




Kazemizer Shark™
INSTRUMENT-ASSISTED SOFT TISSUE THERAPY

Dr. Mohsen Kazemi, RN, DC, D.Ac, FRCCSS(C), FCCP(R)(C), DACRB, MSc., PhD

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Presenter biography




Dr. Kazemi graduated from CMCC (Canadian Memorial Chiropractic College) in 1996 and is a Professor of Clinical Education and coordinator for the Sports Sciences Residency program. He is a Fellow of Royal College of Chiropractic Sports Sciences (Canada), Fellow of College of Chiropractic and Physical and Occupational Rehabilitation (Canada) and has practiced acupuncture for 20 years. He has successfully defended his PhD thesis, "What makes Sparing Taekwondo athlete successful" through South Wales University. He has published several articles in peer-reviewed journals and presented research in Taekwondo and chiropractic worldwide. He is assistant editor of the Journal of Canadian Chiropractic Association. He has authored the first complete book on vibration plate exercise programs, ("Vibration Plate Exercise").

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Presenter biography




■ He is the inventor of the VMTX Vibromax Therapeutics® soft tissue technique, the Kazemizer Hockey, a portable exercise device that assists in the prevention of lactic acid build-up, the Kazemizer Shark®, an instrument assisted soft tissue therapy mobilization tool and Leukomizer Taping Technique®.

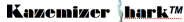
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Presenter biography




He has been the appointed Alternate Chiropractor for Core Canadian Health Care Team for the Salt Lake City 2002 Winter Olympics, Manchester 2002 Commonwealth Games, Rio 2007 Pan American Games and Beijing 2008 Olympic Games; served as the Core Canadian Medical Team Chiropractor at Santa Domingo 2003 Pan American Games and Canadian Taekwondo team Chiropractor at Beijing 2008, and Rio 2016 Olympics. He was appointed Chiropractor to Mount Cypress at 2010 Winter Olympic Games, the only Canadian Chiropractor at the first Youth Olympic Games, Singapore, 2010, and Chiropractor at 2011 and 2015 Pan am Games.




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Presenter biography



He has been the medical Chair for Ontario Taekwondo Association since 2003, Taekwondo Canada Medical Chair 2009-10 and High-Performance IST (Integrated Support Team) coordinator 2015-2016. He has served as travelling team doctor and team chiropractor with Canadian Taekwondo National team since 1998.

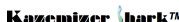
He holds a 7th degree black belt in Taekwondo. He has been Canadian Poomsae Taekwondo Champion for several years, Champion at Commonwealth poomsae 2017 and World Taekwondo Hanmadang in 2008, Silver medalist at Commonwealth Taekwondo Championships 2008, World Cup Poomsae 2019, and Pan Am TKD championships 2022, bronze medalist Pan Am Taekwondo Championships 2012, 2014, 2016, 2018 and 2020.



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Table of Content

- Introduction
- Neck
- Upper limb protocols
- Back protocols
- Lower limb protocols



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Short seminar overview

During this hands-on workshop you will learn how to use Kazemizer Shark® tool for treatment of various conditions from neck to toe. Dr. Kazemi will provide a brief introduction on the state of research in Instrument Assisted Soft Tissue Mobilization (IASTM) and effectiveness as well as the principles of treatment. He will demonstrate and guide you through each procedure. You will have ample opportunity to practice with a partner and receive personalized feedback. Review of the material learned as well as a question-and-answer period will end the workshop.

