based on the principle, "like cures like," which describes that any substance that produces symptoms in a healthy person can cure similar symptoms in a person who is sick. These kinds of treatments are generally derived from natural substances that create symptoms alike those the body is currently suffering.

Homeopathy medicine is a medical philosophy and science based on the idea that the body can heal itself through self-regulatory processes. As a medical practice, homeopathy takes advantage of this by applying controlled doses of remedies that send the body into crisis, thereby causing healing pathways to be activated for treating and curing invading inflammatory triggers.

As a healing concept, homeopathy was known as the "law of similars," practiced by Aristotle and Hippocrates, and also mentioned in antiquated Hindu manuscripts. Allegedly, the great ancient physician Hippocrates may have originated homeopathy around 400 B.C.E. when he prescribed a small dose of mandrake root to treat mania, knowing the root itself causes mania in larger doses (16). The historical trail of support for homeopathic medicine also surfaces prominently in the 16th century, in which Paracelsus the originator of pharmacology practiced that small doses of what makes a man ill also cures him. Gandhi (1883-1984) also claimed, "homeopathy cures a larger percentage of cases than any other form of treatment and is beyond doubt safer and more economical."

As a workable medical science, homeopathy was developed by a German physician Dr. Samuel Hahnemann (1755-1843). He came to believe that all effective drugs produce symptoms in healthy individuals like those of the diseases that they treat, in accord with the "law of similars" previously proposed by ancient physicians (22). Dr. Hahnemann was famous throughout Europe for producing cures in some of the worst epidemics of the time, of which survival rates in homeopathic hospitals far surpassed those in conventional ones (22). Because of its success in healing the most serious diseases, homeopathy was soon practiced all over the world, and expanded throughout the 19th century into Western medicine practices (23).

The majority of homeopathic treatments are mixed from natural substances and produced into liquid, pill, and herbal forms that are administered to be ingested by mouth or absorbed as ointments through skin. Once the substance that is designed to mimic the abnormal condition is taken into the system, the body attempts to regain health through responding with active self-regulatory processes.

Even though therapeutic scraping is not at all based in processes for using solution compounds for medicinal purposes, there is an intriguing comparable link between the homeopathy medicinal principles of introducing minute dosages of toxins for self-regulatory repair. Firstly, both of these treatments are made available from the natural world, reminding us that Aristotle was correct in saying everything in nature has its purpose. And secondly, it is noteworthy to consider that scraping also provides a means of stimulated bodily crisis by way of inducing micro-trauma to start off inflammatory regulators that ultimately restore and replenish the treated region.

The notion of the law of similars matches roles therapeutic scraping plays in using a tool to intentionally induce a controlled dosage of inflammation to an existing inflamed bodily injury; producing

Scraping Therapy Terminology

The technical term applied in the medical setting and consumer market in the Western world of scraping therapy is instrument-assisted soft tissue mobilization, which is typically abbreviated when written and spoken as, "IASTM." There are several definitions that have been brought forth to define the particulars of IASTM. One creditable definition follows as:

"Instrument assisted soft-tissue mobilization is a skilled intervention that includes the use of specialized tools to manipulate the skin, myofascia, muscles, and tendons by various direct compressive stroke techniques (?)."

Despite attempts to describe IASTM, certain drawbacks exist for assigning exclusiveness to mechanisms of scraping therapy that are not a component to other tools used for assisted myofascia release. For example, one tool supplying research of over a hundred subjects to demonstrate usefulness for myofascia self-care is designed as a cross between a massage rolling stick and a scraper, which is applied by the user gliding the object over muscles to create shearing forces (15). Even though within the research article, key terms are used such as "tool-assisted self-myofascial release," and also "IASTM," the issue is the tool is not used the same way, nor derives the same mechanisms as scraping. However, a rolling stick certainly is an instrument, which is used for soft tissue management.

In another example, a foam roller is an object used for mobilizing soft tissue fascia and muscles by compressing and rolling over the body. The roller carries associations with IASTM descriptors as an item for soft tissue manipulation, but which does not impart the same physiological effects or technical applications as scraping treatment.

From this comparison, uncertainty is left over for distinguishing what scraping therapy mechanisms and techniques involve, versus other types of equipment, tools, or mechanical devices that seek the same objectives but rely on different principles. Massage vibration guns, rolling sticks, various trigger point devices, and countless gadgets exist on the market as instruments of soft tissue mobilization. And while these tools may be similar to each other, they are not comparable to therapeutic scraping's instruments, rationale, applications, or techniques.

Another point of disagreement for scraping therapy terminology revolves around clearing up distinctions between Eastern world practices, best known as gua sha, versus Western usage of IASTM. While gua sha boasts a historical reputation dating thousands of years in Asian culture, IASTM is considered to be an innovation of the common era with several brands setting themselves out as new approaches having different treatment and application principles. This textbook will compare IASTM and gua sha throughout chapters involving principles and outcomes in order to convey near identical forms of treatment aspects and results when used for muscle pain.

Gua sha may be defined as instrument-assisted mechanical stimulation of the body surface that intentionally creates therapeutic petechiae and ecchymosis representing extravasation of blood in the subcutis (18). Gua sha involves repeated, unidirectional, press-strokes of a lubricated skin area using a smooth-edged instrument, until sha blemishes appear due to blood congestion (4). The blemishes fade and completely resolve within 2-5 days with the symptoms being alleviated immediately or few hours later (4).

In addition, there is empirical indication for inducing petechiae and observably deriving improved bodily status. Interestingly, there appears to be direct correlation between the presence and intensity of petechia scraping marks with the prevailing issue of a particular area.

Signifying that scraping marks have an observable quality as follows:

- (1) In slight cases of pain or injury, there is relatively mild spread and intensity of color.
- (2) In cases of higher levels of pain or injury, the color intensity is darker and more widespread.
- (3) In long-existing pain or injury, petechiae is exceedingly widespread and darkest in color.
- (4) When there is no pain or injury, there is no presence of petechiae even as scraping is applied.
- (5) Once an area has been treated and scraping marks occur, there will be less petechiae at the next session, which continues tapering off over further treatments, in accord with reporting less pain.

After bringing forth descriptions for IASTM and gua sha, it can be seen that there are comparable explanations between the two regarding usage of a hand tool to scrape the surface of an involved body area. At the core of the matter, both gua sha and IASTM are applied in the same manner of scraping with the edge of a tool, and furthermore within the musculoskeletal system they are seeking to accomplish the same outcomes in pain relief, motion, and function.

As such, the distinguishing factor is objectively scraping to the point of petechiae, as in gua sha, or using timed-based parameters and avoiding skin marks under IASTM. At this point, if cultural differences were set aside, then gua sha is scraping therapy done with acceptance and intent for causing scraping marks. Meanwhile, IASTM is scraping therapy that does not produce petechiae, because of associations with harmful bruising.

The dilemma resides in whether or not it is reasonable to accept these two kinds of bodily scraping therapies as relatable, or should they be considered entirely separate from each other? Furthermore, does either an IASTM or gua sha approach perform over the other in ability to derive actual objective outcomes in pain relief and recovery in a quicker amount of time than the other?

Since IASTM is the application of therapeutic scraping without inducing petechiae, the method is providing a beneficial soft tissue remodeling effect, however there is less capitalizing on micro-circulation effects. And with this in view, it seems gua sha studies that mention inclusion of petechiae significantly outpace IASTM studies when reporting number of treatment sessions and relief effects for chronic muscle pain, which will be detailed in the upcoming Chapter 3 Relevant Outcomes.

Proponents of IASTM teach against usage of petechiae under notion of harm being done in the form of bruising. IASTM researchers claim, "professionals may consider gua sha approach a form of IASTM, but the treatment rationale, goals, and application differs from IASTM approaches (7)." Additionally stating, "Clinically, petechiae can be considered a precaution or a contraindication which may occur with treatment," and, "professionals and educators are moving away from petechiae because of iatrogenic tissue damage caused by scraping treatment (7)."

However, this textbook reviews rationale and research to clearly defend against misperceived limitations centered on harmful doing from scraping treatments that intentionally induce petechiae. Additionally, the procedural demonstrations section showcases a collection of clinical cases, involving safe and effective usage of scraping marks. It is intended that the included rationale, outcomes, and procedures will lend to bringing together both scopes of IASTM and gua sha practices to make use of best practice standards and unified approaches across mainstream treatments.

Taboos Over Bruises

Coming to grips with making use of scraping's benefits dovetails with clear intentions on overcoming any confusion, misperceptions, or chances for compromise in practice. The skillset of bodily scraping for therapeutic relief has been largely underestimated, and in modern times adverse conclusions are hastily drawn about adopting its use in daily clinical practices. With that said, this textbook does not approve or instruct scraping treatment that is intentionally, or neglectfully, applied in an overly forceful way that results in non-beneficial bruises.

The argument in support of scraping marks is centered on characterizing petechiae as actually a beneficial reaction. But the opposed insist these markings are bruises that are the result of a harmful treatment. The catch is that while IASTM followers may speak against scraping marks, they are using connotations attached to traumatic black and blue bruises, and not at all asymptomatic petechiae.

So this restriction to scraping is based on unfavorable impressions of skin marks. In fact, some outpatient clinics outright forbid usage because of confusion about bruises patients receive. Spare mention of outcome results, the concern is scraping looks bad for business practices. Even non-familiarized medical doctors mistake scraping marks as neglect, incompetence, or abuse. If you did not know what you were looking at, scraping marks give appearance that go against the norms and suggest wrongful trauma had taken place (scraping's paradox). Ideally, these kinds of markings will eventually develop more familiarity among healthcare professionals and viewing of the public eye.

Petechiae is the distinct skin marking resulting from properly induced scraping. It first appears in the form of spotted red blemishes that with continued scraping accumulates into wide-spread intense shades of light to dark red patterns. This skin marking is clearly set apart from black-blue bruising, called ecchymosis, associated with trauma. However, a search of definitions between the two terms is unclear, since both stem from blood vessels rupturing that causes the underlying discoloration. But an image search between the terms would show clear differences between red blotchy petechiae and black-blue bruising the likes of ecchymosis.

Reddish petechiae is associated with poor circulating blood that insufficiently transports oxygen and nutrients and builds up toxic particulates. When scraping erupts capillary microvessels, red blemishes form at the skin's surface, indicating a release of toxic blood. The skin's discoloration is transitory, fading within a few hours or days, and it does not carry any painful resemblances as bruises caused by force, impact, or battery. There is not necessarily an expectation that the body region having petechiae will be sore or limited in function in anyway as a specific attribute to the marking. Additionally, it is not typical for recipients to be worse-off than baseline pain scale and impairments.

While there are some medical conditions that adversely produce petechiae as a sign of ailment, in the case of therapeutic scraping it is absolutely an intended effect, especially for treating indicated soft tissue, such as muscle pain. And, though scraping applied incorrectly can produce ecchymosis type bruising, this is usually associated with being too aggressive with the tool, which is a user's technical error and not an effect of the treatment itself, as would be applied by any reasonably trained provider.

A scraping therapy provider does not have to be aggressive to create petechiae, and at times a complete light-handed sense while sliding over the skin without applying too much force is precisely what is needed to induce the physiological effect. The differences between use of these two bruising terms, as well as associations for harm, along with provider know-how to apply proper petechiae marks instead of ecchymosis, creates confusion among general public, healthcare providers, and scraping brands.

While there is disagreement whether or not to induce petechiae, this textbook absolutely supports the process of scraping for intentionally creating therapeutic scraping marks. The reason for this is entirely supported by scientific rationale, in which the presence of petechiae induced by scraping is a precise sign of micro-vessel eruption, which facilitates improved circulation and is verified in outcome reports to have a positive effect on pain and function. Also, the interpretation of this research comes on the tail-end of a long lineage of empirical support implied from historical representations, particularly by gua sha.

Research of micro-circulation and petechiae benefits shows these markings are not harmful bruises. For example, Nielson reported that subjects receiving gua sha scraping demonstrated petechiae with a 400% increase in micro-circulation, and participants having resolved pain (19). In light of this, anyone referring to petechiae markings for making claims of inappropriate harmful bruising that leaves people in pain is either misinformed, uninformed, or disinforming on the treatment approach. And in view of remarkable research by Nielson, it would be hard-pressed for most any other commonly used outpatient musculoskeletal intervention to deliver comparable effects as easily.

In actuality, scraping marks can be taken as active in-session feedback that objectively offers indication of achieving a desired point of beneficial physiological change. At the same time, without reaching the point of positive feedback, then the physiological benefit and resulting outcomes are not fulfilled. Therefore, taboos over skin markings must be cleared up to gain full advantage of effects associated with micro-circulation that are exclusive to therapeutic scraping. They are not bruises and should not be confused with abuse, negligence, or incompetence. Scraping marks are signs of evident healing in progress, which are a special feature that other soft tissue treatments cannot provide.

General Confusion About Scraping Therapy

With regards to terminology, mechanisms, and tools within the market of scraping therapy, there is a great deal of discrepancies to account for amongst different brands. By product name scraping is mainly signified by Graston Technique® emerging in the 90's. Since then, several other companies have been organized, such as Astym®, the Fascial Abrasion Technique®, Hawkgrrips®, RockBlades®, and many others specializing in offering scraping tools and instructional materials.

One aspect of consumer uncertainty is created by brands based on their unique tool designs. For instance, Graston Technique® may have been first to introduce a special set of multiple scraping tools, pairing with specific protocols for examination and treatment. At present, an online search shows dozens of different brand and generic tools. Most companies market unique shapes, materials, and boast specialized instrument features, which are sold at comparably higher prices. Meanwhile, there are many cheaper generic tools, often advertised for gua sha scraping. Setting aesthetic preferences aside, from the consumer perspective there really is no indication as to whether or not a higher priced item somehow functionally performs better than a lesser priced tool.

Calling attention to explanations of mechanisms behind scraping therapy seems to vary across brands and cultures. For example, the brand known as Astym® holds itself out to be “distinctly different” from methods and results of IASTM (8). The position of the brand’s tools and educational offerings indicate that IASTM methods are not well tolerated by recipients, because of its focus of using the tool to break apart tissue (8). This implies that Astym® methods and tool features gets results without going as aggressive with scraping tools. Astym® explains that its therapy targets regenerative mechanisms aiming to repair damaged tissue and reabsorb scar tissue (8).

While in no way seeking to discredit Astym® as a form of scraping therapy, it is important to point out the confusion in descriptors that the brand is using. Placing consideration on rationale, the regenerative mechanisms that repair soft tissue is based on pioneering research of Davidson et al., followed by Gehlsen et al., who discovered that the primary means for remodeling is attributed to cellular fibroblast activity stimulated by mechanical stimulus (10,13). This mechanism is essentially at root in all forms of scraping therapy and is the objective of every brand tool.

So there is no clear distinction here as to why Astym® would suggest their brand is focused on regenerative mechanisms of repair any different than IASTM. Meanwhile, one can’t help but notice the company’s name, “Astym,” matched against terminology “IASTM,” is near identical and thus escalates general confusion around the two. Especially considering that the brand literally prints on its webpage that Astym® is different than IASTM. Actually, IASTM is a generalized umbrella term for scraping, while Astym® is a great brand name specializing in its own associated products, education, and services.

Another related example to varying confusion in scraping therapy can be seen from IASTM brands placing themselves as current era innovations, whose purpose is to treat pain and injuries based on scraping for breaking up adhesions, but at same time claims not to be linked to pre-existing gua sha. However, gua sha has already long been known for using a tool to break apart blockages in soft tissue. Although, while the two scopes of scraping are similar based in using a tool to scrape a painful body area for treatment, they differ in describing underlying physiological mechanisms at play.

The treatment for both gua sha and IASTM is established by palpating for soft tissue abnormalities, called restrictions or blockages. When indicated, each system’s application involves scraping the body’s surface using a hand tool over the course of a single to several sessions, for making an impact on relieving pain and restoring function. And yet, both scopes of scraping practice would draw a line of distinction between each other.

Gua sha is rationally based on research into micro-circulation improvements, characterized by distinct scraping marks resulting from treatment. It is not focused on the same research for soft tissue remodeling grounded in mechanical stimulus of fibroblasts as IASTM relies on to support utilization.

However, this textbook suggests that clearly while scraping for micro-circulation is taking place, at the same time the tool is providing the exact contact stimulus that triggers fibroblast activity as IASTM.

Lending further to mechanism-based consumer confusion, the divide between gua sha and IASTM regarding “bruising” and need for petechiae in the treatment process surfaces in the market. The IASTM conception held is that gua sha’s intent on targeting capillaries for eruption is not a beneficial treatment aspect. Also, most IASTM brands advertise as being not only different than gua sha, but a better option; emphasizing that they do not cause “bruising.”

For example, an IASTM tool company advertises online, “The Fascial Abrasion Technique® tool is much different than the many associated soft tissue mobilization tools on the market. Unlike tools that have a smooth surface, the Fascial Abrasion Technique® tool has a patented textured surface that allows for... release without bruising.”

Meanwhile, the Sidekick® webpage pays homage to mechanisms in terms of gua sha scraping stating, “Sidekick® scrapers are based on the technique known as gua sha, a 2000-year-old Eastern medicine practice.” The Sidekick® company goes on to explain in its FAQ section regarding, “Is it normal to get bright red spots after using the tool?” and answering, “Yes...this is called petechiae...the redness is a good sign,” and further adding, “if you continue working on the area (after redness occurs), it can become purple like a bruise, which is not recommended.”

The “bruising” misnomer is made clear in countless other examples across the internet, in which scraping marks come under opposition. Occasionally opponents will even display a picture of recipients of petechiae marks, which are in no way black and blue. But while unaware that the picture shows asymptomatic petechiae, which has been described in research as beneficial signs of micro-circulation, even still there is mention of a traumatic occurrence, or a harmful treatment procedure.

Collectively, these examples represent the overwhelming ambiguity between brands adding to the market confusion and misinformation going around scraping therapy. It is clear that bruising and petechiae discrepancies are rampant, with brands and education not on the same page as they take different positions on mechanisms and applications. This influences tool selection and technical application by consumers of scraping products and information.

Perhaps this confusion is driven by not wanting to deter consumer interests or acceptance into healthcare business practices. It is likely that bruising misconceptions in Western practice is based on adopting scraping later in time, and having difficulty adapting familiarity to appearances of petechiae, in a culture already spun on legal or reputation repercussions connected with bruising and abuse. This confusion is also attributed to failure to properly bring together pre-existing Eastern explanations for gua sha scraping, with newly formed Western marketing of IASTM. Certainly, no literature supports or has even been carried out on healing benefits of black and blue “bruising.” But petechiae skin markings are not at all related to this and to the contrary published gua sha studies do explain rationale mechanisms as well as positive impact from scraping marks.

It serves to reveal that there is a great deal of inconsistent statements and misconceptions unchecked throughout the healthcare and consumer settings regarding scraping therapy. The shifty use of descriptive terms has undeniably resulted in a trifecta of ambiguity between differences in brands’ rationale, tool features, and most of all scraping marks. While brands certainly have rights to represent

themselves by offering products and providing educational services, even still the essence of scraping tools, explanations of mechanisms, and technical applications should be on similar tracks.

Therapeutic Scraping Integration

The sole intent of addressing inconsistencies in Western brands and Eastern culture scraping is to clear up ambiguity in order to facilitate better standardization of terminology and protocols for furthering overall acceptance into medical, sports, health-wellness, and consumer arenas. Discussing these discrepancies between any particular brand or providers of scraping therapy is in no way an attempt for discrediting nor favoring any company, product, or service. These claims are presented to comment on conflicts in use of descriptive language that leads to consumer and provider confusion.

The lack of proper information is a discourtesy to consumers, students of health-sciences, and medical providers for facilitating care. Even still, the recovery of soft tissue function represents one of the most important goals in rehabilitation, and capable aspects that all scraping brands can deliver. Numerous studies investigating uses of scraping for treating injuries and pain in medical and sports medicine settings point to positive outcomes. From these studies it is clearly demonstrated that scraping treatment improves joint ROM, flexibility, and muscle strength, while decreasing pain, and lending to a faster healing recovery period.

In order to better bridge IASTM brands and gua sha into a modern unified treatment based on having reliable techniques and outcomes, a more generalized descriptive label should be made. In addition, to unaware health care providers, the consumer market, and potential scraping recipients, the terms "IASTM," and "gua sha," carries little value in easily describing scraping therapy with people in mainstream usage. Developing a more focused descriptor that is informative, recognizable, and an easier spoken term, would lend to increasing familiarity and reducing overall confusion.