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Seminar Goals

- To understand indications and contraindications to IASTM
- To be informed of the evidence on IASTM
- To learn how to use a Kazemizer Shark® and the principles of IASTM
- To learn various IASTM moves and treatments

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Monday Morning you will be able to

- To assess for adhesion and scar tissue using Kazemizer Shark®
- To communicate indications and or contraindications to IASTM to your patients
- To effectively provide IASTM to your patients

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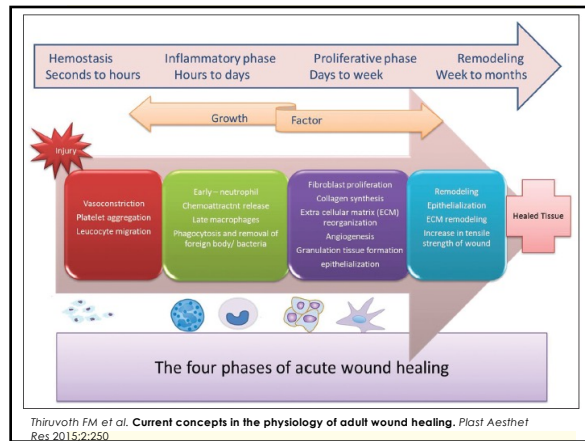
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BODY REGIONS AND PARTS COVERED

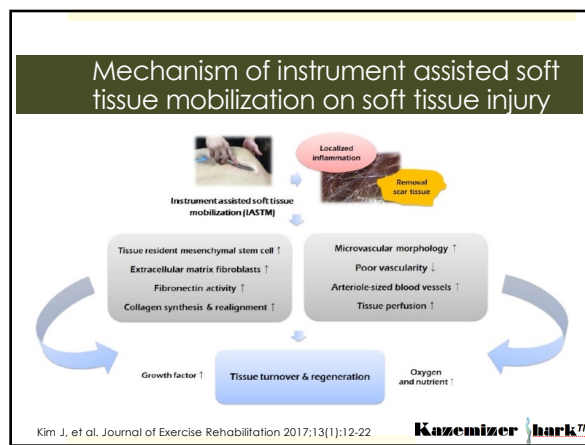
- CERVICAL SPINE
- THORACIC SPINE
- LUMBAR SPINE
- PELVIS
- UPPER LIMB
- LOWER LIMB

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INTRODUCTION

- Instrument Assisted Soft Tissue Therapy/mobilization (IASTM)
- Hammer et al. demonstrated reduced pain in a patient with lumbar compartment syndrome after using IASTM to apply controlled microtrauma to the affected soft tissues.
- Studies suggest that this controlled microtrauma induces healing via fibroblast proliferation, which is necessary for soft tissue healing.
- Additional studies have shown clinical efficacy using IASTM for the treatment of various disorders with painful soft tissue components.

Hammer et al. 2005, 2008; Gehlsen et al. 1999; Burke et al. 2007; Howitt 2006, 2009; Looney et al. 2011 **Kazemizer bark™**

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INTRODUCTION

- Augmented soft-tissue mobilization (ASTM) introduces a more controlled amount of microtrauma into an area of disarray; therefore, the response of the ligament to this microtrauma could involve increased fibroblast production and the conversion of type III to type I collagen.
- IASTM has been shown to increase the fibroblast response to produce more collagen with the controlled movement of the instruments.
- Cheatham et al. (2019) suggest that a light IASTM technique may produce a neuromodulation effect on local tactile discrimination and pain perception in individuals with DOMS.

Schaefer & Sandrey, 2012; Sevier et al. 1999, 2000; Gehlsen et al. 1999; Melham et al. 1998; Howitt 2006; Looney et al. 2009; Wilson et al. 2000; Davidson et al. 1997 **Kazemizer bark™**

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INTRODUCTION

- Of the clinical studies and case reports that have been conducted using IASTM, animal and human studies have evaluated the initiation of the healing cascade for lateral epicondylitis, patellar tendinopathy, rotator-cuff tendinopathy, Achilles tendinopathy, chronic ankle pain, and early and long-term healing of an acute injury to the medial collateral ligaments of rats.
- IASTM provides a method of addressing impaired arthrokinematics related to poor tissue healing and hypomobility, adhesions, and other soft-tissue restrictions proximal to the ankle joint and chronic ankle injuries.

Schaefer & Sandrey, 2012; Sevier et al. 1999, 2000; Gehlsen et al. 1999; Melham et al. 1998; Howitt 2006; Looney et al. 2009; Wilson et al. 2000; Davidson et al. 1997; Cheatham et al. 2019 **Kazemizer bark™**

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INTRODUCTION

The Comparison of Instrument-Assisted Soft Tissue Mobilization and Self-Stretch Measures to Increase Shoulder Range of Motion in Overhead Athletes: A Critically Appraised Topic.(2018)

- A total of 3 studies included.
- Two articles found a significant increase in acute ROM when compared with a self-stretch measure.
- All 3 articles showed increases in internal rotation and horizontal adduction, and 1 study reported an increase in total arc of shoulder ROM.
- There is moderate evidence to support the use of IASTM to acutely increase ROM in the glenohumeral joint of overhead athletes.

Hussey MJ et al. 2018. J Sport rehabilitation

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INTRODUCTION

The effects of instrument-assisted soft tissue mobilization on active range of motion, functional fitness, flexibility, and isokinetic strength in high school basketball players.(2018)

- RCT, 40 young basketball player, 20 IASTM group (calf muscles six times per week for 8 weeks) and 20 control no treatment.
- Active range of motion (AROM), functional fitness (sidestep and vertical jump), and isokinetic lower strength in the knees and ankles measured before and after.
- IASTM group significantly improved in all aspects compared to control group.
- These results suggest that IASTM improves functional fitness and lower body muscle strength in young basketball players.

Rhyu et al. 2018. Technol Health Care

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INTRODUCTION

Effects of Instrument-assisted Soft Tissue Mobilization on Musculoskeletal Properties.(2019)

- RCT crossover study, 14 healthy volunteers (11 men and 3 women, 21-32 yr).
- IASTM was performed on the skin over the posterior part of the lower leg for 5 min and targeted the soft tissues (gastrocnemii, soleus, and tibialis posterior muscles; overlying deep fascia; and Achilles tendon).
- Control, the same participants rested for 5 min between pre- and post measurements without IASTM on a separate day.
- After IASTM, the dorsiflexion range of motion significantly increased by $10.7\% \pm 10.8\%$ and ankle joint stiffness significantly decreased by $-6.2\% \pm 10.1\%$. However, peak passive torque and muscle stiffness did not change. All variables remained unchanged in the repeated measurements of controls.

Ikedo H et al. 2019. Med Sci Sports Exerc

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INTRODUCTION

Instrument-Assisted Soft Tissue Mobilization: A Systematic Review and Effect-Size Analysis.(2019)

- Thirteen articles met the inclusion criteria. Four independent reviewers assessed study quality using the PEDro and Centre for Evidence-Based Medicine scales. Twelve articles were included in the effect-size analysis.
- Large effect sizes were found in outcomes for ROM (uninjured participants), pain (injured participants), and patient-reported function (injured participants).
- The different IASTM tools used in these studies revealed similar effect sizes in the various outcomes.
- The current literature provides support for IASTM in improving ROM in uninjured individuals as well as pain and patient-reported function (or both) in injured patients.
- More high-quality research involving a larger variety of patients and products is needed to further substantiate and allow for generalization of these findings.

Seftin CB et al. 2019. J Amn Train

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INTRODUCTION

THE EFFICACY OF INSTRUMENT-ASSISTED SOFT TISSUE MOBILIZATION FOR MUSCULOSKELETAL PAIN: A SYSTEMATIC REVIEW 2019

- A total of 5 randomized controlled trials and 1 controlled clinical trial were included.
- Five of the 6 studies compared IASTM to a non-IASTM group.
- All 5 of these studies demonstrated a statistically and clinically significant ($p < 0.05$) reduction in pain within the IASTM groups.