IASTM as an applied term, instrument-assisted soft tissue mobilization, does little justice for characterizing exclusive features of scraping therapy. While "instrument" refers to using a handheld device and "assisted" speaks to applications for soft tissue mobilization, this is not as specific as it would seem. Many therapists have long used all sorts of handheld instruments in the form of rolling sticks, trigger point items, and electric gadgets, among many others to assist treating soft tissue, which are not in line with scraping's application or mechanisms.

As a primary over-all descriptor of Western scraping therapy, IASTM does not accurately express: (1) suggestion of using scraping tools specifically, (2) indication of exclusive mechanisms to scraping (fibroblast remodeling and micro-circulation) that is different than other soft tissue treatment products, and (3) a straightforward reliable term for a therapeutic process. Instead, IASTM – "instrument-assisted soft tissue mobilization," is a mouthful of a term to verbalize that necessitates further explanation for what the abbreviation and its word components actually mean, in order to distinguish from other types of soft tissue products and treatment approaches.

Because of this, adopting widespread association with the terminology of therapeutic scraping as the general name applied to this treatment technique would be more useful towards popular familiarity. This serves as an agreeable umbrella term that includes features of both IASTM and gua sha, in which providers modulate scraping techniques to account for best practice parameters.

The arrangement as therapeutic scraping serves to: (1) express accurate language of the exact treatment; (2) make immediate association with a therapeutic process; (3) imply specialty knowledge and training in providing a therapeutic treatment; (4) suggest that a scraping tool is used; and (5) generically describes scraping to all people, while freeing up any unfamiliar traditional cultural language, or specific brand's trademark name from its general use.

therapeutic scraping: -- v. A therapeutic act of bodily scraping using the edge of a handheld tool for detecting, manipulating, and restoring soft tissue restrictions by remodeling and micro-circulation processes, for intent on providing pain relief and accelerating injury recovery.

scraping mark: -- n. An intentional treatment feature of therapeutic scraping, involving a visible reddish skin marking that is associated with breaking apart of contaminated capillary micro-vessels.

Classifying Scraping Treatment as Alternative Medicine

To this day, while living in the era of high-tech medical advancements and pharmaceuticals, a large majority of people are preferable to natural products and treatment remedies. Along with this, the terms traditional, alternative, and complementary medicine are comparably synonymous to people's thinking about this kind of health management. Traditional medicine is based in practices and ideals for bodily health within a culture, which often have stood test of time as remedies while being passed on by its peoples.

When adopted outside the culture, traditional medicine is more often referred to as alternative medicine. The National Center for Complementary and Integrative Health (NCCIH) is a U.S. government agency, whose task is to state usefulness of complementary interventions in healthcare. While the NCCIH describes aspects of alternative medicine, the agency declares these treatments as approaches that are not part of conventional medicine having origins in usual Western practice.

The NCCIH further states (9):

- If a non-mainstream practice is used together with conventional medicine, it is considered complementary.
- If a non-mainstream practice is used in place of conventional medicine, it is considered alternative.

In matters of scraping therapy, under two broad headings as IASTM and gua sha there is no shortage of research validating mechanisms of physiological changes or reporting effectiveness of treatment outcomes. As a physical medicine, for purposes of therapeutic scraping the provider is attempting to build a case for being presented with a musculoskeletal related soft tissue injury that is likely to positively respond with a successful treatment outcome.

The therapeutic act of scraping refers to instrument-based means of soft tissue physical treatment to elicit a local inflammatory response that promotes breakdown of restrictive adhesions, synthesis of new fibers for connective tissue remodeling, along with new circulation; for purposes of reshaping normal anatomical structure, offsetting painful symptoms, and gaining ideal movement mechanics for activity.

The technical application of scraping therapy as an intervention involves the provider acting to use the scraping tool for detecting and resolving soft tissue restrictions embedded within anatomical sites matching the subject's chief complaints. If obstruction is detected, then it is implied as a diagnostic factor for soft tissue disorder and scraping may be indicated for use upon contraindication clearance.

The essential factor of scraping therapy's evaluation and treatment of soft tissue is formulated from palpation that may be able to pin-point the site requiring rehabilitative repair. Palpation entails examining through feeling with fingers, hands, and scraping tools for purposes of determining presence of any abnormality for indicating injury. This examination step is standard procedure in any physical assessment to target exact anatomy and distinguish consistency, texture, and tenderness in a body part.

During treatment, the scraping tool provides tactile feedback to the provider, which is felt as vibrational resonance, indicating the quality of relative ease or obstruction present within soft tissue. Additionally, during application the tool has a mechanical advantage that allows greater leverage of manipulative force than what can be accomplished with bare hands alone.

Throughout the process the scraping provider continuously assesses, while applying tactics for modulating strokes and making decisions for inducing, or not, therapeutic scraping marks. The provider should be present-minded for purposes of detecting soft tissue restrictions, and awareness of in-time resolution felt as a release and subsequent less resistance in tool resonance as remodeling takes place along anatomical pathways. Once this occurs, adjoining therapies, e.g., mobilizations, stretches, or exercises, may then be accomplished better. Additionally, periodic re-evaluation progress reports should occur to establish outcome effects on pain, ROM, strength, etc.

Today with support of science explaining the treatment's rationale and clinical studies looking into the effectiveness of scraping therapy's outcomes, mainstream medicine is really on the brink of unfolding scraping as a modern form of treatment. Therapeutic scraping is a means of physical medicine aimed at treating pain and injury disorders that includes muscles, tendons, and ligaments. In consideration of treating the musculoskeletal system, scraping can be handled in a systematic, repeatable, and verifiable way for meeting major needs in alleviating pain and facilitating ROM, strength, and activity participation.

At a deep-rooted level, the human body is a mechanical structure designed with a variety of innate abilities for inner functioning and self-regulation, including using the inflammatory cycles for repairing itself of issues present in ordinary living. One way or another by design the body intimately

recognizes scraping as a stimulus for healing benefits. In view of improving circulation, modulating pain, and activating repair, therapeutic scraping is perfectly fit as a physical medicine treatment option.

A paradigm shift is in order for bringing together IASTM and gua sha rationale, outcomes, and methods of application into a comprehensive model. Therapeutic scraping absolutely represents a schematic order of components that constitute a satisfactory medical model, complete with applicable structure for examination, intervention, and re-evaluation that is reliable by standards of care. With the introduction of IASTM research and development, scraping therapy has branched within Western healthcare, progressing beyond definitions of alternative medicine into the contemporary mainstream.

Advocating Mainstream Scraping Therapy Practice

Moving ahead into the future, the conceptual framework and vocational training of productive scraping therapy seems entirely in good measure and wholeheartedly sensical to advocate. This requires educating therapeutic scraping as part of core curriculum in health-science academics. Backing therapeutic scraping also involves encouraging healthcare businesses servicing musculoskeletal pain and injury to confidently implement scraping treatment protocols. Furthermore, Western medicine culture ought to transition into coming to grips with scraping marks as part of a bona fide physical medicine and no longer dismissing it as harmful or alternative medicine mumbo-jumbo.

When discussing the effectiveness of a particular treatment two components play key, the status of the recipient after therapy is completed, then how much change occurred within a given time. In light of research, the relevance lending answer to how effective scraping therapy is for bringing about change is evident for both IASTM and gua sha. Evidence from studies engaging regenerative and micro-circulation mechanisms show consistent safe and effective results from scraping therapy. Based on the results of the present view, the incorporation of scraping therapy as a whole, regardless of brand or cultural barriers should be considered for acceptable conventional practices.

It is therefore sensical to promote inclusion of its use, effects, and benefits to a greater portion of providers to make more accessible for people needing treatment. Ultimately, therapeutic scraping is one of the most universal, predictable, and repeatable therapeutic processes in the collective arsenal of healing tactics available in modern times. Completely 100% natural, no need for expensive equipment, no exposure to harmful substances, and no adverse side-effects. As a healing modality, scraping is not only astounding and agreeable, but also permanently beneficial.

Since ancient scraping times, physiologically the body has not changed. The methodology at its basic sense will always be able to trigger healing pathways for positively impacting circulation, while at the same time making use of the hand tool to remodel soft tissue. The procedure will never necessarily require more complex devices, or advanced technologies to accomplish the same essential objectives. This makes for a practical, easily accessible, and financially viable soft tissue treatment option.

While therapeutic scraping represents a topic of growing interest, it should be a priority to reduce ambiguity in fundamental terms so that this specialty can properly advance. Lack of stable terminology and misunderstandings has a negative effect on communication within health professions and impedes

collaborations for bringing treatments to the public. It is hoped that this material can be used to improve consistency in descriptions, general awareness, and making practical use, in order to aim at developing an agreeable framework for therapeutic scraping.

This can be helped by declaring scraping as a specialized type of physical medicine and offering its introduction to larger numbers of professionals in related fields. This would be accelerated more at the academic level, in which currently scraping therapy is not core curriculum nor requirement of entry-level providers who will treat soft tissue injuries. Instead, IASTM coursework is pursued based in personal interests more like an elective format of continuing education later down the line.

In the realms of academics, science is systematically branched based on innerworkings into particular areas of study, for example biology or chemistry. Classifying scraping therapy under a particular science heading could be varied but is essential to derive for lending further understanding and development. Sparing little time to speculate, based in related associations as a physical modality, scraping therapy best categorically falls under the health-sciences umbrella within kinesiology, which is the study of human movement, also known as exercise science.

Academia's gateway for developing students to become involved in direct applications of fitness, health, and rehabilitation of injuries is often categorically offered as a kinesiology program. The packaged curriculum forms the basis for studying the human body, such as: anatomy, biomechanics, biochemistry, physiology, sports medicine, injury evaluation, etc. After entry-level kinesiology programs, graduates enter the work field or continue on towards advanced degrees, e.g., Doctor of Physical Therapy or Chiropractic. Collectively the domain of kinesiology best supplies building blocks for teaching mechanisms of therapeutic scraping and introducing technical applications.

At this point, differently than just about any other medical practice scraping therapy has evolved to encompass being applicable to a variety of distinct branches of medical associations who work with treating pain and dysfunction related to soft tissue injuries and the musculoskeletal system. Logically, seeking out better muscle flexibility, strength, and greater joint ROM is a common goal of rehabilitative programs seeking to resolve injury symptoms, restore anatomical mechanics, increase movement performance, and return to function.

At the basis of the matter all therapists professionally involved with treating soft tissue injuries should know the common principles of scraping therapy as a treatment option. The painter needs brushes, the carpenter a hammer, an officer of the law and soldiers are trained in weaponry. Similarly, a manual therapist should be comfortable in their specialty with scraping tools to handle soft tissue.

Within Western culture, scraping therapy is an absolutely relevant and applicable choice physical modality in treating injuries for many associations of healthcare specialties. For each of these professional organizations an undeniable unifying theme exists for serving to recover movement-based injuries, treat bodily pain, and restore functional ability, of which scraping therapy provides a common thread linking occupational interests together.

The ultimate aim for coming to terms with scraping therapy between academic circles, brands, consumer markets, and medical practices is for intending to stabilize professional expertise, standardize technical uniformity, while at the same time heighten mainstream awareness of the treatment. With more familiarity, adaptive clinical use, and provider representation, there are high hopes for placing a spotlight on scraping's value as a qualified and necessary form of contemporary physical medicine.

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Principle Mechanisms in Therapeutic Scraping

LEARNING OBJECTIVES

- ✓ Identify an empirical science foundation in scraping traditions.
- ✓ Establish an all-encompassing multiple mechanism scraping theory.
- ✓ Conceptualize induced inflammation by microtrauma treatment.
- ✓ Explain basic principles of soft tissue remodeling.
- ✓ Indicate the value of scraping marks by microcirculation principles.
- ✓ Describe soft tissue thermodynamics and viscoelasticity.
- ✓ Consider pain modulation in physical rehab science.
- ✓ Integrate therapeutic scraping pro-resolution reactions into practice.

OVERVIEW OF THERAPEUTIC SCRAPING MECHANISMS

The scientific rationale for therapeutic scraping provides framework for describing mechanisms and physiological changes, accounting for the beneficial uses as a physical medicine. The following mechanism content connects scraping's main functions in pain and injury relief together with processes accelerating soft tissue recovery. With clear descriptions and reason in place, an overall multimodal model will be presented within this section to explain essential physiological innerworkings during the course of scraping treatments.

In actuality, generally people can make use of scraping without delving deep into its mechanisms, or research, the same as they can use a toaster without having to understand electrical engineering. This will be represented within this manual by the empirical model for therapeutic scraping, in which a common precept will be derived for associating natural observations of the treatment. This preliminary approach is based in keen regard to the evolution of varying forms of scraping therapy presented in Chapter 1's brief discussion of historical representations.

It can be suggested that earlier civilizations paved the way for observing, interpreting, and reporting bodily scraping for therapeutic purposes. Each mentioned culture provided their own mix of support for validating daily usage as a worthwhile experience. This was done without the studies and instruments we rely on today. So appreciation for a scientific background in therapeutic scraping is partly based in contributions from past observations and applications happening in earlier times. Moving into the modern era, scraping survives as an ancient practice that has endured the test of time, still remaining relevant today, and is on course ahead from continuing to provide beneficial impact.

To date, scraping has now been analyzed more precisely, revealing a number of specialty factors. Operating as interdependent mechanisms, these influences come together simultaneously to impact physiological changes unmatched by other commonly used relatable treatments. Leading research reviews indicate that scraping therapy has effects on increasing blood flow, reducing tissue viscosity, releasing myofascial tension, disrupting pain signals, and improving flexibility of underlying tissue. The many mechanisms at play constitutes a complex layering of processes, of which each arises its own volume of information and expertise. For the purposes of this manual's introduction to therapeutic scraping, key basic scientific characteristics are presented for theoretical training.

The outlay of this section serves as the primary logical component to scraping therapy. It takes the provider from simple to complex, starting at the point of origin, using an empirical framework to lay the foundation before reviewing common-era research reporting on rationale of mechanisms. Readers can expect the material to expand into a multimodal model putting together a reasonable description for the key principles to be aware of with regards to: (1) soft tissue remodeling, (2) microcirculation, (3) thermal-fluid dynamics, and (4) pain modulation.

This multimodal model is conceptualized as a system for providers to take their pre-existing working knowledge of rehab principles and progress it by blending with mechanisms completed under scraping therapy. Therefore it is expected that the reader will already have an adequate background and familiarity with relating to an intermediate level of scientific terms and physiological processes to fully understand the learning objectives presented.

modern technologies we have now been able to investigate, analyze, and expand research on the actual mechanisms and subsequent living outcomes presented from scraping utilization.

Presenting the empirical model for therapeutic scraping helps describe how we got to where we are today with the treatment. However, the gaps contained within the generalizations of the model can now be filled in with a strictly rationale presentation focused at reviewing the nature of transpiring physiological mechanisms. Contrasting empirical support is the rationalism view, in which the source of knowledge is not based in senses alone, but by intellectual reasoning, testing, and deductive theorizing to reach conclusions. At this point scraping therapy is in no shortage of studies carried out by interested researchers attempting to unravel just how scraping therapy actually works.

This manual seeks to fulfill reviewing a spectrum of information for stacking bits of logic in the fundamental knowledge underlying therapeutic scraping. Then, providers will be better able to participate as observers and interpreters in adapting theoretical practices of therapeutic scraping to accomplish intended rehabilitation effects. Between features from both the empirical record and rationalist model, justification for proof of therapeutic scraping, as well as its associated skin markings, are no longer debatable. As will be seen, today's scientific tools make observations of the past easy while objectively diving further into microscopic detail.

Multimodal Model of Therapeutic Scraping

Scraping therapy is exceptional in that there are several different physiological mechanisms, compounding into an elaborate texture of interdependent processes. It is remarkable to bring light to characterizing these individual factors that form overlapping principles of scientific rationale, for distinguishing the basis in providing scraping therapy within mainstream clinical and sport settings. Of particular concern in these areas, and chief aim of this material, is best-practice standards for managing care of soft tissue related musculoskeletal injuries. More often than not, when someone has acute, sub-acute, or chronic bodily pain, soft tissue restrictions that are tender to palpation and painfully symptomatic are to be anticipated. Therapeutic scraping specifically targets treating these restrictions by using manipulation techniques with the tool for latching on to and paving out adhesive areas.

Due to its conjoining technical material, a multimodal model approach best signifies the overlapping physiological mechanisms serving key features in therapeutic scraping. The multimodal description of therapeutic scraping depicts the modality's exclusive capacity to combine soft tissue remodeling, along with aspects of inducing microcirculation, shaping thermal fluid dynamics, and modulating biomechanical pain signals. The combination of these mechanisms allows scraping recipients to experience an assortment of underlying physiological changes that go unseen to the eye, but which manifests on the macro level in the form of less pain and better motion with activity.

The initial starting point for clinical providers to harness these mechanisms is an intent on causing small-scale injury stimulating inflammatory repair responses for remodeling restrictive tissue. The concept of induced controlled microtrauma for stimulating inflammation derives principles for using a scraping tool, firstly as a mechanical device to debris irregular fiber and vessel arrangements. And

secondly, for introducing an injury stimulus triggering repair by inflammatory responders capable of anatomical restorations upon removal of restrictive intrusions.

Paralleling the cascade of remodeling mechanisms taking place, are key features involving the control of circulatory flow to and from cells, regarded as tissue perfusion. The role scraping therapy plays in tissue perfusion is represented by discharging trapped blood collecting toxins within microvessels making up the capillary networks. The direct targeting of the capillary network intentionally disrupts the non-functional construct, essentially destroying it for rapid rebuilding to begin. In response to the induced microtrauma, the body's healing mechanisms are activated nearly at the same time of disruption, which calls for immediate formation of new capillary beds to regenerate. And with that a fresh source of nourishing blood supply is delivered to the treatment area.

This aspect of microcirculation will tie in with other rationale on flowing mechanisms that are extended towards concepts for mixing viscoelastic properties, using the scraping tool to apply bodily surface friction that heats up and stirs targeted soft tissue elastin elements. Lastly, with these foundational mechanisms in view, effects for deriving pain modulation mechanisms that contribute to relieving subjective symptoms will be reviewed. While as a whole throughout health sciences there are numerous theories attempting to explain how the body accommodates pain, this material will focus on one key aspect involving the intent on decompressing embedded nociceptor pain receptors within injured soft tissue areas needing treatment. Ultimately, bringing the collective multi-modal rationale together, therapeutic scraping acts a pro-active response to inflammation and soft tissue rehabilitation.

Multimodal Model - The Inflammatory Repair Response

Human beings rely on the immune system's encoded procedures as the first response to trauma or disease. Whether taking place from occupational routines, sports play, common exercise, or everyday ADL's, injuries are all too natural and frequent to the movement system. Safe to say that just about everyone will at some point deal with moderate to severe pain, or injury, within soft tissue (muscles, tendons, ligaments, etc.) that normally allow the body to move comfortably through the day. In fact, since damage is to be frequently expected, by design the body is equipped with its own onboard processes that aid recovery from injury, infection, and illness.

Inflammation is the body's natural way of alerting to the presence of an injury, protecting the inflicted anatomy, and setting out towards self-repair. The healing body is capable of an extraordinary cascade of cellular functions, in which for example muscle or tendon regeneration entails removal of structural debris for implanting new healthy tissue fibers. However, normal tissue repair is not guaranteed, and difficulty arises when there are delays, failures to heal, or getting out-right stuck in cycle, in which the restoration cannot naturally take place.

A major issue inhibiting inflammation's fulfillment towards recovery is restricted soft tissue blocking the way. If not treated properly the inflammation process is limited by inadequately arranged collagen fibers and poor vascularization. This is basically synonymous with scar tissue, adhesions, and fibrotic tissue. Fibrosis is the result of disorganization of connective tissue with an overgrowth of fibroblasts due to a chronic inflammatory environment (2). When fibrosis occurs changes in compression

creates ongoing inflammation and activation of nociceptors pain signals. Then non-beneficial chronic inflammation continues in the soft tissue injury cycle, causing more tissue degeneration, which is often perceived as bodily pain and stiffness.

For instance, chronic variations of low-grade inflammation that is commonly characterized as wear and tear on the body is in part attributed to a perpetual soft tissue injury cycle, in which after being overloaded or subjected to long duration overuse, an ongoing inflammatory condition is recurring. As structures attempt to repair, a cumulative degree of stiffness is introduced as newer remodeling fibers are placed in line with pre-existing poor arrangements. This develops into larger scale restrictions within the muscles and joint that impact imbalances, dysfunctional movement, and having pain.

Oftentimes, as the individual lives through further daily routines, or physically demanding activities, the faulty joint and muscle movements are improperly stressed, and periodically begin to symptomatically flare-up. Consequently, inflammation never really stops nor meets a successful restoration outcome. Meanwhile, the perpetual soft tissue injury cycle proceeds, in which sooner or later there is chance for further injury or ongoing bodily pain to impede function.

Summary of Conventional Phases of Inflammation

Overall, the topic of inflammation is very in-depth, whose applicability extends across many specialties of health sciences. In order to introduce a theoretical basis in therapeutic scraping, there are certain key inflammatory actions to be recognized. While in laypersons' sense, inflammation is typically spoken about negatively in connection with injury, pain, swelling, dysfunction, etc., in actuality the cycles exist to recover the body. Thus, scraping capitalizes on inducing inflammation for therapeutic purposes to facilitate reparative and remodeling processes.

Understanding inflammation repair cycles as an automated bodily process that is compromised by adhesions, provides key basis for therapeutic scraping to minimize fibrotic restrictions. Fibrosis is a common dysfunctional concern for many unfavorable soft tissue conditions. After an injury, in presence of inflammation, fibrosis causes scar tissue formation within injured soft tissue (48). These fibrotic changes reduce tissue elasticity, cause adhesions, decrease function, and cause pain (25). In addition, scar tissue limits perfusion to injured soft tissue, restricting supplies of oxygen, and thereby interfering with recovering tissues (10, 18, 28).

Descriptors of inflammatory phases usually involve an acute protective stage starting at trauma that lasts a few days; overlapped by a sub-acute reparative period extending 3 to 6 weeks; and a chronic remodeling stage taking place over the course of 3 months. Within each phase, special objectives distinguish cellular, structural, and mechanical changes taking place, making inflammation vital in bodily recovery responses.

Inflammatory phase

- After injury occurs, the initial response is inflammation as first attempts to isolate and start repair maneuvers.
- The inflammatory phase reaction immediately activates a sequence of processes that includes directing specialized cells to protect the area.

Proliferate phase

- In the proliferation stage, the body rapidly releases several kinds of cells that migrate towards the involved area for the focus of rebuilding.
- Macrophages are one type of cell whose purpose is removal of damaged fibers and any other unwanted particles for clearing ground to begin reconstruction.

Remodeling phase

- The remodeling phase focuses on tissue repair by activating cells called fibroblasts to migrate for laying down new structural frameworks of collagen fibers.
- Tissue repair problems arise when fibers form irregular patterns binding down as adhesions, making the area less pliable for motion due to abnormal inelasticity.

Therapeutic Scraping Induced Microtrauma Inflammation

As a physical medicine apparatus, therapeutic scraping utilizes a hand tool to provide mechanical stimulus capable of triggering a controlled inflammatory response. The induced microtrauma sets off inflammatory markers, of which most important to scraping treatment are activation of macrophages that debris existing irregular fibrotic patterns, leading to fibroblasts increasing new fiber alignment activity. With better clearing and properly aligning of fibers, less compression of nociceptor nerves would be reacted, contributing to relief throughout healing stages.

Since fibrosis begins at the outset of inflammation, it would make sense to utilize scraping stimulus as soon as possible after injury, as supportive means to inflammation regeneration processes. Additionally, in cases of chronic pain presented by soft tissue restriction, the same role is applicable in using the scraping tool to restart the inflammatory process that has been stuck in cycle and thereby promote sufficient macrophage breakdown and fibroblast remodeling.

The benefits of this would be in providing a timely direct response and avoiding getting caught up in the cycle of soft tissue dysfunction by minimizing faulty fiber patterns causing stiffness, imbalances, and ongoing movement discrepancies. With the inflammation cycle taking place at an optimal level, individuals will have more satisfactory experiences achieving greater outcomes, such as ROM, strength, and functional activity. Realizing that inducing controlled inflammation treatment reduces fibrosis highlights exclusive advantages that most other therapy methods cannot replicate in the same way or time as therapeutic scraping.

Multimodal Model - Principles of Myofascia Remodeling

Intrusion from overused muscles, unexpected injuries, postural tightness, surgeries, and sedentariness, all have a contribution towards formation of soft tissue restrictions. When these issues are present, the movement system comprising fascia, muscles, tendons, joints, and ligaments stiffen. And along with this, localized pain receptors become triggered. This is perceived by the inflicted individual as symptoms along a spectrum from tightness to general soreness, elevating to higher levels of sharp-stabbing or throbbing pains when aggravating the body part.

Therapeutic scraping entails manipulative movements in varying forces, directions, and depths directed at myofascia restrictions. Fascia is a widely used bodily term applied as a description for soft collagenous connective tissue, dividing into distinct sections of membranous tissue systems (2). It is generally understood by providers involved in musculoskeletal care that restrictions to fascial mobility results in abnormal tension that alters movement mechanics. These changes develop into painful inflammation issues from dysfunctional muscle, tendon, and fascia involvement.

The assessment process for fascia normalcy is characterized by personalized examination using hands-on palpation to detect and release areas of fascial resistance surrounding the focal painful region. Soft tissue manipulations are commonly pursued by means of hands, rollers, massage tools, suction cups, and scraping tools, for releasing fibrosis to gain flexibility and joint ROM. Fascia treatment is also assisted with corrective mobilizing stretches and exercises. This carries over to developing greater functional strength, providing pain relief, and increasing activity participation.

In order to fully integrate therapeutic scraping into theoretical practice, there is a need to explain processes at soft tissue's cellular level. By understanding forces that effect physiology, it is more conceivable to manipulate proper tissue design over structurally defective fibrotic fragments. The adaptive ability of musculoskeletal tissue is established in the sense of providing specific stimulus that leads to microscopic modifications for physical development and functional capacity of bodily systems.

The fields of physical therapy, massage, orthopedics, chiropractic, acupuncture, and sports medicine, all have a unifying concern for understanding and dealing with fascia. While each discipline spends intense amounts of time learning anatomy, the role in which fascia influences the entire movement system and comes to play in injury and pain is not necessarily emphasized. In order to support the theoretical basis of multimodal mechanisms underlying therapeutic scraping, the following section reviews fascial design and functional roles in transfer of forces between myofascia connections.

Myofascia Design and Function

Fascia has a unique appearance and texture, ranging from transparent woven sheets to a hazy cotton-like formation (24). In effect, fascia is generally accepted to have no beginning and no end; it is continuously linking from segment to segment throughout the body. Because of its role in soft tissue pain and injury, it is necessary to explain details of fascia in order to derive useful application of therapeutic scraping and myofascial release. Envisioning fascia also increases practical skills during examination and treatment encounters.

Fascia is a soft tissue component situated all over the body, forming a continuous matrix of structural support (17). It is a prominent soft tissue structure, having multitudes of fibrous three-dimensional extensions that encapsulates joints, organs, muscular septa, ligaments, retinacula, aponeuroses, tendons, myofascia, neurofascia, and other fibrous collagenous tissues (31, 55).

Fascia is pictured as an internal membranous system of layered fibers with different thickness and orientations. The superficial fascia layer is made of loosely arranged interwoven collagen fibers that are interspersed with elastic fibers and nerve fibers (51). In each fascial layer collagen fibers run parallel, and the orientation of deeper adjacent layers changes by 70 to 80 degree angles (53). The interchanging angles create a weaving design that minimizes friction, so fascial sheets can slide over underlying layers, and also increases capacity to withstand strain (53). Fascia also contains separately sliding vessel systems integrating capillaries into compartment units (23, 31).

The all-encompassing fascial network allows proper distribution of tension at different covered structures so that the entire body is interacting together. Functionally, the fascia network is designed to allow stretch of tissues, such as skin, muscle, ligaments, and organs. Another key characteristic of fascia is adapting segmental tissue structure shape to mechanical stress corresponding to functional demands of the environment (5). In the presence of motion and load, fascia provides structural stability within organ, blood vessel, bone, nerve, and muscle-tendon compartments.

Myofascia classifies fascia specified to muscles and comprises three distinct layers: epimysium surrounding whole muscles; perimysium separating bundles of muscle fibers within the muscle; and endomysium covering individual muscle fibers. The myofascia network connects and disperses forces across muscle groups, and also provides pathways for nerves, blood vessels, and lymphatics. The fascia of muscle converges into a myotendinous junction to become fascia of the tendon having its own three layers of endotendon, peritendon, and epitendon (60).

Generally, when it comes to movement, we think of forces transferred from muscle into tendons, attaching to bone and pulling along joints. Meanwhile, traditionally fascia's role in motion is reduced to its compartmentalized function to keep everything held together. However, this classical representation of movement is not entirely accurate. Instead, a large portion of contractile forces are distributed by fascial sheets, rather than muscle-tendon points (16). Myofascia connections also carry forces laterally into connecting muscles (16).

The fascia links are basic necessities to myofascial force transmission for movement and positioning, allowing forces to transfer from within the muscles, through tendons, and into joints. Mechanical forces are coordinated and passed between adjacent muscle cells via cell-matrix interactions and the endomysium linking cells together (59). Meanwhile, the perimysium connective tissue is related to accommodating shear strains as muscles change shape during contraction (45).

At the junction between the muscle and the fascial sheet, the fascia is able to maintain a lubricating layer of hyaluronic acid, which allows sliding between the fascia and neighboring muscle (16). Developments have shown layers of hyaluronan fluid within fascia that allows sliding between layers and muscle (16). If the epimysium layer is compromised from injury or trauma, then the gliding layer is obliterated in the fibrotic area, with no hyaluronan fluid being produced (39). Restoring natural sliding mechanism in fascia is a concern for involved musculoskeletal injuries in order to create inherent contraction forces and minimize pain.

The mechanisms that govern tendon healing are integral to development of therapeutic scraping that promotes healing, particularly with ECM and collagen fiber formation. Just the same as the myofascia system, mechanical stimulus is essential for tendon development and repair by stimulating tenocytes activities for remodeling. The method for mechanical manipulations directed to the ECM translates signals to direct physiological healing responses within tendons. Therefore, scraping treatments that target particular cell healing functions and serve to avoid overly fibrotic tissue could positively impact tendon resolution during the inflammatory process.

Multimodal Model - Principles of Mechanotransduction Remodeling

The musculoskeletal system adapts to mechanical demands that causes cellular activities to occur for altering tissue structure (59). Within fascia fibroblast, cells are readily capable of remodeling when environmentally triggered by mechanical stimuli (15). These stimuli exert effects within cells through filaments of the ECM, which leads to a chain of activities that shapes structure and function of tissues (31).

Mechanotransduction is the physiological process where cells sense and respond to mechanical loads that in turn bring about structural changes (29). Micromechanical stimuli includes tension, compression, shear, and vibration (58). Fundamentally, whenever there are loads above the tissue's set point, through mechanotransduction the body structurally and functionally adapts, in order to manage reoccurring exposure to similar demands. This establishes an ongoing bodily process for adaptation, growth, and repair.

Mechanotransduction can be divided into three stages: (1) mechanocoupling that is the mechanical stimulus; (2) cell to cell communication throughout the tissue to spread the loading signal; and (3) a cellular response to the signal to produce and assemble materials (29). A detailed description of complex biochemical pathways and chemical messengers is beyond the scope of this manual and not essential to therapeutic scraping theory. However, these forces can be made use of by scraping's ability to provide mechanical stimuli that triggers cells into mechanotransduction stages.

The rehabilitative effects of mechanotransduction have been observed, in which physically manipulating fascia with a needle triggers activity of fibroblasts (33). Fibroblast activity can be modulated based on tension between the cell and the ECM, in which low environmental tension results in a resting fibroblast state with low collagen production, and high stimulus activates fibroblasts to produce collagen (16).

External forces exerted towards cells and ECM is substantial because it characterizes utility acting from the micro into the macro scale of bodily soft tissue. Realizing the relationship between mechanical stimulus and cellular responses within soft tissue, provides rationale basis of mobilization techniques, such as therapeutic scraping for causing similar force activating processes.

Therapeutic Scraping's Rationale in Soft Tissue Remodeling

Fibrotic soft tissue is palpated by hands-on examination and is verifiably detected as abnormal rigid, knotted up masses. Tissue stiffness is based on soft tissue normally having translation when externally compressed, compared to hard tissue that does not (42). Restricted soft tissue is one and the same with trigger points, knots, tight bands, adhesions, scar tissue, and fibrosis. Oftentimes restrictions are experienced as tight and painful body areas, which is commonly present in most cases of musculoskeletal injury, whether isolated to one area or scattered around linked regions. Describing mechanisms of remodeling allows insight into pain relief and recovery provided by therapeutic scraping.

Firstly, a major beneficial objective of scraping is to intentionally cause inflammation for the purpose of using the body's own mechanisms to remove fibrotic tissue and produce new healthy fibers. In matters of injury, soft tissue tends to heal better when fibrosis is minimized by controlling the formation of restrictive fibers by therapeutic processes of removal and restoration. If not, then during the process of healing the tissue becomes painfully irregular and restrictive.

The forces from scraping directed on soft tissue restrictions induces inflammation to stimulate healing by directing collagen production, showing better fiber designs and less fibrosis than without treatment (14, 28, 40). In matters of acute, repetitive, and chronic soft tissue injuries involving muscles, tendons, and ligaments, the normal healing process of bodily tissue is disrupted by alterations in fiber development. The abnormal directional fiber arrangement reduces extensibility and strength, resulting in thickening and increased inter-fiber bonding. The adhesive fibers then lose sliding capacity relative to each other and mobility is lost throughout connected structures.

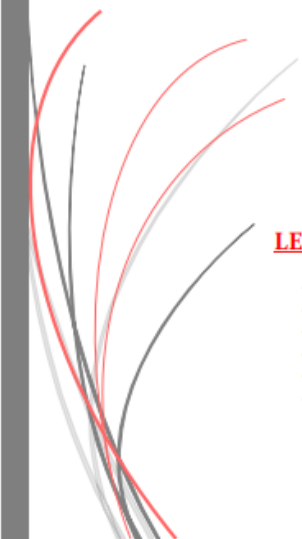
Initial reports of remodeling effects supplied by induced trauma were pioneered by manually disrupting tendons and subsequently using imaging to analyze increased fibroblast activity (14). This was followed up by research showing increased fibroblast production in direct proportion to the magnitude of pressure provided (19). In another study viewing effects of scraping therapy, injured tendon fibers had irregular restricted collagen orientations, while fibers treated with scraping appeared with no irregularity, concluding scraping therapy promotes better recovery (27).

Delving into the micro level, soft tissue mobilizations with tools unquestionably works like a lock and key, opening beneficial repairs to cellular structure. Structural changes in tendons and ligaments have been shown to respond to mechanical stress, in which tissue structure and molecular composition of ECM are influenced by local mechanical forces (?). This feature highlights the scientific basis driving the indication for therapeutic scraping utilization down to the cellular level to bring about a micro to macro structural response to promote healing of soft tissue components.

Soft tissue injuries produce ECM changes that derives fibrosis from collagen, creating stiffness (6). At the cellular level, issues of deficient, or absent, elastin fibers in the ECM contribute to disorders (43). This occurs when the ECM is effected by restrictive fibers between microscopic filaments (30). At the micro level as elastic capabilities are hindered, the macro level rehabilitative process is delayed, and all together soft tissue becomes increasingly constrained.

Mechanotransduction is an important principle to make use of for management of fibers projected from the ECM. Since scraping tools are capable of directing soft tissue displacement with sheer

Relevant Outcomes in Therapeutic Scraping



LEARNING OBJECTIVES

- ✓ Distinguish features of IASTM and gua sha in outcomes research.
- ✓ Explain clinical relevance in evidence-based practice outcomes.
- ✓ Review collections of research describing effects of scraping.
- ✓ Interpret positive changes associated with IASTM and gua sha.
- ✓ Defend scraping marks based on gua sha outcome studies.
- ✓ Compare IASTM's and gua sha's unified objectives.

OVERVIEW OF OUTCOMES IN THERAPEUTIC SCRAPING

Clinical relevance deals with the actual ability of a treatment to fulfill its claim in being able to help a person return to a more normal state of being, as opposed to dealing with an ongoing bodily condition. Taken one step further, it also includes the relative amount of time it takes to achieve intended effects. Research looking into outcomes are used to describe changes that occur, and whether or not they are significant enough to validate claims as a treatment option. As a result of its exclusive innerworkings, what can be expected from therapeutic scraping are outcome measures pointing to a direct response for achieving meaningful progress in commonly pursued rehab goals.

Understanding the specialized uses of scraping therapy in clinical settings is unfortunately misunderstood. When looking at the volume of existing IASTM, gua sha, and specific brand representatives involved in promoting scraping therapy for musculoskeletal injuries, there is little congruence as to descriptions of mechanisms, presentations of similar outcomes, and applications for utilization. In fact providers of IASTM typically hold out gua sha as a separate kind of treatment rationale and approach. Meanwhile, scraping brands set themselves apart by claiming proprietorship in scraping tool designs, usages, and parameters. At the heart of the matter they are all nearly identical.

For those unaware, this is a matter of concern towards upcoming providers, other involved medical or fitness professionals, as well as the general public, because there is considerable ambiguity around the unfamiliar therapy option. In addition to existing confusions, resides uncertainty for acceptance of features of scraping therapy involving petechiae therapeutic scraping marks. Meanwhile, other techniques, like cupping therapy, are becoming increasingly more familiar to providers, which bring along observable circular bruise like markings that are deemed safe and therapeutic.

This section of the manual settles misconceptions around scraping therapy, by delivering an analysis of effects presented in clinical outcomes studies, which are then injected into guidelines for multiple utilization objectives. In addition, comparisons between IASTM and gua sha research will be made for designating benefits of therapeutic skin markings. From combined efforts of Chapter 2 rationale and Chapter 3 outcomes, the complete perspective of mechanisms, resulting effects, and utilization applications, are fundamentally derived for presenting a unified therapeutic scraping theory.

The clinical need for presenting therapeutic scraping outcomes is based in delivering a standardized physical medicine having genuine impact on measurable effects, translating to improving daily life for recipients of treatment. The historical record merging with current studies provides evidence-based research for a beneficial way to legitimately satisfy criterion of rehab goals. It also points to scraping being an overall better option when compared to other conventionally used treatments within studies, encouraging dismissal of efforts that do not attain the same outcomes.

To present the clinical relevance of scraping therapy, focus is placed on main objectives pursued in treatment goals for soft tissue injuries: (1) reduce pain, (2) improve range of motion and strength, and (3) increase functional performance. The research on scraping therapy presented is an assortment of IASTM and gua sha studies, validating the effective outcomes on pain relief, structural restoration, and functional activity. In addition, the compiled studies are arranged to show a spectrum of specific types of injuries and uses for scraping therapy throughout the body, e.g., back, neck, arms, and legs.

The aim for displaying this material is for the provider to: (1) be assured in capabilities for obtaining relevant clinical outcomes; (2) be aware of multiple uses for using scraping therapy; and (3) recognize similarities existing between IASTM and gua sha scraping therapy treatment rationale, outcome effects, and applications.

By understanding these factors, scraping therapy can be more accessible to achieve similar positive effects. With clinical relevance in view and evidence based practice established, a firm declaration is grounded for suggesting unified methods and guidelines to scraping therapy providers. This would ultimately serve an order to maximize quality service, allowing individuals to benefit from receiving therapeutic scraping's exclusive care.

Culture and Brand Terms in Outcomes Research

Before presenting the outcomes based research review, an explanation is required to support its composition. There is an abundant source of published research looking specifically at the results of scraping therapy, which is different from studies supplying scientific rationale of mechanisms taking place. The previously presented rationale section of this manual described various overlapping treatment principles happening between Western IASTM and Eastern gua sha scraping. In addition, thereby in association any particular brand's technique or tools claiming novelty in its approach is actually accountable to the same physiological mechanisms as any other.