Karmali, A., Wolzados, A., & Sluber, K. (2019). THE EFFICACY OF INSTRUMENT-ASSISTED SOFT TISSUE MOBILIZATION FOR MUSCULOSKELETAL PAIN: A SYSTEMATIC REVIEW. *Journal of Contemporary Chiropractic* 2(1), 25-33. Retrieved from <https://journal.parker.edu/index.php/jcc/article/view/51>

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INTRODUCTION

THE EFFICACY OF INSTRUMENT-ASSISTED SOFT TISSUE MOBILIZATION FOR MUSCULOSKELETAL PAIN: A SYSTEMATIC REVIEW 2019

- Four of the 6 studies demonstrated a statistically significant ($p < 0.05$) difference between groups.
- Paucity and heterogeneity of studies included, in addition to a lack of methodological consistency.
- There is some evidence that the technique may support the breakdown and absorption of scar tissue, mobilization of fascia, and improved tissue healing.

Karmali, A., Wolzados, A., & Sluber, K. (2019). THE EFFICACY OF INSTRUMENT-ASSISTED SOFT TISSUE MOBILIZATION FOR MUSCULOSKELETAL PAIN: A SYSTEMATIC REVIEW. *Journal of Contemporary Chiropractic* 2(1), 25-33. Retrieved from <https://journal.parker.edu/index.php/jcc/article/view/51>

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INTRODUCTION

Instrument assisted soft tissue mobilization in adhesive capsulitis: A randomized clinical trial. 2021

- 30 shoulders were randomly allocated into two groups- Group A (IASTM + conventional treatment) and Group B (conventional treatment).
- Treatment was given for 12 sessions, 3 sessions per week for 4 weeks. Participants were evaluated pre treatment, post 6th session and post 12th session.
- Outcome measures was Numerical Pain Rating Scale, Shoulder Pain And Disability Index, Shoulder Range of Motion, Apley's scratch test.
- IASTM along with conventional protocol was able to improve mobility and function among adhesive capsulitis patients.

J Bodyw Mov Ther . 2021 Apr;26:435-442.

Instrument assisted soft tissue mobilization in adhesive capsulitis: A randomized clinical trial. [Amrita Agarwal](#) ¹, [Kritika Saxena](#) ², [Tushar J Palekar](#) ³, [Manisha Raj](#) ⁴

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INTRODUCTION

Extracorporeal Shockwave Therapy Versus Graston Instrument Assisted Soft-Tissue Mobilization in Chronic Plantar Heel Pain: A Randomized Controlled Trial. 2022

- Even though ESWT+(Stretching Exercises (SEs) and GT@+SEs interventions seem to have similar effects on initial step pain at posttreatment and 8-week-follow-up; GT@+SEs was found most effective for improving functional status at 6-month in the management of CPHP.

J Am Podiatr Med Assoc . 2022 Sep 15:1-34.

Extracorporeal Shockwave Therapy Versus Graston Instrument Assisted Soft-Tissue Mobilization in Chronic Plantar Heel Pain: A Randomized Controlled Trial

[Rajin Puri](#) ¹, [Rajiv Puri](#) ², [Dilber Karanprabhu Chakrasu](#) ³, [Sanku](#) ⁴, [Sonal Subba](#) ⁵

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INTRODUCTION

Effectiveness of instrument assisted soft tissue mobilization (IASTM) and muscle energy technique (MET) on post-operative elbow stiffness: a randomized clinical trial. 2022

- IASTM and MET were both effective in improving outcomes in postoperative elbow stiffness.
- IASTM was more effective in improving pain and patient-specific function.

J Man Manip Ther . 2022 Sep 28:1-9.

Effectiveness of instrument assisted soft tissue mobilization (IASTM) and muscle energy technique (MET) on post-operative elbow stiffness: a randomized clinical trial

[Pratiksha Bhosale](#) ¹, [Sonal Kulkarni](#) ²

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INTRODUCTION

- **Kazemizer |hark™** is an innovative instrument used for soft tissue therapy.
- It is made of surgical stainless steel to provide feed back from the tissue for detection of the adhesion and scar tissue site due to its stiffness and ability to conduct vibration caused by adhesions, fibrosis and scared tissue.
- As such it can be used as a diagnostic and locator for the site of adhesions and scar tissues as well as therapy.