Therefore, for simplicity's sake the upcoming review uses the "IASTM" term to reference all research based on Western scraping, e.g., IASTM, AYSTM, Graston, etc. At the same time, for purposes of distinguishing cultural perspective, "gua sha" is the term used for describing studies coming from the Eastern scraping view. Highlighting the similarities between IASTM and gua sha scraping practice is useful for realizing how they similarly account for treating pain arising in bodily soft tissue, and furthermore lends support to therapeutic scraping marks as a harmless and essential factor.

Gua sha applies a comprehensive medical approach using scraping therapy to address systemic bodily ailments, in addition to musculoskeletal injuries. Gua sha involves using tools to scrape or rub the surface of the body to relieve blood stagnation and is used for pain relief (23). It primarily focuses on a mechanism for microcirculation as an agent of detoxification, along with immune factors. In comparison, Western IASTM techniques and brands are focused on bodily pain and movement impairments and does not include systemic issues. IASTM's mechanisms also describe microcirculation characteristics but are more so centered on principles of remodeling by mechanotransduction stimulation of fibroblasts in soft tissue structures.

The divergence on use of petechia, in which IASTM proponents are opposed, while gua sha absolutely embraces scraping marks as vital to the treatment's relevance is a controversial issue. It can be appreciated that IASTM proponents avoid petechiae for caution in not causing harm, based in bioethics principle of nonmaleficence. Paradoxically, they are inaccurate, and therapeutic scraping marks are in line with beneficence, or good results, as shown in gua sha outcomes research. This matter raises concern in principle of justice for distribution of treatment and getting better in best possible time.

It is notable that gua sha studies report reduced chronic pain in one session, while IASTM findings do so after 4 to 6 weeks. Based on the extended treatment duration, it should be stated that scraping not completed with inclusion of scraping marks, does not gain full use of mechanisms exclusive to the treatment, and so it takes longer to get results. This contrast is drawn out because of interests in clinical relevance between the two cultural scraping forms. If treatment outcomes are the objective being pursued, and research shows both IASTM and gua sha perform, then between adherence to scraping marks or avoidance, whichever gets results most effectively is an issue to face.

Addressing misunderstandings that scraping marks are harmful, or a disadvantage to making progress, is important to come to terms with for utilizing the full capacity of scraping therapy. In actuality, there are no records claiming harm from petechiae after scraping therapy. And other accepted treatments that cause petechiae marks are in use. Cupping therapy is a treatment that gained spotlight in Western eyes during the 2016 Olympic Games, in which U.S.A. swim team athletes competed with petechiae marks on their backs and shoulders (30).

Since then, cupping gained trends for treating soft tissue within Western society. This creates a curious contradiction in Western soft tissue treatment, since many IASTM followers approve of using cupping, while at the same time stay clear of petechiae in scraping therapy. Even though cupping treatment inherently delivers petechiae markings, nevertheless, they mention avoiding bruising from scraping. And yet, both cupping and gua sha scraping are based in the same principles of microcirculation, tissue perfusion, and detoxification, which IASTM historically later branched from.

Clinical Relevance in Evidence-Based Practice

Clinical relevance is a term used side-by-side with evidence-based practice (EBP) for affirming that what a provider is treating with actually works. EBP has become a standard, in which providers should continuously be considering if their treatments are delivering best quality options and outcomes as demonstrated by the proof of research. As part of deriving sensibility for what may be significant, considerable emphasis is placed on reporting specific measures, rather than relying on opinions or pre-existing approaches. This translates to guiding validated decision making in treatments.

The purpose of the following research review is to concisely communicate current improvements in describing specific treatment outcomes from scraping therapy. Overall, the collection of studies summarizes the existing volume of knowledge that supports therapeutic scraping as a physical medicine capable of delivering goals in pain relief, injury recovery, ROM improvements, and return to function. The report on these references matched with the research rationale in mechanisms, synthesizes these materials into a coherent presentation aimed at supporting evidence for inclusion of therapeutic scraping as a specialized discipline for physical rehabilitation within medicine.

The scraping therapy provider can rely on using the research review as a solid foundation for legitimate practice. Not only can they gain a boost of confidence for delivering services, but if challenged by hierarchies or clinical situations they can bring forth these types of studies for validating appropriateness of treatment effects. Simplifying and pointing out this material can lead to clearing up

confusions, misconceptions, and misuses that are not in line with the evidence of genuine treatment principles for scraping therapy, while ensuring greater merit for services.

The following is a review of research citing evidence for positive scraping therapy outcomes. To present the practical clinical relevance of scraping therapy, focus is placed on main objectives pursued in treatment goals for soft tissue injuries: (1) reduce pain, (2) improve range of motion and strength, (3) increase functional performance. The studies presented below are a collection of IASTM and gua sha studies validating the effective outcomes on pain relief, motion restoration, and functional measures.

In keeping with trends throughout this manual, gua sha should be taken to mean scraping with petechiae markings, while IASTM is without. Thus, lending merit to therapeutic scraping marks inclusion based on reviewing published reports. Collectively, the research demonstrates various body areas, different tissue types, and pain classifications in order to establish therapeutic scraping utilization throughout the musculoskeletal system for a variety of conditions.

Therapeutic Scraping Research Review

Chronic Neck and Back Pain Relief with Gua Sha

- 40 chronic neck and back pain subjects divided into a gua sha group and control group of no treatment, reported reduction in pain and improved health status from one session of treatment (21).
- 25 chronic low back pain patients having decreased pain within gua sha in 2 treatments (32).
- 24 chronic neck and thoracic pain patients treated once with gua sha, having less pain, increased ROM, and increased functional status within one week, compared to group receiving heat therapy (5).
- 11 back pain subjects having immediate decreased pain with one gua sha treatment (29).

Chronic Neck and Back Pain Relief with IASTM

- 29 subjects in randomized control study all presenting with trigger points and treated with IASTM in a series of 6 treatments over three weeks, having successfully decreased pain (13).
- 15 chronic low back pain subjects having better ROM and reduced pain in 4 weeks from IASTM (24).
- 1 case report in lumbar fascial layers treated with IASTM resolved low back pain in 6 visits (14).
- 1 case report of anterior chest pain costochondritis and mid thoracic stiffness reduced with treatment plan including IASTM (1).

Upper Extremities Treated with IASTM

- 57 chronic lateral elbow tendinopathy subjects having less pain, improving grip strength, and better function, compared to an exercise group, which was maintained at 6 and 12 month follow-ups (36).
- 1 case report of IASTM relieving trigger thumb, flexor pollicis tendinopathy disability (17).
- 1 case report of shoulder impingement associated with sub-acromial pain syndrome, receiving 3 IASTM treatments showing improved shoulder flexion ROM, decreased pain, and increased function (11).

Lower Extremities Treated with IASTM

- 13 athletes with chronic ankle sprain ligament injuries, showing improved pain, ankle ROM, and dynamic postural control effects after using IASTM (34).
- 10 patients with patellar tendinopathy of the knee treated using IASTM all having resolution of pain and better functional outcome scores (37).
- 7 Achilles tendinopathy subjects receiving IASTM, with more successful outcomes than an exercise only group of 8 subjects at 12 weeks and continuing through follow-ups at 26 and 52 weeks (27).
- 3 long distance runners with hamstring tendinopathy pain resolved from IASTM treatment plan (38).
- 1 case report of tibialis posterior strain (shin splints) in a triathlete, having reduced pain after and return to activity after 7 IASTM treatments (16).

Greater Strength and Functional Performance from IASTM

- 40 young basketball players divided into even groups, with 20 receiving IASTM showing better scores in functional fitness (side-step and vertical hop), isokinetic torque strength, and ankle ROM (31).
- 20 athletes treated with IASTM, showing positive changes on muscle power of ankle dorsiflexion/plantarflexion and knee extension/flexion, along with less muscle fatigue, and greater physical fitness than control groups, suggesting performance enhancement (20).
- 20 subject's quadriceps strength and knee ROM increased when treated with IASTM (19).
- 15 patients with muscle weakness reporting greater measurable force in squat immediately after one IASTM session on lower extremities, indicating effect on strength and functional capacity (18).

Increased Joint ROM and Muscle Flexibility with IASTM

- Group of 23 subjects split into IASTM and control groups showing improved ankle dorsiflexion ROM over 6 treatment sessions in 3 weeks (6).
- 17 athletes receiving IASTM all having improved shoulder internal rotation ROM (22).
- 10 athletes treated for tightness in quadriceps and hamstrings having immediate greater gains in flexibility with IASTM, compared to 10 athletes in a foam roller group, lasting 24 hours later (26).
- 5 college students with IT band syndrome all having reduction in pain, increased IT Band flexibility, and improved muscle function after 2 IASTM treatments (15).
- 3 athletes with posterior leg pain and limited hamstring flexibility, each having resolved pain, restored AROM, and improved function that was sustained the remainder of the competitive season (2).

Faster Healing Time with IASTM

- Knee MCL injuries healed faster with IASTM compared to animal groups not receiving treatment, with ligaments 43% stronger, 39% stiffer, and 57% more capable of absorbing force after 4 weeks (25).
- 1 case report of Achilles tendinopathy fully and rapidly recovered with IASTM, compared to a review of standard 12 week conservative treatment protocol (28).

Post-Operative Care with IASTM

- Systematic review of post-operative total knee replacement surgery and related soft tissue fibrosis treated with IASTM, showing significantly better knee ROM, functional scores, and pain relief (10).
- Post-operative patellar tendon repair surgery with arthrofibrosis and quadriceps weakness, showing better knee ROM, quadriceps strength, and function after 5 IASTM treatments (4).

Image Studies with IASTM

- 10 subjects receiving IASTM treatments to quadriceps and hamstrings twice a week for 3 weeks, showing increased knee ROM consistent with ultrasound measuring of fascial displacement (33).
- 1 case report under ultrasound examination of rectus femoris muscle tear, showing image of reduced tear size around the tissue and improved tissue continuity between pre and post IASTM (12).

Analysis of Scraping Therapy Clinical Outcomes

The main aim of presenting a scraping therapy research review is to determine whether meaningful changes occur in objective measurements of musculoskeletal properties that influence pain, injury status, and performance. The treatment's outcomes are represented by two distinct bodies of practice, gua sha and IASTM. In both cultural scopes of practice the success in finding positive changes are evident. The approach to viewing Eastern and Western scraping simultaneously allows appreciation of outcomes in soft tissue injuries, and physical activity in general, while overall helping to depict a unified theory existing between the two.

Research presented by gua sha, signifying scraping with intent on therapeutic scraping marks, is positive for treating neck and back pain, having outcomes based in pain scale, improving range of motion, and increasing functional capacity. In addition, gua sha studies consistently report on chronic pain reduction within a shorter duration of one to two sessions compared to IASTM. However, gua sha is not well embodied in investigating other soft tissue injuries, for example tendinopathy, ligament sprains, etc. Nonetheless, based in treating along the neck and back, it is a fair guideline for providers to make use of scraping with scraping marks at other painful soft tissue regions when indicated for pain relief.

IASTM is well represented for the same positive clinical outcomes represented in gua sha studies, i.e., pain scale, ROM, and functional capacity. However, IASTM studies are more inclusive to exploring wider applicability to different types of injuries throughout the musculoskeletal system. In addition, IASTM studies reach outside of pain and injury, reporting on performance enhancement and physical fitness when used on individuals having no pathology issues prior to activity participation. IASTM also includes research that addresses healing time of soft tissue, in which compared to not receiving scraping therapy, the mechanisms support accelerated recovery.

With regards to chronic pain IASTM alleviates neck and back muscles, but reports a lengthier treatment duration, for instance 5 visits, or 4-6 weeks of treatment. Meanwhile, all gua sha studies report pain reduction in a much shorter period of time. In interest of the most effective outcome, gua sha is the greater achiever for chronic pain reduction in less treatment sessions than IASTM. But this remains to be tested in clinical research by any single study investigating scraping with petechiae marks directly against scraping treatment without.

However, comparison studies have pitted scraping against other common therapies. In one particular case study of chronic neck pain, a patient received 2 weeks of conventional physical therapy with minimal improvements in symptoms, then received 2 treatments of gua sha and had significant improvements in Neck Disability Index, AROM, and pain scale reduction (3). This lends to supporting pro-resolution pathways provide by scraping treatment prior to other less useful options.

An additional intention for presenting a research review combining both IASTM and gua sha studies is to help clear up misconceptions about scraping and supposed bruises that may be harmful to the recipient. In consideration of the research review between both IASTM and gua sha, it may be implicated per requirements of maintaining ethical research that both scopes of scraping deliver safe application, tolerance, and benefits to populations, while abiding by indications, precautions, and

contraindications. Also, it serves to point out that gua sha studies consistently show agreement in reducing chronic pain. Safe to assume that therapeutic scraping marks are in fact reliable and effective.

Cultural differences set aside, one of the key disputes in scraping is gua sha's intent on therapeutic scraping marks, while IASTM avoids markings. Since the direct comparison between gua sha and IASTM studies on chronic neck and back pain suggest that scraping with petechiae markings provides a successful outcome in a faster amount of time, then there is clear indication for moving forward and encouraging providers of scraping therapy to consider when it may be appropriate to induce skin marks in order to better provide care. Based on the research review and analysis explanation, scraping marks in fact may be presumed to be a gold standard in treating soft tissue based chronic pain conditions.

The outcomes research review and analysis for therapeutic scraping summarizes:

- (1) Presence of commonalities in clinical outcomes for both gua sha and IASTM (pain scale, ROM, function).
- (2) Absence of major differences in categorical outcomes between the two scopes of scraping.
- (3) Support for positive effects with therapeutic scraping marks for soft tissue treatment.
- (4) Advocacy for using therapeutic scraping marks as a best practice option for chronic pain.
- (5) Credibility for IASTM speeding up healing time and producing greater structural and functional capacity.
- (6) Confirmation that gua sha and IASTM have operational continuity fitting of a unified scraping therapy practice.

Outcomes Supporting Therapeutic Scraping Marks

All levels of scraping utilization require definitive guidelines for use of therapeutic scraping marks accompanying acute, sub-acute, and chronic conditions with patients. In matters of principle, providers in conflict and critics disagreeing with scraping marks have to be informed and reduced to avoid denial of otherwise helpful care to patients, as there is no harm, and only evidence supporting benefits as a form of scraping therapy practice (5, 8, 9, 21, 29, 39). The research review presenting gua sha treatment having petechiae as part of the scraping methodology consistently demonstrated positive effects related to the same objectives as IASTM centering on pain relief, range of motion, and functional outcome measures.

However, currently IASTM proponents declare:

"Clinically, petechiae can be considered a precaution or a contraindication which may occur with treatment," and, "professionals and educators are moving away from petechiae because of iatrogenic tissue damage caused by scraping treatment (?)."

Let it be clearly stated that "tissue damage" and "iatrogenic," which implies harm done by a medical exam or treatment, is verifiably not occurring as gua sha studies clearly point to successful clinical outcomes. Indisputably, scraping studies that included petechiae demonstrated no harm that would be suggestive of an increase of pain, nor a loss of function equating to negligence, or any kind of

unnecessary tissue damage. Some of these gua sha benefits seemed to outdo IASTM without petechiae, as discussed comparing chronic pain studies, indicating faster healing responses with scraping marks present as a feature.

IASTM review sources also cite that, "professionals may consider gua sha approach a form of IASTM, but the treatment rationale, goals, and application differs from IASTM approaches (?)." However, after detailing the scientific mechanisms, then viewing studies showing comparable outcomes being measured between the two scopes of scraping, there are near identical factors between IASTM and gua sha: (1) rationale, (2) objective effects to achieve, and (3) usage of scraping tools to deliver mechanical stimulus.

Comparison of IASTM and Gua Sha Summary

	IASTM	Gua Sha
Category	Contemporary Western Medicine	Traditional Eastern Medicine
Rationale	Fibroblast remodeling	Microcirculation perfusion
Palpation	Palpation for soft tissue restrictions	Palpation for tissue blockages
Examination	Localized bodily pain Movement impairments	Localized bodily pain Movement impairments Systemic illness
Indication	Musculoskeletal injuries Performance activity & fitness	Musculoskeletal injuries Systemic pathology, health & wellness
Precautions & Contraindications	Comparable	Comparable
Technique	Scraping with edge of tool at site of restriction	Scraping with edge of tool at site of blockage
Duration	Applied in time sets or until point of tactile feedback of restriction release	Applied at each blockage site until visual display of petechiae
Tools	Brand made hand-held rigid instruments with narrow edges	Generic made, hand-held rigid instruments with narrow edges
Scraping marks	Generally opposed	Consistently approved
Research Outcomes	Pain relief, ROM, Functional ADLs	Pain relief, ROM, Functional ADLs

Based on many points of critique on the existing situation around increasing confusion over petechiae, the need for convincing clarification is advocated as a meaningful step to generating a unified theory for scraping therapy. This is important to continue pointing out due to the lack of clarity between market brands, Western IASTM clinicians, and gua sha practitioners involved in scraping practices. Especially since leading IASTM published research is not entirely accurate with regards to separating itself from gua sha when it comes to musculoskeletal soft tissue injury utilization.

IASTM sources also mention, "despite instrument and protocol variability, all of these techniques and companies fall under the IASTM umbrella and refer to the same studies that facilitates the healing

process through increased fibroblast proliferation, increased collagen synthesis, maturation, and fiber alignment (35).” While IASTM research includes microcirculation rationale, but seems to favor fiber remodeling through mechanotransduction, at the same time the gua sha sector symbolizes tissue perfusion mechanisms. In actuality, it is fair to point out that both microcirculation and mechanotransduction are happening to varying degrees simultaneously.

With all brands and worldly scopes of scraping essentially accounting for the same mechanisms, guidelines need to be clearly disseminated so that people entering the field, and the public in general, can easily locate and follow usage recommendations, while gaining full advantage of the beneficial features provided. Following trends recognizing petechiae in cupping therapy, scraping marks should similarly be clinically accessible for use in certain aspects of pain relief and injury treatment that may be considered safe. Like all interventions, complications are mitigated by providers’ discretion following treatment indications, contraindications, and precautions, along with overseeing individualized tissue sensitivity, tolerance, and particular characteristics of treatment recipients.

At face value, the difference in treating someone for weeks at a time for musculoskeletal injury, versus being able to do so in fewer sessions is enormously impactful towards time and resource management, healthcare dollars, the satisfaction of the provider, and the wellness of the individual dealing with pain and disability. As of yet, there has been no published cases, or viewable discussions reiterating actual harmful outcomes taking place from scraping therapy with therapeutic scraping marks. To support a unified agreement, and in best interest of safety, diverse points between entities should be addressed, in which opportunities to present rationale logic against skin markings may be represented that is not merely based in speculation of petechiae appearing abusive or harmful to bodily status.

Compounding Therapeutic Scraping Outcomes



Chapter 3 References

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Clinical Utilization of Therapeutic Scraping

LEARNING OBJECTIVES

- ✓ Develop awareness for multiple scraping treatment applications.
- ✓ Link outcomes research with objectives of scraping utilization.
- ✓ Describe how scraping indirectly increases muscle grade strength.
- ✓ Appreciate ancient athletes strigil usage for managing DOMS.
- ✓ Compare IASTM and gua sha effects in chronic pain resolution.
- ✓ Establish scraping marks inclusion as best practice for chronic pain.
- ✓ Present treatment indication based on tissue tear status.
- ✓ Clarify heat and cold purposes in chronic and acute injury care.

INTRODUCTION TO THERAPEUTIC SCRAPING UTILIZATION

Remodeling soft tissue represents one of the most important areas of physical rehabilitation. With clear outcome effects identified in Chapter 3, common utilization guidelines can reliably be brought forth based in objectives shared by providers routinely involved in treating pain and recovering injuries. The clinical utilization phase of therapeutic scraping is the derivative from principle mechanisms and relevant outcomes being put into working action as treatment practices within pain and injury care.

Clinical utilization for therapeutic scraping involves widespread endorsement for recognizing the intervention as a standard practice on behalf of influencing treatment benefits within general medical, sports medicine, and health-wellness fields. Several generalized and special populations have conditions that can be resolved through scraping therapy. For some recipients the time to achieve resolution could be tremendously reduced if substituted in place of other conventional treatments that take longer or are not effective.

For example, from Chapter 3's research review it is verified that scraping with the inclusion of petechiae marks consistently reports reduction of neck pain within one to two treatments. However, generally in cases of chronic neck pain it is most common for therapy clinics to initiate services by focusing on an exercise approach that is based solely in neck stretches and postural strengthening exercises. This sort of routine is usually carried out under a frequency/duration prescription involving attending clinic visits twice per week for 4 to 6 weeks, and the inclusion of a home exercise program to be performed daily over the course of the treatment episode.

This typical scenario involves 8 to 12 visits, of which at conclusion often the issue may not be resolved yet, in which the prescription gets updated to continue therapy until reaching discharge goals. At minimum the most common discharge goals are based on reduction of numeric pain scale values to within 0-2/10; normalization of ROM and muscle strength measurements; and a suitable score recorded from functional outcome disability surveys. In some cases, even if the individual has not reached pain resolution, it is possible to not get an updated prescription for a variety of reasons, such as limitations in third-party insurance benefits, reports of zero progress being made, or self-discharge that is when the individual stops appearing to appointments, possibly because they feel treatment is not working.

The volume of sessions, costs of treatment, time spent in discomfort, and effort to attend therapy appointments, obviously would be substantially reduced in the hands of trained scraping providers who could potentially resolve chronic cases in shorter durations, e.g., one or two sessions. From this comparison it is clear that overall greater impact delivering pain relief and injury care can be achieved by revealing accurate guidelines for integrating therapeutic scraping approaches.

According to the research review of outcomes, scraping therapy is an applicable modality of choice specifically for: (1) reducing pain, (2) increasing ROM, (3) improving strength, (4) minimizing functional disability, and (5) accelerating the healing time response. In addition, research suggests that when compared to other commonly used interventions, e.g., exercise, foam rolling, heat, etc., that the prevailing beneficial choice is scraping therapy. Based on the elaborate mix of multiple mechanisms and measurable outcome effects, as a treatment approach scraping is among the best available sources of care suited towards soft tissue conditions.

Therefore, the core commitments represented in the therapeutic scraping model are derived from distinct features, consisting of: (1) pain relief, (2) injury recovery, and (3) return to activity (ROM, strength, function, etc.). Translating these key utilization objectives, supported by rationale mechanisms and specific outcomes, creates a trifecta centering therapeutic scraping into evidence-based practice. Bringing awareness of these effects together with competent application techniques and practice guidelines, allows providers interested in therapeutic scraping to heighten clinical decisions and safe delivery of exemplary services.

The following describes utilization of scraping therapy in applications with different types of pain, muscles, tendons, and ligaments based on criteria from previously presented outcome studies and rationale for underlying mechanisms. Just as any other intervention, not all factors can be accounted for between healing and patient profiles. So, guidelines are subject to variation per tissue presentation and characteristics of each individual at the time of encounter. Forthcoming chapters covering ethical dilemmas, as well as methods of application, will continue to reveal other pertinent information, such as contraindications and precautions, which must be considered on top of clinical utilization guidelines to drive decision making and estimating a beneficial prognosis.

Utilization for Joint ROM and Muscle Flexibility

It is commonly understood that adequate ROM within joints is a requirement to produce functional movements in ADLs, work duties, and sports play. Individuals with inflexible joints are five times more at risk for injury than those with average flexibility defined by ROM (13). In all sorts of people, athletes, and exercise participants, ideal ROM is needed to avoid injury so that proper movement techniques are being performed. Also, to achieve full force and strength, ROM is needed to store elastic energy in connective tissues surrounding the joint, and for transmitting force through muscles and tendons.

The research review indicates numerous studies showing direct effects from scraping on increasing ROM. Because injuries are often related to poor elasticity, it is important for providers to have a strong intervention that can help restore and maintain ROM. Therapeutic scraping can specifically treat ROM and flexibility deficits as an essential need of any athlete's or performer's routine. During patient/client care, to achieve ROM and flexibility objectives, additional passive stretches, joint mobilizations, and other appropriate myofascial release techniques should be immediately applied by the provider after scraping therapy. In addition, corrective stretches should be presented to the recipient within therapeutic exercise and home programs to facilitate progress and maintain gains.

Dependent on the number of involved factors, the injury status, and the skill set of the provider it is possible to achieve large gains in joint ROM with each scraping session application. The provider should be proficient in taking before and after ROM measurements, e.g., goniometer, and referencing standard norms for determining therapeutic effectiveness. In some cases multiple treatments are to be expected for fulfilling ROM goals, however small gains should be achievable and recorded at each treatment for progressing towards plan of care goals.

Muscle flexibility can also be directly increased using the same sequence of scraping followed by stretching, along with use of other manual techniques, and therapeutic exercises to promote lengthening. Treatment effectiveness should be assessed and recorded based on standard goniometer values, in addition to special tests focused on muscle length measuring, e.g., Ober's IT band test. Functional movement screens, such as shoulder mobility reaching observations, can also be used to inspect muscle length and provide baselines for post treatment comparisons (12).

Utilization for Strength and Functional Performance

The association between pain and decreased muscle strength should be of interest to providers and has been generally viewed in research. In conditions of musculoskeletal pain, the ability to rapidly activate painful agonists and synergistic muscles is compromised (2). Thus, muscle pain is associated with decreased force capacity and maximal strength performance during activities (2). Also, in presence of painful tight muscles, resulting opposing reciprocal inhibition may be cause of weakness to antagonists.

Occasionally, intrinsic restriction inhibition is the cause of specified muscle weakness when measured with manual muscle testing. In which case, after releasing soft tissue restrictions, strength can instantly improve to full 5/5, because it was not necessarily a weak muscle (nor torn), but instead an inhibited muscle from mechanical blockage. For example, an otherwise entirely fit individual can test 4/5 weakness with no pain at the shoulder supraspinatus, in which palpation reveals a soft tissue restriction in the belly situated in the suprascapular fossa. Of which, upon scraping and follow up facilitated releases, can immediately demonstrate 5/5 muscle testing in a single scraping session.

From this perspective, therapeutic scraping is indirectly facilitating strength, meaning that it is not actually developing muscle hypertrophy, or motor coordination, the same as exercise or performance training does. But by addressing the inherent motor-neural inhibition and removing the inflicting cause, muscle activation is near instantly restored. Strength can also be directly increased using a sequence of scraping followed by stretching, along with manual techniques for facilitating strength (e.g. manual resistance exercise, PNF reversal patterns), in addition to corrective exercises to stimulate muscle load adaptations.

The findings of reduced muscle activation in presence of chronic musculoskeletal pain, matched with outcomes from scraping studies, suggests there is clinical relevance for rehabilitation efforts to restore strength and carryover to functional activities. Specifically reported on are conclusions for better scores in functional fitness, greater measurable force within single tested muscles, and less muscle fatigue, indicating performance enhancement features (21, 23, 32). The results of some muscle strength scraping studies provide additional comments on simultaneous ROM improvements (22). The combined effects of strength and functional performance indicators, along with joint ROM and flexibility, places therapeutic scraping within a multi-utilitarian role, in which one modality accomplishes many tasks.

For the reason that functional performance is associated with proper force production, it is ideal for providers to be able to assess muscle weakness deficits and deliver formidable treatments and exercises to elevate fitness capacity. Therapeutic scraping can assist in strength changes and can be

integrated into any training program for the purposes of treating muscles that are testing weak in attribution to being mechanically blocked by intrinsic restriction inhibition.

Within clinical settings, in matters of intent to address muscle weakness, the provider should be aware of manual muscle testing before and after therapeutic scraping to measure strength output. For utilization of strength and performance, treatment effectiveness should be assessed and recorded based on changes in manual muscle testing values, along with observations of functional motions (e.g., squat, lunge, lift, etc.), or use of other specific activities (e.g., sports performance drills, occupational tasks, etc.).

Utilization for Tendon and Ligament Injuries

Soft tissue injuries within tendons and ligaments can result from degeneration of tissues from overuse, or from specified mechanisms of forceful injury. In most cases of degenerative tendinopathy the tissue has gone through repetitive cycles of inflammation, repair, and faulty functional use. This dysfunction results in impaired movement, pain, swelling, and weakness of the affected area. These common issues have an impact on the individual's ability to carry on with routine ADLs or participate to peak levels in physical activity, often resulting in a continuous cycle of pain.

Analysis from the research review demonstrates that scraping therapy is effective in treatment of tendon and ligament injuries. The onset of tendinopathy from damage does not necessarily remodel and repair successfully on its own, and an increase in specialized fibroblasts are essential to recovery (1). Therapeutic scraping provides mechanical stimulus activating fibroblasts, which is relevant for resolution early in the injury timeline. Taking a scraping approach for remodeling tendon and ligaments is a useful option to decrease the time it takes for healing to take place, while at the same time generating better structural design of ligaments and tendons. For example, MCLs healed faster, 43% stronger, and 57% more capable of taking force, compared to groups not getting mechanically induced microtrauma (27).

The research review supplied by IASTM lends to specific uses for tendon and ligament based injuries and having a meaningful impact on all objective criterion that a provider would be aiming to achieve in the rehab plan, i.e., reducing pain, improving ROM/flexibility, increasing strength, and impacting functional activities. In practical usage, the purposes of supplying other exercises and facilitated manual therapies in addition to scraping therapy is to supply mechanical loads that stretch fibers in directions of growth, while adapting to increasing force demands with increasing weight.

In tendon care utilization therapeutic scraping aims at harnessing physiological responses that develop structural components for repair. Even though injured soft tissue naturally undertakes healing after an injury, there are often delays, or never finishing to full resolution, due to related soft tissue restriction disruptions, poor elasticity, and blockages in tissue perfusion. The speed of healing that takes place with scraping therapy is based in mechanisms to induce microtrauma that stimulate inflammatory reactions for new collagen synthesis and tissue regeneration.

Therapeutic scraping remodeling of fatigue damaged tendons can improve natural recovery and lessen the time to correct stiffness changes from ordinary and strenuous daily loading. It has been shown in tendon studies looking into fatigue loading of tendons and structural changes that a single bout of

moderate level fatigue loading, comparable to an intense bout of exercise, leads to about 20% stiffness that is not recovered for at least 10 weeks (1). This is significant because it demonstrates how repetitive loading accumulates to changes that are characteristic of tendinopathy injuries, which routinely arise for care within clinical settings.

There are some additional considerations for utilization of scraping therapy in tendon, ligament, and muscle injuries based on suspected tissue status of tear size. And therefore, the indication for treating these injuries is based on personalized examination, and if needed imaging.

Large thickness tears will not respond to therapeutic scraping, nor any other non-operative treatment. Substantial full-thickness tears generally worsen in pain and debilitating function left unrepaired. Suspected larger tears should be imaged for the degree of detachment, in which case if larger than 1-1.5cm should be considered for surgical repair as opposed to conservative therapy (35). Smaller symptomatic full-thickness tears and partial-thickness tears less than 1 cm have been shown to have slower progression of tearing and may possibly be considered for nonoperative based treatment (35). These guidelines must be considered when examining and designating injuries for care.

Overall, these foundational insights support scraping interventions based on contributions of pro-resolution inflammatory mechanisms for tendon and ligament remodeling. Selectively managing injuries according to their status is an important aspect determining the success of therapy, in which utilization during early stage injury would be beneficial for complete resolution. In addition, chronic tendon pain may be targeted in line with principles of structural repair and thereby quickly impact relief. This serves to guide inflamed tissues into resolving degeneration and possibility for re-injury or pain.

Utilization for Muscle Soreness

Muscle soreness will touch just about everyone at some point in their lives, in which mild discomfort to high levels of pain after strenuous activity results in interference with sports play, exercises, and work duties. Muscle soreness is a kind of paradoxical enigma in that origins arise from two ends of the physical activity spectrum. On one hand, muscle soreness develops related to being sedentary and/or not being accustomed to bouts of activity, such as spending a full day hiking on trails. While on the other hand, people who routinely participate in physical activity also deal with muscle soreness as they progress loads or take on new fitness activities they have not adapted to as of yet.

Post-exercise, or physical activity soreness is generally referred to as delayed onset muscle soreness (DOMS). DOMS is a specific symptom that typically arises after strenuous or unaccustomed activity involving muscular effort (37). In addition, highly repetitive movement tasks can physically alter muscle fibers, in which hypertrophied muscle contains poor capillarization and contributes to muscle soreness (3). It is common for muscular soreness to increase over a 24 to 72 hour period after participating in activity, of which during that time physical performance, coordination, muscle strength, and abilities to absorb shock is negatively affected (31). Afterwards, the individual no longer has an active complaint of pain, but they may feel or display tightness in the muscles.

includes components like stretching, heat/ice, acupuncture, chiropractic, and massage, among a variety of others. Similar to ancient scraping by athletes in times past, this principle can still be made use of today and in the future with the use of therapeutic scraping.

Utilization for Chronic Muscle Pain

Many people experience pain that is non-specific and not related to clinically diagnosed injuries typical to mechanisms of force or trauma. A common living problem in the working environment is muscle pain, especially in high repetitive tasks, but also in compromised postures like sitting for extended periods of time. For example, most computer based and general working populations will experience neck and shoulder muscle pain (3). Chronic muscle pain reduces quality of life and has direct impact on work and social networks, which is expensive to manage without clear treatments for eliminating pain (36).

One of the most common types of chronic pain in workers is associated with tenderness in muscles, referred to as myalgia (8). The diagnostic terminology for myalgia can be more regionally specified with cervicalgia referring to the neck; thoracalgia within the middle back; and lumbago as lower back pain. In myalgia conditions, there is a strong association between perceived pain and tenderness from palpation, along with dense rigidity of muscular soft tissue restrictions, such as trigger points and taut bands.

The nature of myalgia chronic pain is characterized by active discomfort, with or without loss of function. Meaning that even though pain levels may be moderate to high in severity, there is no structural damage that would absolutely prevent certain activity participation. Instead, usually the individual is moving around and accomplishing ADL's in accordance with their tolerance level, for example, turning the head when driving with cervicalgia disrupting rotation ROM; or continuing to work with a nagging back. Pain symptoms usually worsen in response to prolonged static muscle activity (e.g., persistent sitting, wearing an equipment belt) and/or repetitive job tasks (e.g., frequent bending, carrying items, reaching with the arms, and lifting objects).

In dealing with chronic pain, tissue is not actively torn and instead is tight, restricted in mobility, and imbalanced from a perpetual injury cycle. Typically there is not a direct mechanism of injury to the active chief complaint. Simply stated, through adaptive shortening and a degree of wear and tear, the inflicted individual gradually develops the onset. However, there may be in some cases contributions attributed to an injury occurring at an earlier period in time (e.g., months to years prior), of which per examination the tissue is no longer considered to be in an acute state. As a result, fascial compression or tendon degeneration is rampant, in which there is constant bombardment of nociceptor pain signals.

Myofascial pain syndrome is a type of chronic pain caused by trigger points that is associated with muscle pain, restricted ROM/flexibility, and decreased functional abilities. Myofascial trigger points are hyperirritable, palpable nodules found along taut bands of muscle fibers, commonly in the neck and shoulder muscles, developed from repetitive microtrauma (14). Trigger point pain in the neck and back is extremely common within therapy clinics. Active trigger points are chronic in nature, without specific

mechanism, which can cause constant or intermittent pain at rest and with movement patterns. Trigger points are easily palpated by providers and are usually treated with a combination of manual therapy, massage, stretching, postural exercises, modalities, and sports taping.

Typically, therapeutic attempts provide a low degree of symptom relief, but do not necessarily change the course of the condition by failing to provide a source for exactly architecturally redesigning the involved soft tissue and thereby decompressing fascial pain fibers. Therapeutic scraping can account for chronic inflammatory pro-resolution as well as structural repair. The scraping technique can be applied for targeted forces directed towards the deep and superficial layers of fascia and muscles to detect and deactivate hyperactive trigger points. The increases in blood flow accompanying fiber remodeling promotes extensibility of the muscle and fascia to decrease pain signals and thereby provide relief. In theory, as soon as remodeling takes place and the mechanical restriction causing blockage and signaling is removed, the offense will immediately stop, thus no more chronic pain symptoms.

Chapter 3's outcomes research review shows positive results for managing chronic pain with scraping therapy from both gua sha and IASTM related studies. They mutually present benefits representing decreased pain scales, improved ROM, and greater functional survey scores specific to neck and back pain, which can be generalized towards other common muscle pain conditions, such as shoulder, hip, or calf muscle pain. In addition, treatment success can be extended towards the musculotendinous junction, in which chronic tendon related issues, i.e., tendinosis, may be alleviated.

An interesting trend arises in studies containing scraping with therapeutic scraping marks, compared to without, which suggests a best practice act for treating chronic pain in a less amount of time. A side by side comparison of IASTM and gua sha studies focusing on chronic pain demonstrates that when therapeutic skin markings in the form of petechiae occurs, the subjects report immediate decreases in pain within a single session (9, 24, 30, 33). In contrast, IASTM chronic pain studies using a different set of parameters for time based treatments, which does not include petechiae, seem to report on outcomes over an extended frequency and duration timeline, such as 2 times per week for 3 to 6 weeks (5, 17, 18, 25). Based on this, the Western IASTM claim that petechia should be avoided under premise of causing harm to tissue is disputable.

Therapeutic scraping marks are not only relevant for the role in outcome effects, but additionally the petechiae supplies immediate feedback to the provider for duration of scraping at particular body regions. The general rule of thumb for scraping with the intent on inducing scraping marks is that once the petechiae arises, the provider is assured the area is stimulated. From that precise moment, scraping seizes at that spot, and then continues at adjoining targets until observation of complete surface area flushing. So as marks appear, the provider is receiving physiological feedback for continuously moving through the objective area until complete. This feature does not occur in IASTM scraping that is within the scope of applying strokes while avoiding skin markings.

Instead IASTM proponents teach varying time based sequences while using the tool for sweeping through anatomy within a treatment zone. As such, IASTM does not seem to rely on physiological feedback for determining when to seize scraping, as is advantageously gained by scraping to the point of inducing petechiae as a sign for moving on with the tool. Therefore, what is missing overall in the IASTM approach are solid instructions for the parameters of IASTM, such as how many minutes to apply scraping strokes.

Essentially determining to seize IASTM within a session is based on suggestion of different brands, which mostly use a time based sequence, for example apply strokes in a single direction for 30 to 60 seconds, or several minutes at a time, and then pass through fibers in changing directions with the tool using the same time bits. This methodology is relatively user dependent, being that the skill set of the provider wielding the tool would come into play more so, in which one clinician's technique may or may not accomplish the same amount of physiological change in the same given time based application as another not as well trained or experienced person. In addition, using time as feedback for sweeping through and deciding when to stop scraping treatment does not account for a possible internal gateway that needs to reach a point of mechanical stimulus before accomplishing physiological manifestations.

An experienced scraping provider in favor of petechia can attest to variances in time for inducing skin markings; sometimes as little as 3 seconds, or 30 seconds; while at other times taking 3 minutes, and in stubborn cases 30 minutes. But regardless of time, once the physiological response was achieved, a positive therapeutic outcome was produced. The inclusion of petechiae therefore not only meets the rationale of microcirculation mechanisms being taken fully advantage of, but it also lends a gauge for determining successful activation of pathways, and a feedback means for transitioning, or seizing scraping application.

In plain sight, this assumption is called out to account for differences in treatment durations being reported on between IASTM and gua sha single session applications being able to resolve chronic pain. For example, no significant change was found in pain in a group of 23 subjects following one session of 10 minutes of IASTM intervention (16). Meanwhile there are at least four convincing gua sha studies specifically mentioning petechiae and chronic pain resolution in just one or two treatments (9, 24, 30, 33). Within these studies, time is not used for deciding to seize treatment, instead scraping marks are the primary indicator of resolution.

Therefore, it is suggested that in matters of treating chronic pain providers should consider modulating scraping techniques to include therapeutic scraping marks for having an immediate impact on decreasing pain scales, in addition to minimizing volume of required sessions. It is essential to realize that modulation for petechiae does not involve a need for the provider to be overly forceful with the tool.

The duration a person is dealing with chronic pain is an important consideration because fascial integrity and dysfunctional pain symptoms influences not only movement, but also emotions and fatigue. A restrictive fascial system perpetuated in everyday living can cause emotional alterations, created by constant pain signals, bringing the state of wellness and the myofascia condition to even more suffering. Chronic fatigue and pain can be related to the fascial system, especially if the disorder has been present for several years. If the fascia becomes fibrotic or if the layers of the tissues do not flow properly, bodily movements are more difficult, uncoordinated, and take more energy, which will be experienced as fatigue (?).