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INTRODUCTION

- **Kazemizer |hark™** is light and slightly longer than a regular pen; therefore, easy to handle without fatiguing the practitioner.
- It is easy to clean, store and even carry in your side pocket.
- **Kazemizer |hark™** is made as one instrument for all body parts. The edges are all bibeveled so that it could be used in any directions and sides.
- **Kazemizer |hark™** is used to break down scar tissues, adhesions, to treat trigger points and to enhance blood flow and lymphatic drainage of the injured areas.

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INDICATIONS

- Dense connective tissue conditions
 - Tendinopathies
 - Sprains
 - Chronic Compartment syndromes
- Muscle conditions
 - Strain
 - MPS
- Scar tissue/adhesions
- Edema

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Relative Contraindications

- ❑ Cancer
- ❑ Burn scars
- ❑ Renal dysfunction
- ❑ Pregnancy
- ❑ Anticoagulant medications
- ❑ Rheumatoid arthritis
- ❑ Varicose veins

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Absolute Contraindications

- ❑ Thrombophlebitis
- ❑ Uncontrolled hypertension
- ❑ Unhealed fractures
- ❑ Infections
- ❑ Open wounds/unhealed suture sites/sutures
- ❑ Myositis ossificans/Hematoma

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CAUTIONS AND RECOMMENDATIONS

- ❑ Inform your patient that IASTM can cause redness, soreness and bruising in the area of treatment.
- ❑ Instrument-assisted soft tissue therapy can cause bruising. Do not continue to treat if bruising appear.
- ❑ The creator of the **Kazemizer | bark™** will not be held responsible for any misuse or abuse of the device or any wrongdoing of the practitioner.

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PRINCIPLES OF TREATMENT

Table 1. Instrument-assisted soft tissue mobilization (IASTM) treatment program for soft tissue recovery

Program	Objective	Protocol	Reference
Warm-up	Increases the blood supply, as well as heating and plasticity of the tissues	10-15 min with light jogging or by using a stationary bicycle, upper body ergometer, or elliptical machine, or 3-5 min with hot pack or ultrasound	Black (2010); Hammer (2008)
IASTM	Remove scar tissues, and facilitates synthesis and realignment of new collagen	30° to 60° with 40-120 sec	Caray-Loughmani et al. (2010); Laudner et al. (2014)
Stretching	Contract the shortened tissue, and prevent reinjury	3 RPTs with 30 sec	Miners and Bougie (2011)
Strengthening exercise	Strengthen the treated tissue, and prevent reinjury	High repetition with low load exercise	Hammer (2008)
Cryotherapy	Reduce pain, control residual inflammation, and preventing secondary cell hypoxic injury	10-20 min	Howitt et al. (2006); Papa (2012)

Kim J, et al. Journal of Exercise Rehabilitation 2017;13(1):12-22

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PRINCIPLES OF TREATMENT

- Assess and diagnose the condition. Use the **Kazemizer | bark™** locate the area of therapy.
- Warm up the tissue via exercise, or therapeutic ultrasound, or EMS/IFC and heat pack to make the collagen fibers more pliable.
- Apply skin lotion to the area of treatment to decrease friction.

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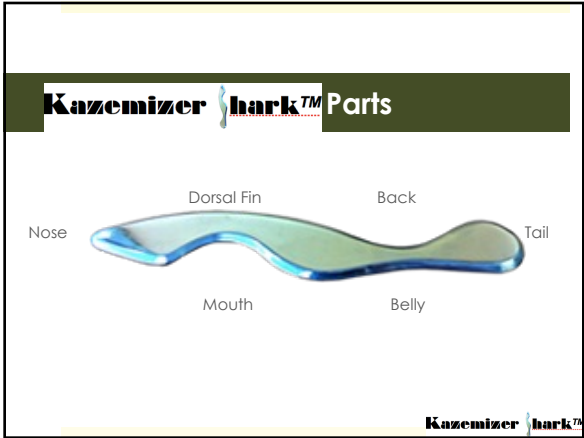
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PRINCIPLES OF TREATMENT