Another matter that is critical to address is the use of ice or heat modalities after scraping therapy when treating chronic pain. The use of external heat sources has multiple effects, including increased blood flow, greater metabolic activity, more elasticity of soft tissue, and pain relief, which is applicable in chronic pain management in the majority of cases (28). Parameters of heat application, such as type, duration, and frequency can vary, of which the provider can gravitate towards suitable options for following-up therapeutic scraping sessions. In contrast, acute pain and injury care is more suited to cold treatments to address the initial inflammatory responses.

Providers should depend on therapeutic scraping as a direct response to treating dysfunctional fascia and active trigger points that are primary sources to complaints of chronic pain. The presence of myofascial alterations leads to postural alterations that contribute to muscular and joint imbalances leading to pain symptoms, improper body mechanics, and chance for injury. In addition, treating myofascial restrictions serves to decompress the tissue to deactivate signaling from nociceptors imbedded within fascial layers, and thereby positively influencing emotional wellbeing.

Special considerations and precautions need to be made by the provider when treating other types of chronic pain that are not based on a general status of myalgia related muscle pain. These may include, fibromyalgia, rheumatoid conditions, certain neurological conditions (e.g. multiple sclerosis), neuropathy, among any other complex medical statuses involving a group of symptoms that can include bodily pain. In these matters the provider should be cautious for inducing inflammation to a bodily system in varying unstable levels of systemic failure. Furthermore, when treating mechanism based acute pain, a different set of treatment principles should be used to account for active damage, tissue sensitivity, and the need for healing repair phases to transition into sub-acute healing stages.

Utilization for Acute Injury

Balancing relief, safety, and treatment selection immediately following an injury can be a challenging therapeutic dilemma. Therapeutic scraping attempts to provide practical, evidenced-based guidance for providers in both operative and non-operative settings to address acute pain associated with musculoskeletal injury. This content is organized to present guidelines and identify gaps in differences between acute care and chronic pain issues.

Acute musculoskeletal injury and pain is typically mechanism based, meaning that a recent event or forceful activity occurred, which directly led to structural damage and subsequent loss of function connected to the painful symptoms. When it comes to soft tissue elements, e.g., fascia, muscle, tendons, and ligaments, as a result of encountering forceful loads, impact, or maneuvers, the involved injured anatomy has collapsed to varying degrees of destruction within fiber networks.

And therefore, in presence of acute injury, the provider must appreciate natural inflammatory phases and structural healing taking place. Dependent on the amount of damage, the new fibers may need to regenerate, reorganize, and relearn functional demands through recovery over weeks to months at a time. During this period scraping may still be utilized as soft tissue is progressing through the acute phase of healing. However, while scraping therapy can be used tactfully to provide relief and encourage fiber remodeling, the same expectations for a return of function and complete resolution of pain are not typical to assume in single session applications in acute care the same as can be achieved in chronic pain treatments.

For example, in chronic cases a recipient may regain 5/5 strength, or display full ROM, as soon as inhibited muscles are set free, while in acute care it takes longer for anatomy to fully recover and demonstrate efficiency with strength testing or greater demands of functional loads. At the same time incremental ROM/flexibility progressions achieved during acute treatment are based in the tissue tolerance and reactivity when placed under deformation and load, which ordinarily progresses overtime.

The quality of treatment effectiveness for acute care measures, in relation to any potential limitations from therapeutic scraping, remains to be reported in research or open case reports. Even so, it is advised that acute musculoskeletal conditions may respond similarly to scraping therapy as any other comparable intervention that is used in early healing phases. These findings help inform providers involved with acute injuries about treatment options, in order to build satisfying practice guidelines.

Selecting Therapeutic Scraping for Utilization



Chapter 4 References

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Principles of Ethics in Clinical Decision Making

In the workplace, ethics are actions taken based on morals, or beliefs, which directly plays into how people conduct their professional lives. Essentially, at the heart of ethics is knowing right versus wrong and applying it with integrity when required to do so. The way in which general ethical principles play out to the individual impacts many of their choices, such as where one lives, how they view money, food preferences, political affiliations, and so on. In the everyday clinical setting, providers will be required to use their own particular background, specialty training, and career experience for making decisions on the behalf of providing ideal beneficial services to others.

From the point of assessment, to designing the rehab program, onto carrying out the treatment plan, and lastly when determining appropriateness for discharge, the clinician faces all kinds of judgement calls and at times difficult circumstances presenting ethical dilemmas. There are numerous ethical issues emerging under three key categories within clinical settings: (1) business and economic issues; (2) professional issues in judgement, conduct, and effectiveness; and (3) patients' rights and welfare issues (3). For the purposes of therapeutic scraping, this text will focus on matters related to matters of occupational decision making, behavior, and beneficial outcomes.

A healthcare provider is a distinguished occupation in that the role being played has been obtained from specified training in a relevant arena of knowledge unique to their profession. It is assumed that after having met standards for passing into credentialing that the provider has an ability to practice their service in society, while exercising a high degree of self-governance in accordance with the laws and codes guiding that particular profession. Based in this, a degree of both power and great responsibility lays in the hands of the professional to fulfill their duty without instigating an imbalance with the public they serve when making decisions.

The clinical provider is bound to a fiduciary duty to serve the best interest of the patient/client and protect against undesirable circumstances. This is a unique relationship to be faced with because it is one sided, meaning the other person has no obligations to the provider, meanwhile they are legally expected to act in accordance with those under care. This implies ensuring technical capability, as well as other protective guidelines in the form of policies and procedures. The gateway for developing the principle of duty begins within academic and internship affiliations for passing through to credentialing requirements as set out by the state of practice. It is on the other end of the credentialing entryway that the provider will begin associating among the general public to offer their services in exchange for livelihood, in which behavioral competencies will come into play just as much as their skill set.

Because it is to some extent challenging to take on ethics and clearly define right versus wrong, professions usually develop guidelines centered around sound morals. Most professional organizations are regulated by associations foreseeing difficulties in what makes the differences between right versus wrong related to their specialty of practice, and therefore have regulations in place to offset disruptions in care. Any licensed or certified professional should be looking towards their respective branches of care and professional affiliations to derive ethics for what is acceptable in their area of occupation.

Unethical practice is considered as acts that do not reflect established standards within the scope of practice. No one is separate from following these set rules whether it be students in training, entry-level employees, seasoned staff, or higher-up management. Though, while all levels are expected to be familiar with codes of conduct, the instincts for what to do when placed in tough situations only comes with practice, exposure, and discussions of ethical issues.

In general, ethics comprises respect for self and others, abiding the law, truthfulness, and compassion for others, to name a few. However, a more specific criterion is required when delivering healthcare to the public. Bioethics is a term used for relating ethics in the medical field. It is divided into four distinct areas that interplay with one another, forming the basis for awareness to, or lack thereof, for providers' dealings in relationships with people they treat. These four standards of morality are beneficence, nonmaleficence, autonomy, and justice (1).

Beneficence is a primary principle of bioethics related to "doing good," which in the matter of delivering therapeutic service focuses on the patient's well-being. This is particularly related to making choices about what interventions to apply, or avoid, or what avenues of treatment or referrals should be made in the best interest of the patient. Awareness to beneficence is an ongoing process, meaning from the point of the initial encounter examination, through treatment, and onto discharge the provider is directing just about every decision they are making along lines of what provides good care towards the individual. The controversy in beneficence arises when providers, patients, or companies have different ideas for what is actually good with regards to treatment options, productivity, or resources.

Nonmaleficence is another primary principle of bioethics related to "do no harm." This a basic principle contained within the Hippocratic Oath that is central to teaching medical personnel (12). Interestingly, bioethics has been measured in research focusing on a hierarchy of principles, in which non-maleficence on average took preference over other values by participants of the study (6). Harm can be caused by voluntary actions, involuntary negligence, other acts of omissions, and failure to perform.

For every clinical decision made with regards to doing good, an extra measure is needed to minimize harm by analyzing risks. For example, it is common practice to require background medical history before providing treatment to uncover factors, such as comorbidities that would jeopardize the outcome and interest of the recipient of care. This also parallels along with familiarity to medications, contraindications, and precautions that impact choices of the provider and potential exposure to harm. Keep in mind that harm extends beyond bodily injury and can include psychological suffering, in addition to numerous other factors, such as loss of time spent doing activities, e.g., working.

Justice is also a primary principle of bioethics involving distributing fair and equal treatment resources to all people. This relates to fair decision making that includes being equitable, impartial, unbiased, dispassionate, and objective given the circumstances of each person's situation (5). Justice in the medical field entails fair outcomes and equal treatment of all involved through distribution of equal benefits. From this designation, without question the healthcare system as a whole is rampant with ethical issues involving justice.

Dealing with comparative justice, looking at person to person receiving fair care, not everyone gets the same kind of treatment even when they have similar conditions. This is due to a variety of reasons, including access to facilities, training of providers, and socioeconomic influences contributing to a person's ability to adhere to treatment. Justice may also be extended region to region, represented as

been filed with the licensing authority. Based on the complaint, the board may carry out an investigation regarding aspects of behavior, and if deemed so will act against the license holder. The key difference between malpractice and a board complaint is that a licensing board is not looking to decide on accusations for harm nor settlements to be paid out to the accuser. Instead they are regulating the conduct of the professional based on the scope of practice and code of ethics held in place by the state licensing agency, and if deemed at fault will serve out administrative disciplinary action.

Common Issues in Practice

It is helpful to review trends in malpractice claims to highlight prevalent accusation categories, which will make providers aware of how to maintain standards of care in compliant practice. Across the rehabilitation setting from hospitals to outpatient clinics, and private personally owned therapy offices, there are a range of harmful faults occurring from improper management of patients during treatment, failure to supervise properly, not monitoring patient's status, and failure to respond to unexpected pain while being treated. In addition, claims have been presented in malpractice cases for just about all conventionally used interventions e.g., therapeutic exercise injuries, heat and e-stim burns, and bodily damage from equipment.

By breaking down some of the leading allegations made in actual malpractice lawsuits, it is easier to point the way to identifying key risk management strategies to merge into mainstream usage of therapeutic scraping practices. This material serves the complete understanding of how to go about using therapeutic scraping in the clinical setting, while avoiding errors that jeopardize safe relationships with serving the public. The suggestions apply to tactics the provider can abide by to manage risks when using scraping therapy in complement with other interventions, dealing with supervision, and also appropriately monitoring and responding to the status of treatment recipients.

Claims Metrics

An awareness for risks involved in providing therapeutic services will be pulled from the publicly viewable Physical Therapy Professional Liability Exposure: 2016 Claim Report; focusing on analysis of liabilities and related allegations taking place in physical therapy. The report provides data on 443 claims filed and successfully closed, along with case studies and statistics discussing negligence of treatments and failure to provide service to standards of care (7). For sake of focus, only certain claims metrics will be presented to distinguish types that would directly come to play for providers interested in therapeutic scraping within common clinical settings.

Distribution of claims by location (7):

- 84.8% physical therapy office/clinic
- 7.5% patient homes
- 1.7% private practitioner offices
- Other <

It is clear that there is a significant impact of the "institutional environment on generating ethical issues and on practitioner's management," which has an influence on compliance (2). An analysis of claims represented based on location likely suggests the busier clinic setting brings about more traffic, along with more risks. Providers working in the community outpatient clinics, have to balance more tasks at one time, e.g. continuous schedules with higher volumes of patients, documenting procedures, treating the patient, supervising aides involved in treatment setup, overseeing larger therapy spaces, etc. A provider using therapeutic scraping in the larger types of clinical atmospheres should be mindful of the inherent forces taking place that make the particulars of supervising, monitoring, and directing treatment efforts more challenging.

Category of claims settled by type of allegation (7):

- 22.2% improper management over the course of treatment
- 20.2% improper performance of therapeutic exercise
- 19.4% failure to supervise or monitor patient during therapy
- 17.5% improper performance of a biophysical agent (e.g., heat or e-stim modality)
- 8.6% Improper performance of manual therapy

Viewing claims by category provides great insight for a provider who will be using therapeutic scraping along with other conventional components in the plan of care throughout the rehab encounter. With regards to improper management of the patient, it is necessary that the provider begins with obtaining informed consent. In addition, even though scraping therapy may be indicated, follow any referring practitioner's orders and communicate to report the patient's condition to the referring source. During the time of any sort of treatment, especially therapeutic scraping, the provider must manage the situation by responding to excessive or unexpected pain and either modifying approaches to improve tolerance or discontinue altogether. Also, demonstrate management over the course of treatment by keeping ample medical record documentation at each treatment encounter.

Regarding, supervision while working with therapeutic scraping, the provider must continue to monitor any patients who are following up with exercise activities after scraping therapy, part of which is for ensuring properly performing techniques and also that there are no equipment failures. Due diligence has to be made to instruct, supervise, and continue overseeing patients while they complete activities, even after they have started to feel better, to minimize chance for injury, e.g., during active or assistive range of motion exercises, resistance exercises, or stretching. If any exercise is raising pain, the provider should make a timely response to correct the situation.

Drawing attention to manual therapy, only 8.6% claims were involved in cases of improper management over the course of treatment. It is possible that there is less chance for harm with manual therapy delivered by trained providers who are in direct contact with the patient/client, and able to get moment to moment feedback from recipients. The same idea can be applied to using hand tools in scraping therapy, in which there really is a comparatively low chance for harm to take place.

However, while carrying out scraping therapy, it is necessary to monitor during the treatment and respond to any changes in tolerance or status. In just about all forms of manual therapy, a general level

of discomfort is to be expected. But this is different than pushing high levels of pain, which should be avoided. Since pain tolerance does vary from person to person, scraping therapy should be applied within the recipient's tolerance while keeping constant communication of their level of acceptance.

Within the 17.5% allegations for improper performance using biophysical agents (7):

- 54% were from injury during heat therapy or hot packs
- 44.4% from electrotherapy
- 1.6% from cold packs or ice

Scraping therapy is often used in complement with other modalities for pain modulation. Clearly there is not as much chance for things to go wrong with cryotherapy. However, in use of heat and e-stim burns do occur, which seems like it should be entirely preventable. These issues are based in improperly setting up the treatment modality and also failure to monitor responses and make a timely adjustment that would have otherwise not led to injury. A provider of therapeutic scraping intending to follow through with other modalities should be aware of the need to continue to check on the patient for monitoring and responding as an ongoing process.

Moving forward, since therapeutic scraping is controversial for petechiae markings that come across as bruises, it is useful to point out that bruise claims are hardly represented in malpractice. While there are no mentions of mechanisms for receiving a contusion, fair to assume it would be more likely a result of either falling down, contact with equipment, or other bodily impact with structural materials, as opposed to bruising from manual therapy or any kind of massage tool. Keep in mind that when an accusation is claimed, it must be proven that the standard of care and duty was broken in a way causing bodily harm; often needing further medical attention, taking on expenses, having loss of income from missing work, etc. It would be unlikely for a claim to come against therapeutic scraping marks; there simply is no account of being harmed afterwards, nor having loss of function, or causing a new injury.

When it comes to type of injuries sustained in therapy, fractures are the prevailing form of harm (7). Most other injuries were related to a therapist being too aggressive with techniques or progressing to quickly such as after a surgery. Either way, regarding an increase or exacerbation of an injury, there is an extremely low chance for scraping therapy itself to cause harm to the tissue being treated when being carried out properly. There really is not enough forceful stress applied through the scraping tool to cause soft tissue failure and tearing. The only way for this to occur would require being awfully aggressive with the tool, which would be circumstantial to an individual provider failing standard competency.

Regardless of any intervention type, anomalies do occur. A patient can have adverse effects even with all best interest and safeguards in place. The issues arising within malpractice claims generally centered on not responding to pain, improper management of treatment, burns from modalities, and injuries from equipment have all been trends reported on for decades (11). In view of the 2016 report, it seems from categorical descriptions that these sort of risks are challenging to overcome and may always be present in some form or another in litigious societies.

However, it is important to pay attention to issues jeopardizing the treatment encounter. After reviewing malpractice metrics, it can be ascertained that just about all conventional forms of treatment

have been brought under fire of accusations. It would seem unfair for therapeutic scraping in and of itself to be singled out as a means for causing harm and suffering any more so than other options.

From viewing malpractice data and extrapolating into use for scraping treatment, the clinical provider has to supervise the therapeutic situation, must continually monitor status during and between sessions, and make prompt appropriate responses to signals that excessive pain or injury is arising counter to the therapeutic intent. With an awareness for the most prevailing issues in standards of care, risk management strategies can be suggested for deflecting obstacles while delivering service.

Risk Control Guidelines

In health care, compliance is another common term that can take on different meanings, including how a patient correctly follows medical advice, and how medicines are prescribed and used. It can also apply to using medical devices and other equipment safely. Another description for compliance relates to the administration of treatment services, describing the level of attention and action taken by providers to adequately follow guidelines of standards of care, the scope of practice, criteria of third-party payers, and any other applicable regulations.

Non-compliance is a universal issue to overcome for effective delivery of health care services. Simply claiming being unaware is no defense for a provider or company not following the rules that are in place to ideally facilitate trusting, safe, and productive interactions with patients being treated. The main obstacle to compliance deals with being aware of numerous overlapping rules and regulations from different governing sources and communicating those features throughout the organizational hierarchy to all members of the workforce.

One means to improve compliance in the clinical setting is through policies and procedures. The term policy refers to the prevailing values that characterize an organization's professional objectives, which become formal conclusions to be enforced as regulations. Simultaneously, procedures are based in approved actions and sequences taken to implement such policies. Examples of common policies may be approved through OSHA regulations, quality control measures, company operating procedures, state agency codes, city ordinances, and building codes.

A basic example of the interplay between policy and procedure is the objective to provide a sterile clinical environment, which is backed by procedural acts, such as routines for cleaning hands, wiping surfaces with disinfectant, providing contamination containers, etc. Another example of policy would be related to following the practice act and code of ethics with regards to autonomy, and thus deriving a procedure for having an informed consent template ready to be signed by a patient.

Policy statements go hand in hand with procedures to designate formal practices expected in the occupational setting to deter issues of harm, competency, and safety. Formal written policies and procedures also provide a barrier of defense to show how the business or provider is operating to satisfy compliance. In a malpractice claim, policy and procedure protocols can be requested to establish whether a business or provider was following appropriate guidelines.

Risk control management involves strategizing to foresee dilemmas for providers applying standards of care, and thereby developing policies and procedures to avoid accusations to non-compliance that could escalate to legal issues. Ultimately, malpractice is diminished with the help of risk control actions that declare policy information, communicate procedure awareness, and continually remind providers to follow guidelines. Risk assessment, risk management, and risk communication tactics identify usefulness or flaws with procedures, to create steps for better healthcare (5).

After pointing out common malpractice accusations and descriptions related to maintaining standards of care, suggestions can be made providing additional clinical support exclusively for therapeutic scraping services. The following risk control recommendations for use with therapeutic scraping should be considered as direct action requirements for compliance and are part of clinical education to provide an adequate working environment, while ensuring patient safety in accordance with standards of care. As a disclaimer, these recommendations do not serve as legal advice, nor are they intended to take the place of official organization practice acts or other administering regulations.

Therapeutic Scraping Risk Control Guidelines

General Recommendations

- Be attentive to medical history, comorbidities, and other bodily conditions that could adversely affect using therapeutic scraping within the plan of care.
- Provide explanations and record informed consent to therapeutic scraping as an ongoing process. Be active in listening and looking for feedback of agreeable participation from the point of initial evaluation, through all treatment sessions, re-evaluations, and discharge.
- Document presence of scraping marks at the outset of use of scraping therapy. For example, "Patient has been explained indications of scraping therapy and is agreeable to treatment along with scraping marks."
- Ensure documentation habits thoroughly describe objective facts of patient care. Routinely test, observe, and record patient bodily status and outcomes. Ideally, detail before and after measures, such as pain scale, ROM and strength, and functional observations.

Scraping Treatment Recommendations

- Progress, or regress, treatment methods based on patient history, demographics, persona, and tolerance.
- Ensure that other adjoining treatment choices are appropriate and that there are no contraindications or precautions to be aware of when planning to use therapeutic exercises, heat, ice, electrical stimulation, etc.
- Monitor the patient during scraping therapy application by frequently getting clear verbal feedback at the start and duration, while the tool is used at varying bodily treatment areas.