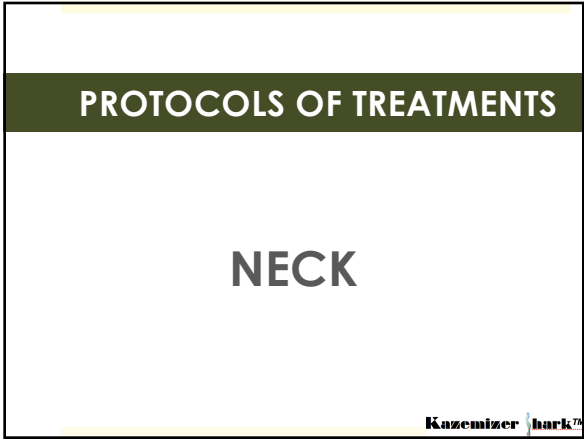
- Use the **Kazemizer | bark™** specific part according to the area of treatment. Usually 5-10 passes would be sufficient, however, stop when the small bruising vesicles appears. Start with 4-5 passes over the area without movement and then another 4-5 passes with specific shortening and lengthening movement of the injured area.
- Have the patient stretch the area.
- Ice as needed basis.

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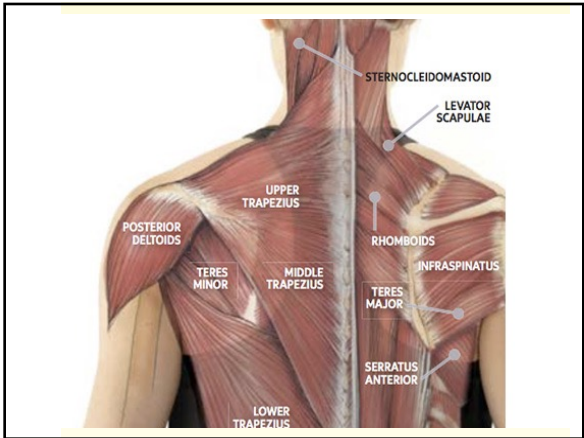
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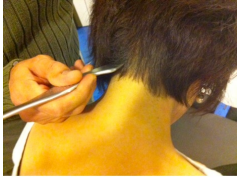
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Suboccipital muscles

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the nose of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with neck flexion/extension and rotation.
- Stretch the area 3 x 15 seconds.
- Ice if needed.

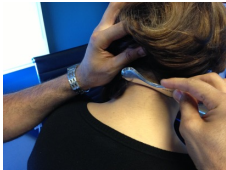


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Cervical erector spinae

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the belly of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with neck flexion/extension.
- Stretch the area 3 x 15 seconds.
- Ice if needed.

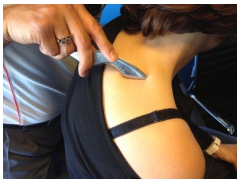


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Levator Scapulae

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the side of the mouth of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with neck rotation & flexion to opposite side.
- Stretch the area 3 x 15 seconds.
- Ice if needed.




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Upper Trapezius/Upper Cross Syndrome

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the back of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with neck lateral flexion.
- Stretch the area 3 x 15 seconds.
- Ice if needed.




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Scalene Posterior

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the side of the mouth of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with neck rotation & flexion.
- Stretch the area 3 x 15 seconds.
- Ice if needed.

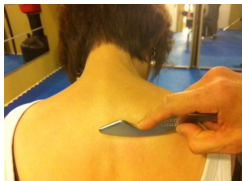


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Middle Trapezius/Rhomboid Major

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the fin of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with neck flexion/extension and scapular protraction/retraction.
- Stretch the area 3 x 15 seconds.
- Ice if needed.