- Assess skin integrity prior to, during, and after scraping therapy. Discuss with the recipient changes of skin integrity as it relates to beneficial therapeutic scraping marks.
- Consider holding off on using therapeutic scraping until the second or third visit in order to establish rapport. This is determined on a case by case basis at the discretion of the provider but should always come to mind. At times, it may be sensible to begin with less invasive procedures, as opposed to going right into therapeutic scraping marks with an unfamiliar or questionable patient on the first day of therapy. However, this is not a concrete rule, and it is often just as satisfying for majority of recipients to consent and outright desire any treatment that has chance of alleviating their current pain levels.
- Immediately respond to low pain tolerance, or unexpected increased pain during scraping therapy. Generally, scraping treatment is not painful, or is mildly discomforting. But in actuality, pain is individualized and varies from person to person. There may be times that someone is having difficulty based on a sensitive bodily status, psych factors, or any other number of reasons. The professional has an obligation to be attentive to increasing pain and responding by modifying techniques, as necessary. If unable to complete the treatment in agreeance with the patient and their tolerance, discontinue at once and record having done so.

Patient Monitoring Recommendations

- Monitor bodily feedback, in addition to verbal feedback. Sometimes a person being treated, or performing exercises, will not say that they are having greater pain, but their body language may suggest otherwise.
- Modify, decrease, or discontinue any treatments, exercises, or modalities immediately if a patient has adverse responses that cannot be stabilized, and document having done so.
- In any incidence involving possible injury or adverse changes to the patient's status, make a timely response with emergency medical services or referral to other suitable health care provider.
- Avoid heat modality burns by supplying enough insulation with towels and thermal coverings. Be sure to check patient response to heat in the immediate first minutes of application and provide more layers of insulation in prompt response if they state it is too hot. Re-check their verbal response as time pursues on an ongoing interval while the heat is applied, e.g., every 5 minutes over the course of 20 minutes.
- Avoid electrical stimulation injuries by using clean and undamaged electrodes. Once the current intensity is set to the desired range, check verbal responses throughout the duration of its use. Never let the patient adjust the switches, dials, or electrode pads on their own in the clinic, even if they have an e-stim/TENS unit at home.

Therapeutic Scraping Rules of Conduct

- 1 • Act in accordance with best practice standards of care when delivering quality service.
- 2 • Uphold autonomy of the public by securing informed consent prior to treatment.
- 3 • Be accountable to recording measures, treatment indications, and progress changes.
- 4 • Use policies and procedures that promote safe and sanitized areas of operation.
- 5 • Protect, monitor, and respond to the well-being of treatment recipients.
- 6 • Refrain from forceful treatment or imposing excessive discomfort with scraping tools.
- 7 • Modify or discontinue any interventions in event of arising symptoms or change of status.
- 8 • Be alert to seeking timely involvement from proper medical referral sources when needed.
- 9 • Supervise, train, and ensure competency of assistants, aides, and students involved in care.
- 10 • Commit to inspiring better therapeutic skills, scientific reasoning, and clinical judgment.
- 11 • Advocate sensibly to the public and other healthcare disciplines about therapeutic scraping.
- 12 • Abide by overseeing professional organization's code of ethics and scope of practice guidelines.

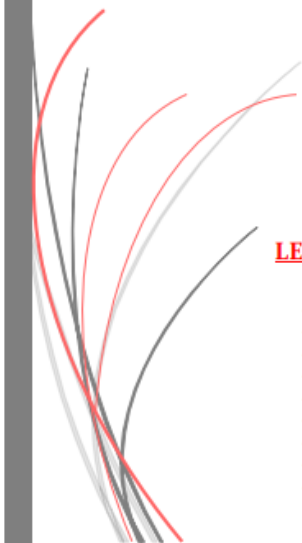
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CHAPTER 6

Application Methods for Therapeutic Scraping



LEARNING OBJECTIVES

- ✓ Understand therapeutic scraping assessment measures.
- ✓ Review treatment indications, contraindications, and precautions.
- ✓ Describe potential side effects.
- ✓ Clarify informed consent prior to treatment application.
- ✓ Highlight scraping session materials and recipient positioning.
- ✓ Identify common features of scraping tools.
- ✓ Establish clean treatment guidelines.
- ✓ Detail scraping session application and follow-up conditions.
- ✓ Refer to additional supportive treatments and modalities.

OVERVIEW OF THERAPEUTIC SCRAPING APPLICATION

Now that the fundamental groundwork has been paved for conceptualizing therapeutic scraping, a solid transition can be made into the working steps of a genuine treatment session. This section describes the standard operating procedures that should be followed when providing scraping services to others, particularly when operating in clinical settings. Going step by step, each component supports the backbone for utilizing therapeutic scraping benefits, while aiming to best interact with patients and other healthcare providers that may be encountered along the way. Providers should rely on the presented guidelines to provide satisfactory delivery of service to achieve therapeutic goals, while operating safely when interacting with therapy recipients.

To best grasp a scraping session from start to finish, methods are presented in sequential order, beginning with procedures of initial evaluation for determining indication based on signs and symptoms. The assessment approach is developed with clinicians in mind, in which steps are related with universal parts of examination that most therapists are familiar with. As such, details of the assessment correspond with data for inclusion within treatment records, such as ROM measures and palpation. Introducing assessment criterion prepares scraping providers beyond that of common users, who may scrape their own or another person's muscles for injury or relief, but without need for qualifying medical necessity nor objectively quantifying impairment deficits and progress.

Moving forward, after examination and verifying treatment indication, it is critical to perceive any risks that may occur as a result of utilization. These hazards are presented in a detailed overview of contraindications and precautions, along with the basics of attaining informed consent. Providers can rely on these guidelines to safeguard against adverse effects that may occur based on the health status of the subject that may become a jeopardizing factor. Additionally, precautions are extended to include not only medical risks, but also circumstances unrelated to health that require discretion to avoid conflicting relations from providing scraping treatment.

Going further into other features of session management, in common day it is required for business practices to ensure safety of individuals by avoiding exposure to bacterial or viral agents and potential infection. Thus, in order to minimize hazards, the following procedures include clean treatment guidelines serving to avoid contamination or contagious transmissions from equipment use between providers and recipients. This includes aspects of tool cleaning, surface disinfectants, and hygiene that should be taken seriously and practiced rigorously to ultimately lend to successful delivery of service without risking practice reputations.

Treatment guidelines also entails equipment that should be on hand when engaging client as part of session set up procedures. This is based in having supplies, such as towels, pillows, sheets, etc., which not only serves to avoid cross exposures between individuals, but also helps with patient positioning and draping to access injured anatomy. Once again, this lends to mastery for providers engaged in clinical settings presenting with varieties of musculoskeletal diagnoses, in which being able to expose and meticulously clear origin to insertion points is key. Many details of draping for the purposes of access will be displayed in Chapter 8's Procedure Demonstrations of this textbook.

Within the following content fundamental aspects of scraping tools will be described based in tool qualities and guiding parameters. Since there are countless tools available for providers, this component serves to familiarize learners with common features of scraping tool's structure and applications. After describing how to use tools generally within session treatments, suggestions are made for additional interventions, such as other types of manual therapies, exercises, and modalities. The session format culminates with looking ahead to follow-up sessions, in which recommendations are made for either continuing with scraping therapy, discontinuing and moving on to other activities, or to discharge altogether once successful completion of therapeutic goals has been achieved.

Therapeutic Scraping Assessment Approach

Therapeutic scraping treatment begins with a standard assessment. No different than repairing any appliance or a vehicle, you got to get under the hood and check it out to know what you are dealing with and what is worth fixing. Thankfully, even though the human body is far more complex than even the most advanced machinery, the assessment process for getting a sure hold on going about scraping is generally easy, reliable, and reproducible the majority of time. For professional providers, it is important to establish a firm examination process to qualify medical necessity and properly indicate therapeutic scraping as an ideal course of treatment action throughout the patient encounter.

In general terms of scraping for personal, recreational, or other usage outside clinical atmospheres, an assessment process is likely not to be put to use. Outside the occupational setting, someone using scraping would simply apply the tool to painful muscles with no regards to measuring features that are included on a physical examination. However, rehabilitation professionals are typically obligated by law and third party insurance payers to keep treatment records for substantiating medical necessity and tracking progress during delivering healthcare services. And therefore it is necessary to present a basis for linking therapeutic scraping to features of initial evaluations, daily treatment notes, and discharge goals.

With regards to the musculoskeletal system that this material is specifically geared towards, scraping therapy has an especially objective role it plays in serving to repair certain identifiable dysfunctions of soft tissue. Equally, it has an exact endpoint that the provider should be seeking to meet for attaining necessary physiological changes that allow predictable and successful treatment outcomes. From this perspective, the provider is looking to meet at least the following assessment criteria and derivative therapeutic goals with scraping.

Therapeutic Scraping Objective Goals

1. Reduce pain symptoms below the initial chief complaint
2. Improve soft tissue mobility by remodeling abnormal restrictions
3. Increase flexibility and/or joint ROM at regionally involved anatomy
4. Normalize voluntary muscle strength
5. Integrate functional activity for returning to ADLs

In view of these objectives to accomplish, a concise examination process for determining the recipient's condition and planning for therapeutic scraping can be made. Dependent on the provider's role and the occupational setting, accustomed evaluation protocols may already be in place. In this case, the assessment process given in this guide serves to add towards, or emphasize, existing examining methods while drawing attention towards steps taken to resolve soft tissue matters with therapeutic scraping.

In the entire realm of therapy, there are numerous commonly used and specially acquired assessment systems coming from a wide assortment of academic and working backgrounds. As such, other frequently used examination measures, such as: vitals, medical history, observing posture, performing manual muscle testing, joint mobility testing, functional movement screening, balance testing, functional outcome measure surveys, imaging, etc., are all suitable at the discretion of the evaluator, or rehabilitation facility's procedures.

Keeping matters focused to specific info related to the inclusion of therapeutic scraping, the following serves as the minimally competent standard procedures to perform for an assessment. From these main points of criteria, the provider is building the indication for whether or not the potential recipient's pain is coming from soft tissue restrictions and if it is affecting their musculoskeletal system, in which a rehab treatment plan and ideal prognosis can be developed.

Therapeutic Scraping Assessment Criteria

1. History: Ask about pain location, symptom aggravators, and pain scale descriptors
2. Measure: Assess posture, muscle flexibility, joint ROM, and strength
3. Palpate: Scan, detect, and identify abnormal soft tissue restrictions
4. Function: Observe or survey functional baselines and outcomes

In best case scenarios, subjects can provide current pain scale, along with related motions or positions that can be replicated with the provider during the assessment. Of which, after each treatment when comparing pre and post measurements, the provider should view the recipient repeating previously aggravating motions again, while attaining the pain scale value. The values and observations would then be recorded within treatment records.

For example, a subject begins the assessment stating they have current knee pain of 3/10, which can increase to 5/10 at worse when running. The provider performs the assessment and as part of the process observes the subject performing squats to try to recreate symptoms. The subject indicates feeling pain in the knee and gives a pain scale of 5/10. After receiving a session of therapeutic scraping, for purposes of post treatment comparison, the provider again asks the recipient to perform the squat motion to record the value, now given as 0/10 pain.

Measurements Testing Impairment Signs

Observing and measuring positioning and functional movements, along with involved joint ROM, muscle flexibility, and strength, are all key indicators foretelling of the degree of severity and anatomical variations taking place. Quickly distinguishing between particular body segments, and how to measure the movement system, provides differential diagnostic data and is an essential task of any accomplished clinician. Measurements form the basis of examination for investigating root causes, compensating variables, and translated effects on how the inflicted person is moving to accomplish routine activities.

In addition, gathering useful quantifiable information provides baseline values for tracking and motivating progress through comparisons after receiving therapeutic scraping. In clinical settings this satisfies the medical necessity criterion by showing how the musculoskeletal system is damaged, its carryover to being a problem in ADL's, and the potential for rehabilitative progress. Aside from the administrative role, taking pre and post measurements can also be a satisfying part of an accomplished provider's work, involving observing successfully changing results. And in competent cases, these changes are not slow going at all, they can occur in just one to a few sessions, making an exciting encounter for the provider and being extremely helpful to recipients of therapeutic scraping procedures.

Posture Assessment

Observing posture relates to viewing a subject in static and dynamic positions for getting a look at how anatomy around the chief area of complaint is positioned or operating in its natural state. Typically, this is common within therapy clinics and there may already be in place examination standards for this parameter. Stationary standing posture is often viewed from the front, side, and back using the traditional plumb line point of view and descriptors. In addition, dynamic posture is observed through a variety of functional movement screens, which can include walking, squatting, the overhead squat, reaching hands behind the neck and back, among a variety of others.

The chief objective for viewing posture in an assessment is related to focusing the examiner on the general presentation of flexibility, joint ROM, and muscle stability existing in a particular body region.

Collectively this constitutes the subject's alignment, of which often there are abnormalities appearing as imbalances deviating from the norms of position or movement. These imbalances may be contributing factors towards chief complaints of pain and injury. All of which provides clues for where to prioritize primary and secondary treatment targets, as well as planning secondary interventions.

For example, someone complaining of neck stiffness that is painful on the left side, might present with faulty posture appearing as a left lateral tilt of the head upon the neck; suggesting muscles and joints are restricted on the left side, and pulling the head down that direction. In another example, someone having back spasms mostly painful on the right side, might present with faulty posture of leaning over to the right in the lumbar curvature, suggesting a possible imbalance straining the right quadratus lumborum. In another case, excessive externally rotated lower leg and ankle pronation may be a factor causing calf strain and Achilles' tendon pain when walking or running.

There are numerous variations of postural presentations that can offer additional signs for the assessment. Whenever a subject has a chief complaint while also appearing with faulty posture, it is sensible to address the structural imbalance as part of the overall rehabilitation plan by making use of corrective stretches and strengthening. However, keeping matters simple, in most cases it would be excessive to pursue correcting global postural issues in other areas of the bodily chain that are not directly related to the chief complaint.

A well-balanced clinician should be practiced in observing for faulty posture positions, including:

- Upper cross syndrome, forward head, tilted head, protracted shoulders, internally rotated glenohumeral joint, excessive mid back kyphosis, scapular tilting, lower cross syndrome, lumbar curvature, hip hiking, hip in/out flares, knee angle, ankle pronation, and foot arches.

Other commonly used dynamic postural and functional movement screens may, involve:

- Sit to stand, 2 leg or 1 leg squat, box step ups, single leg balance, gait, shoulder reaching.

Range of Motion Testing

Measuring joint ROM is a practiced method of using a goniometer to position along a specific joint's axis, and then passively or actively move to the available end point to record a numeric value. In subjects with limited ROM accompanied by pain, the measurement is taken at the precise point of pain aggravation. There are standard values that have been validated to be quantitative norms at each bodily area, for example 180 degrees shoulder flexion and 130 degrees knee flexion. Specifically explaining how to take ROM is outside the scope of focus of this guide on therapeutic scraping. There are numerous books and internet resources available displaying these tasks if seeking this info.

Expertise in ROM values and how to gather measurements can drive the therapeutic outcome and the documentation of progress that is typically required in rehabilitation settings. For example, while the norm for wrist flexion ROM is 90 degrees, a subject presenting with forearm extensor tendinosis may state increase pain measured at a limited 60 degrees. This value is documented in the record and supports treatment indication and medical necessity for restoration. Upon completion of the exam and commencing the first session, the restricted value serves as a reference point for having an immediate

Scanning is critical during palpation because it provides a full layout of soft tissue restrictions where scraping will take place. Specifically at the area of chief complaint, scanning identifies the primary target intended to treat, in which working between the examiner's palpation skills and statements from the subject, the indication of the pain's location should be precisely made by pointing a single finger at the body part, for both parties agreeing on as exact as possible an area for resolving.

Intrinsic scanning involves palpating to detect one, or several, restrictions within the specified anatomy of the indicated primary target. This breaks down to checking proximal and distal attachment sites and the bulk portion of the involved soft tissue, or muscle. In the case of finding other secondary targets of restrictions along the track, they should be treated for the sake of an effective therapeutic outcome on the primary treatment zone.

Extrinsic scanning entails scanning beyond the borders of the identified primary zone of restriction towards other surrounding anatomy linked to the primary involved structure. Once the chief complaint target is found, the kinetic chain should be palpated in multidirectional patterns above, below, and across for detecting other connected soft tissue restrictions, which are prioritized as secondary treatment zones of interests. This serves to point out restrictions residing outside the chief complaint that may be worth scraping for reducing tightness imbalances, impacting ROM, and contributing to relief.

- o An example of intrinsic scanning for primary and secondary target zones:

A subject has a chief complaint of left knee pain, and upon asked to do so points with a single finger to the lower outer patella. The provider palpates at the site the subject pointed to and resonance describes a rigid, marble size restriction within the distal IT band attachment at the tibia near Gerdy's tubercle. Now, the provider has identified the primary treatment target corresponding to the chief complaint and has a mental schematic of its anatomical layout.

The provider then continues intrinsic scanning, along the entire length of the IT band towards the proximal attachment at the hip. In this case resonance detects a significant soft tissue restriction characterized as a large knot at the mid-section of the IT Band, near the outer upper thigh. Due to its direct impact on tightness distally at the chief complaint, the provider designates this zone as a secondary target to address in the plan for therapeutic scraping.

- o An example of extrinsic scanning for secondary target zones:

Regarding the subject with a chief complaint of left knee pain, of which a primary target has been identified at the distal IT band attachment, and a secondary target has been discovered within the IT band further up its chain, the provider assumes extrinsic scanning at the lateral hamstring, which borders along the outer portion of the IT Band.

The provider detects resonance indicating soft tissue restrictions at the distal end of the lateral hamstring muscle and tendon that are near the primary target zone. The provider considers the role this may play in the overall imbalance at that region, and if determined may designate the lateral hamstring area as another secondary target zone for treatment.

Clinical Prediction Rules

The purpose of a clinical prediction rule (CPR) is to present a group of related variables having predictive value in identifying conditions and pathways for deriving courses of corrective action. The practice of using a CPR complements the decision-making process for determining individuals most likely to succeed in having effective outcomes. While abiding by CPRs, providers are guided towards a level of certainty for predicting diagnosis and prognostic outcomes to assign potential recipients who satisfy the eligibility criteria.

With regards to therapeutic scraping, the CPR is based on signs and symptoms taken from the initial assessment. Beginning with a subjective history, the examiner asks questions allowing them to focus in on suspected anatomical components involved and the level of severity described by the subject. With this info in mind, the assessment leads towards examining impairments (ROM, strength, special tests, etc.) of the condition for finding indications that match the chief complaint. Upon reaching the end of the assessment the provider can use the information collected to associate with the CPR and decide if scraping is likely to provide ideal outcomes in reducing pain and injury for the recipient.

Suggested clinical prediction rules for individuals likely to respond to therapeutic scraping:

1. Subjective report of bodily pain localized at soft tissue surface anatomy.
2. Painful descriptors linked to palpation at identifiable areas of chief complaint.
3. Measurable flexibility or ROM impairments reduced from norms around area of complaint.
4. Not assumed to be related to bone fracture, complex disc injury, or severe soft tissue tear.

Therapeutic Scraping Indications

Based on issues related to soft tissue restrictions and criterion of the clinical prediction rules, the following are common conditions possibly indicated for therapeutic scraping:

- ✓ Muscle tightness, myofascial restrictions, or joint stiffness
- ✓ Muscle pain (myalgia), strains, soreness, spasms, trigger points
- ✓ Fascial-tendon injuries, including tendinopathy, tendinitis, tendinosis, medial/lateral epicondylitis, rotator cuff tendinitis, patellar tendinitis, Achilles tendinitis, plantar fasciitis, etc.
- ✓ Ligament tears, such as ankle sprains and collateral ligaments of the knee
- ✓ Bursitis of hip, knee, and shoulder
- ✓ Syndrome pain conditions, including shoulder impingement, IT Band syndrome, patellofemoral pain syndrome, carpal tunnel syndrome, DeQuervain's syndrome, trigger finger, posterior tibial stress syndrome, piriformis syndrome
- ✓ Post-operative management, scars, swelling
- ✓ Chronic lumbar (lumbago), thoracic (thoracalgia), and cervical (cervicalgia) pain

Contraindications and Precautions to Scraping Treatment

At this point in the assessment, a clear schematic representing the sensitivity of pain, impairments of movement, and related soft tissue restrictions are in view. With an intent set for areas of treatment, there are some concerns to address beforehand for taking into consideration certain circumstances that could jeopardize the outcome or aggravate relationships with the recipient.

Understanding precautions and contraindications is essential to risk management before proceeding to ensure safety and appropriateness in selecting and utilizing scraping therapy. In clinical settings, it is the duty of the provider to use good sense and judgment before treating a potential recipient with any form of available treatment option. Abiding by the following considerations will help protect against pitfalls that may arise, which could have been avoided with a sensible degree of discretion before setting out to provide scraping services.

Contraindications

Beginning with absolute stopping points to providing treatment, the following contraindications are factors for not continuing with the plan to provide therapeutic scraping, even when indicated from the exam's findings of soft tissue restrictions. The primary concern being scraping would not only fail to provide a helpful outcome, but instead could cause further harm in some way, whether be related to local, global, or systemic reactions. These issues generally apply to reasons not to scrape a certain person due to unstable pre-existing conditions interfering with the treatment zone.

Therapeutic Scraping Contraindications

- Open wounds or unhealed sutures
- Sunburn and trauma burns
- Severe dermatitis, rash, and frail skin
- Infections around the treatment site
- Acute unstable bone fracture
- Acute severe strain and sprain injuries (Grade 3)
- Major lumbar disc injury (Stage 3 to 4 with signs of radiculopathy)
- Blood clot and/or blood thinners
- Contagious, viral, or bacterial conditions
- Myositis ossificans
- Unstable high or low blood pressure
- Any kind of severe unstable bodily pain
- Any active prevailing medical diagnosis, such as but not limited to neurological disorders, cancer, heart disease, rheumatism, vascular diseases, complex regional pain syndrome, or immune disorders
- High levels of pain arising during application of scraping treatment

Precautions

After considering contraindications, there still may be matters of concern that do not necessarily disqualify a recipient from receiving scraping treatment, but either require additional attention for the treatment, or holding off for another time. Precautions are factors that do not prevent therapeutic scraping from being used, but do involve discretion in proceeding, which entails handling it on a case by case basis. Different than contraindications that present as harmful, the main concern for precautions are related to transient issues that affect delivering the treatment, or that interfere with activities in the immediately following days.

Medical Precautions

In the following cases, scraping therapy can be used with discretion and monitoring patient response during active medical statuses:

- Acute strain and sprain injuries (Grades 1 to 2)
- Minor lumbar disc injury (Stages 1 to 2 with mild signs of radiculopathy)
- Recent surgical procedure still healing
- Severe chronic pain, fibromyalgia, rheumatoid ailment in remission
- Skin allergies to certain lubricants
- Post injections, corticosteroid, PRP, stem cell
- Numbness/tingling in extremities
- Pregnancy

Surface Precautions

In the following situations, scraping can be used to remodel soft tissue at treatment zones, while working around body surface obstacles and avoiding direct contact with the scraping tool:

- Incisions, lacerations, and unhealed operation sutures
- Skin obstructions, e.g., freckles, pimples, skin neoplasms
- Acute symptomatic bruises
- Body art and jewelry, e.g., necklaces, piercings, etc.
- Healing tattoos (Settled tattoos are okay to scrape overtop and induce scraping marks).

Therapeutic Scraping Mode Parameters – Mode 2 (IASTM)

Duration	Until palpation detects reduced restrictions, within seconds to several minutes
Rate	1 to 3 strokes per sec, slow to moderate
Length	Short, mid, to long range spacious strokes
Pressure	Medium to firm
Direction	Along lines of soft tissue fiber restrictions in multiple directions
Utilization	Soft tissue remodeling, accelerating healing

Therapeutic Scraping Mode Parameters – Mode 3 (Gua sha)

Duration	Until observable capillary eruption, within seconds to several minutes
Rate	2 to 4 strokes per sec, moderate to fast
Length	Short to mid-range focused strokes
Pressure	Light to medium
Direction	Along lines of soft tissue fibers in direction of elongation
Utilization	Microcirculation, soft tissue remodeling, pain relief

Supportive Care

Once the provider has determined a reasonable stopping point, it is of maximal benefit to immediately facilitate with supportive manual therapies that further mobilize and stretch through the previously restricted treatment zones. Facilitation allows the previously impaired area to directly gain a greater level of flexibility, joint ROM, and muscle strength. Done correctly, between scraping treatment and sound facilitation techniques, the provider should be able to satisfactorily observe and measure before and after impairments and progress values with each session.

It is especially useful for the provider to implement hands-on stretching techniques, whether they be static, active, PNF, etc., for specifically elongating a scraped body region. The provider can also implement other manual therapy techniques at this point, such as joint mobilizations, muscle energy techniques, and advanced myofascial releases (e.g., A.R.T., strain-counter-strain), in which they will find greater ease and success towards furthering localized mobility after having first scraped the area.

In cases of obvious strength or stability impairments the provider should look to facilitate with manual resistance exercises, or other contraction based hands-on approaches (e.g., PNF reversals, isometrics). However, if muscle weakness is just a slight issue, then it may be more suitable to address overall strength simply within the therapeutic exercise program. Different than conventional ways of thinking for gaining strength through adaptations overtime, providers may find sudden return of strength deficits in quicker time once a previously restricted area is no longer inhibited and thus able to mechanically perform as soon as blockages are removed.

It is completely fine for the recipient to complete other therapeutic exercises or activities directly following scraping therapy. In most cases for each body part scraped, there should be a correlating

corrective stretch and adjoining strength exercise to support restoration attempts, correct imbalances, and integrate towards functional activity. Myofascial release and massage type techniques, like rolling sticks and rollers, are also useful to further remodeling and mobility. Lastly, the recipient may also be treated with common modalities, such as ice, heat, and e-stimulation at the scraped region.

Post Therapeutic Scraping Session

The scraping session ends with clean treatment protocols as previously mentioned. The provider should immediately clean-up and sanitize scraping tools with proper anti-bacterial solution. Within clinical settings, it is generally common to use the same tool between sessions with different people as long as proper cleaning and storage occurs. The scraping provider should also routinely clean their own hands with appropriate soap and water, or hand sanitizers.

The scraping recipient should be sent away with an explanation for what to expect over the next few days after treatment and when to follow-up. Ideally, they will be given a list of home exercises to complete, of which stretching and mobility exercises around the treated area are a key component. In addition, for managing soreness they may be instructed in ice or heat for use at home. The provider may also want to present a moment providing useful education for body mechanics, resting or sleep positions, in addition to ergonomic issues that are aggravating or alleviating factors.

As a matter of courtesy and sound practice, the provider should point out any scraping marks on the recipient's body, ideally using a mirror or taking a quick phone pic to show off signs of treatment. To most people these kinds of markings are not familiar, but oftentimes they are fascinated by them, and they appreciate showing friends and family. Though each individual is different, generally therapeutic skin markings fade away over the course of 1 to 5 days, depending on current health status, history of onset, and inherent toxicity factor. Even if petechiae markings may appear severe, they are not painful.

General Predictors of Scraping Marks

Type	History of Onset	Palpation of Restrictions	Skin Marking Observations	Toxicity of tissue	Fading Time
1	Shorter acute	Fewer Less rigid	Scattered Bright red	Less toxic Healthy	1 to 2 days
2	Sub-acute to chronic	Mild Rigid	Consistent Red	More toxic Unhealthy	2 to 4 days
3	Extended chronic	Severe Very rigid	Saturated Red to purple	Very toxic Unhealthy	3 to 5 days



Learning Strategies for Therapeutic Scraping

LEARNING OBJECTIVES

- ✓ Clarify the role of short-term and long-term memory in skills.
- ✓ Explain spaced-retrieval technique (SRT) and visual cuing for learning.
- ✓ Characterize SRT preparation guidelines and session structure.
- ✓ Describe SRT practice through case scenarios.

INTRODUCTION TO LEARNING STRATEGIES

At the core of therapeutic scraping mastery is solid awareness of surface anatomy. Since the treatment is intensely hands-on based, the capacity to be able to recall relevant anatomical information on demand is required in resolving a variety of musculoskeletal based pain and injury issues. In matters of scraping applications, using knowledge of anatomy is complemented by development of senses for palpating through maneuvers in a way that allows complete restoration along soft tissue pathways. With frequent practice the provider develops greater sensitivity in feeling and thinking through their hands. This comes to play in examining and treating obscure soft tissue restrictions embedded within fascial layers, which can make all the difference in reaching desired outcomes in a timely manner.

The upcoming Chapter 8 arrangement of therapeutic scraping demonstrations serves a variety of purposes. Foremost, the main objective of each presentation is for revealing legitimate procedures and session formatting sequences that aspiring providers should be familiar with. Secondly, the content provides schematic particulars of anatomy for preliminary studies, including nomenclature, attachment sites, and muscle actions. Thirdly, the demonstrations serve as a tangible reference source for later referring to during acts of providing examinations and scraping treatments.

The demonstrations account for entry-level understanding on accessing over 50 muscle-tendon groups across the body. In professional use, some bodily regions appear time and time again, while others only arise once or twice over an entire career, if at all. Regardless of occurrence, the therapeutic scraping procedures are withstanding. That is to say, the body will always be classified by the same structural contents and terminology describing its parts and functions. This is quite an advantage compared to an auto mechanic, or even a building contractor, who has to stay current on different kinds of mechanical components from both older and newer technologies, along with varying ways for going about restorations as times change.

Even though the body's structural components goes unchanged from earlier history, through today, and into the future, what remains open is providers capabilities for learning specific anatomical sites for applying scraping treatments. Typically, individuals entering therapeutic or medical fields are required to take anatomy courses that cover the entirety of the body and all of its subdivisions of systems. In the case of students who will be directly involved with the musculoskeletal system in their profession, even more time is spent staring over and trying to memorize lists of countless muscle names, origins, insertions, and movement actions.

Dedicating extended time reading over anatomy references and memorizing for the sake of permanent learning can be an overwhelming, tiresome, and dry process. And much like any other subject, some people learn the information very well, while others struggle to speak names properly, let alone remember where everything is located. In reality, learning surface anatomy is comparable to being taught a new language and map reading at the same time. One has to adapt to understanding and saying unfamiliar terms, while also assigning it to an actual bodily location as accurate as possible.

The surface anatomy knowledge and palpation skills of a provider interested in scraping mastery is imperative to examinations, diagnostics, and outcomes essential for treating correct sources of conditions. Because handling soft tissue injuries is intensely hands-on related, efforts for learning terms

and procedures are best not left to chance. Instead, therapeutic scraping explores evidence-based learning strategies to provide a valid suggestion for going about studying essential procedures and content. This will be based on what is known as spaced-retrieval technique (SRT), which will be combined with external visual cuing. Providers should rely on this strategy for an effective means of reviewing anatomy concepts necessary for expanding skills into detecting and treating soft tissue abnormalities.

The Role of Memory Learning

For most people, memory is something taken for granted in the short and long term scheme of living. Memory is necessary to our ability to acquire language, develop special skills and high levels of thinking, and to effectively make decisions on the day to day basis. We use memory daily, if not all the time, sometimes drawing upon information encoded decades priorly to accomplish work tasks, or to cook a meal, or drive a vehicle. And sometimes memory is a matter of remembering subtle things in life, like what items to purchase at the grocery store, where did you place the keys, or the date of someone's birthday. The list is never ending for common essential functions involving memory.

Gradually, at a certain point in mid to later adulthood, people are generally no longer in demand for making brand-new long term skills-based memories and are basically fixed operating on what has already been learned. However, when people are younger, they constantly develop procedural memories in personal, family, vocational, and cultural lives, which develop into lasting knowledge and competencies of daily routines, recreational interests, and occupational tasks in life. Along the way from youth towards adulthood, it is within progressive grades of academics that minds are expected to learn by participating in learning activities, for absorbing material to reflect back in testing as an indicator of acquired knowledge.

With such emphasis on memory demands, it is a surprise there is hardly time spent teaching learning-memory tactics at early academic levels. In fact, it is basically assumed as early as elementary school that students should know how to learn based on reading, listening, and remembering. At all grade levels up through college, when a student does not make good grades despite participating and studying, it is often taken to mean that the individual has a lower degree of intellect, interest, or grasp for the material. And, if someone receives low grades, and they are onboard for wanting to achieve a better report, the common corrective suggestion is to just study harder, pressuring the student to read more, take extra notes, use flash cards, or get a tutor, etc. After which, for some it remains a toss-up, as sometimes students perform better, and other times frustration persists for lack of retention.

Fair to say that rarely ever are low grades attributed to memory functions and the learner's inaudible technique going on within their brain for how they are actually stimulated by content and programming memories into mind. Yes, some people are better learners than others, while some people are simply not interested at all, and many are distracted. Regardless, the majority of people can attest to never actually having been taught formally in school, or elsewhere, any tried-and-true aspects on how to best engage memory for sake of learning, recalling, and reciting information or performing skills. Instead, nuances of learning-memory are left to chance and are an individual's problem to figure out how to better deal with.

Even though we all instinctively understand how to remember things and do it all the time, it may be challenging to actually define memory. Memory is a mental function that is dependent on focusing attention to incoming information in a behavioral way, allowing fragments to be organized into developed constructs stored for purposes of retrieval at a later time. Along with that, the brain is structurally organized to mentally process different memory types.

Short-term memory, or working memory, deals with the ability to be stimulated by information and use it as it is being processed, or within a short duration afterwards, such as a few minutes, hours, or a day or two later. Oftentimes, short-term memory content gets discarded once it is used and there is no longer a demand of accessing its program. On the other hand, long-term memory deals with converting information from short-term memory that is in demand to be accessed on a regular basis, in which ideally it becomes permanently retained.

"Practice makes perfect" and "like riding a bike you never forget," are both familiar sayings for how routine exposure to intellectual content or physical activities, develops short-term patterns into lasting skills. Many people take great advantage of memory for perfecting and displaying exceptional talents or characteristics. Too often we associate this with super-star athletes, striking entertainers, and brilliant technology innovators. Rarely do we pay respect to the same processes taking place for competent administrators, veteran emergency first-responders, experienced schoolteachers, expert mechanics; to name a few among many within the community relying on a heightened sense of long-term memory from learning and practice to accomplish important skills to a high-level of standards.

In matters of therapeutic scraping, providers should be interested in learning-memory and how it translates over to developing perfected senses and technical aptitude. This textbook supplies essential information on the theoretical practice of therapeutic scraping for musculoskeletal utilization. However, no different than a person cannot ride a bike just by reading about it, the anatomy and procedures have to be routinely acted out, until connections are made from the page to short-term and long-term memory for successful clinical integration.

Spaced-Retrieval Technique for Learning-Memory

There are three primary phases for incorporating new learning-memories, involving (1) encoding, (2) storage, and (3) retrieval that function as ongoing collaborative processes. The ability of one process affects the capability of the other components. For example, if poor attention or distractions are occurring while encoding new information, the ability to store quality data is compromised, and the result is inadequate content when attempting to retrieve for recall or performance tasks later on. These phases are applicable in two distinct categories described as declarative based and procedural based memory (10).

In declarative memory the individual is relying on ability to recall and repeat facts, events, vocabulary, and word knowledge (10). Meanwhile, in procedural memory the individual is relying on encoding and retrieval of particular skills, habits, and conditional learning (10). In essence, declarative memory involves the saying of things, while procedural memory means the doing of things. It is within

Scenario 2

- PT with 5 years of experience is seeing a rising trend in shoulder patients for pre to post-surgical evaluations and treatments, thus wanting to review shoulder anatomy.
- Goal: To be able to recall muscle locations and functions of rotator cuff muscles.
- Plan: Review rotator cuff muscles for 10 minutes and practice Q/A recalling for 10 minutes.

Examples of prompt question/answer practice

- Where should you look to find the infraspinatus muscle?
 - Answer: Posterior scapula
- Where do you feel for the distal attachment of the infraspinatus?
 - Answer: On the upper arm at the greater tuberosity of the humerus
- Where do you feel for the proximal attachment of the infraspinatus?
 - Answer: On the scapula within the infraspinous fossa
- What are the movement functions of the infraspinatus?
 - Answer: Moves the shoulder through external rotation
- What are the names and attachments of other muscles in the rotator cuff group?
 - Answer: Supraspinatus, teres minor, subscapularis

Scenario 3

- Veteran PT having 10 years in private practice is planning to deliver an in-service to their therapy department on evaluating and treating the back.
- Goal: To be able to teach muscle location and function of lower back muscles.
- Plan: Review lower back for 5 minutes and practice Q/A recalling for 10 minutes.

Examples of prompt question/answer practice

- Where should you look to find the quadratus lumborum (QL) muscle?
 - Answer: The posterior-lateral side of the low back
- Where do you feel for the distal attachment of the QL?
 - Answer: At the inferior border of the 12th rib and also at the transverse processes of each lumbar spine
- Where do you feel for the proximal attachment of the QL?
 - Answer: At the iliac crest of the ilium and the iliolumbar ligament
- What are the movement functions of the QL?
 - Answer: Moves the lumbar spine by side bending

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Ethical Practice in Therapeutic Scraping

LEARNING OBJECTIVES

- ✓ Appreciate principles of ethics in clinical decision making.
- ✓ Familiarize with four core standards of bioethics in medicine.
- ✓ Explain compliance to and breaking from standards of care.
- ✓ Analyze relevant malpractice claims accusations.
- ✓ Present risk control guidelines for therapeutic scraping usage.
- ✓ Establish rules of conduct for therapeutic scraping providers.

INTRODUCTION TO THERAPEUTIC SCRAPING ETHICS

Professional ethics deals with merging values and morals into constructs for organizing decision making processes into standards of conduct. Most healthcare professions abide by a set of rules that reflects particular principles related to their specialty of practice to avoid unwanted occupational actions. Through the gateways of academics, clinical training, and credentialing, the obligations are accepted by providers as a code of ethics. Ultimately, professional codes of ethics are used to guide behavior in order to support harmonious relationships between providers rendering service and the people within the public seeking assistance.

Health providers face a great deal of exposure to ethical dilemmas over all sorts of issues because there is an extremely close and direct relationship with different personalities within the public. During the course of treatment, which can be either short duration or long-lasting from weeks, months, or years at a time, there requires constant involvement, communication, and collaboration for providing responsive interventions to people in pre-existing bodily damaged conditions. Dealing with someone already injured when arriving to therapy necessitates walking a fine line for keeping things from going awry and resulting in defending explanations as to why they got worse while seeking help.

Even though therapeutic scraping is not in of itself problematic, the reality of providing any sort of medical treatment in society brings along risks and exposures to potential accusations of harm done towards a patient under care. Since scraping therapy is not a widely used nor familiar procedure to the common person, a provider should be mindful of how to go about ensuring their patient's rights, safety, and sense of well-being are not being infringed upon. With this in view, awareness must be raised to alert clinicians of issues that may arise to assist in risk management strategies and circumvent conflict.

When it comes to conduct and foreseeable concerns jeopardizing public interests, healthcare specialties are regulated under representative associations and credentialing boards. These entities oversee professionals who have fulfilled academic and occupational requirements allowing them to work within governed regions of practice. In connection with this, these organizations set out the legal scope of practice, forming basis for decisions and actions taken by providers. Ideally, abiding by practice standards and codes of ethics, clinicians avoid coming under fire for misbehaving, or rendering services in ways that would bring about legal, financial, or reputational repercussions for cause of harm.

In addition to professionals conducting themselves appropriately, in a modern world of malpractice it is vital to protect oneself and business by using procedures, policies, and documentation practices representing actions taken to mitigate harm. Ensuring compliance to business and practice policies adds an extra layer of protection against chance for malpractice incidences.

It is imperative to address particular concerns that could come along with therapeutic scraping's uniquely beneficial, but unfamiliar qualities in using body work hand tools, as well as petechiae. From there, a tailored set of ethical principles and standards of care can be derived for specific use with scraping treatments to connect with any professional organization's regulations or code of conduct for protecting public interests. By featuring a model for ethical decision making and standards of care specifically for therapeutic scraping, providers will feel more confident in upholding clinical practice conduct while delivering services safely.



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