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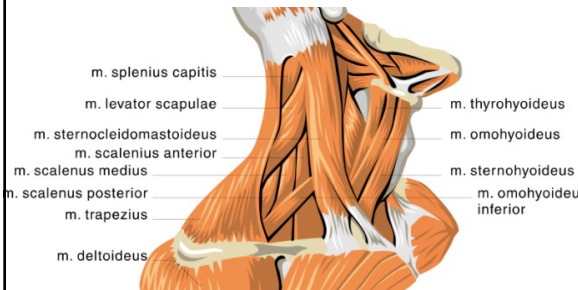
Splenius Capitis

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the belly of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with neck rotation.
- ❑ Stretch the area 3 x15 seconds.
- ❑ Ice if needed.



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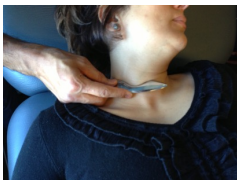


<http://anatomyofthefoot.com/neck-muscle-anatomy-pictures.html>

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SCM

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the mouth of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with neck rotation flexion/extension.
- ❑ Stretch the area 3 x15 seconds.
- ❑ Ice if needed.

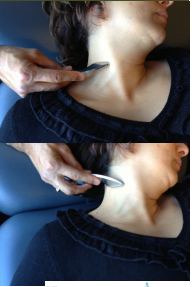


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Scalene Anterior and Medius

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the side of the mouth of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with neck rotation & extension.
- Stretch the area 3 x15 seconds.
- Ice if needed.



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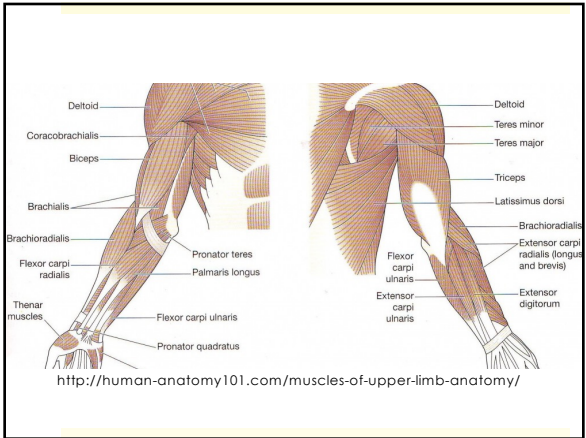
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PROTOCOLS OF TREATMENTS

UPPER LIMB

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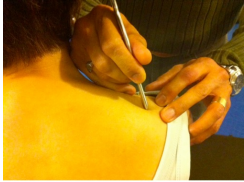


<http://human-anatomy101.com/muscles-of-upper-limb-anatomy/>

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Supraspinatus muscle

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the nose of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with shoulder abduction/adduction.
- ❑ Stretch the area 3 x15 seconds.
- ❑ Ice if needed.




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Deltoid

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the back of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with shoulder flexion/extension (for Ant and post Delt), Shoulder abduction/adduction (for lat Delt).
- ❑ Stretch the area 3 x15 seconds.
- ❑ Ice if needed.




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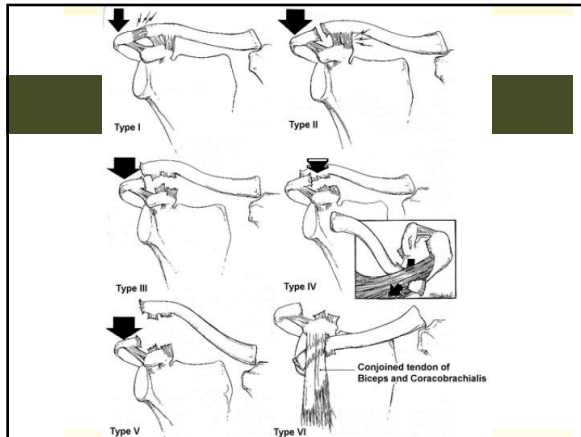
Acromioclavicular joint (AC joint sprain)

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the nose of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with shoulder horizontal adduction/abduction.
- ❑ Stretch the area 3 x15 seconds.
- ❑ Ice if needed.



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Infraspinatus/Teres Minor muscle

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the dorsal fin of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with shoulder internal/external rotation.
- Stretch the area 3 x 15 seconds.
- Ice if needed.

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Triceps tendon


- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the back of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with elbow flexion/extension.
- Stretch the area 3 x 15 seconds.
- Ice if needed.

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Lateral epicondyle/Tennis Elbow

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the mouth of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with wrist flexion/extension.
- ❑ Stretch the area 3 x 15 seconds.
- ❑ Ice if needed.




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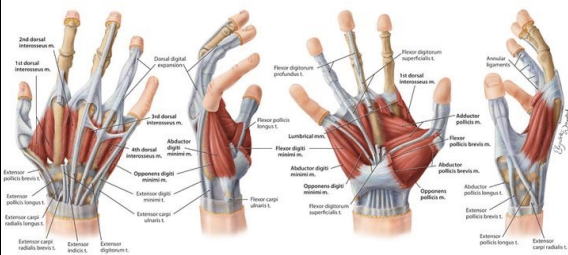
Wrist extensors/Tennis Elbow

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the back of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with wrist flexion/extension.
- ❑ Stretch the area 3 x 15 seconds.
- ❑ Ice if needed.



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<http://cephalicvein.com/2016/09/hand-anatomy/>

57

First Metacarpophalangeal

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the mouth of the **Shark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with thumb abduction/adduction.
- Stretch the area 3 x 15 seconds.
- Ice if needed.



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58

Second Metacarpophalangeal

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the mouth of the **Shark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with index flexion/extension.
- Stretch the area 3 x 15 seconds.
- Ice if needed.




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59

Intermetacarpal

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the nose of the Shark at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with finger flexion/extension, abduction/adduction.
- Stretch the area 3 x 15 seconds.
- Ice if needed.



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60

Sternoclavicular joint

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the nose of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with shoulder horizontal adduction/abduction.
- ❑ Stretch the area 3 x 15 seconds.
- ❑ Ice if needed.

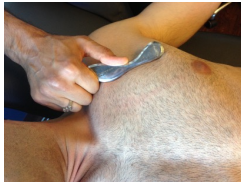


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61

Pectoralis Major

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the back of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with shoulder horizontal adduction/abduction.
- ❑ Stretch the area 3 x 15 seconds.
- ❑ Ice if needed.



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62

Pectoralis Minor

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the tail of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with shoulder internal/external rotation at 90 deg abduction.
- ❑ Stretch the area 3 x 15 seconds.
- ❑ Ice if needed.



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63

Anterior Glenohumeral Capsule

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the nose of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with shoulder horizontal adduction/abduction.
- ❑ Stretch the area 3 x 15 seconds.
- ❑ Ice if needed.



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64

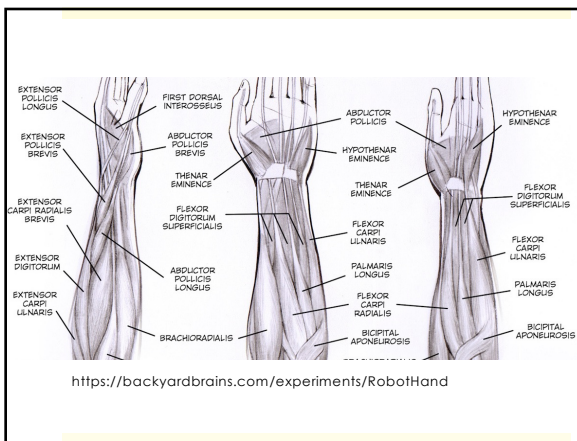
Biceps Brachii

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the back of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with elbow flexion/extension.
- ❑ Stretch the area 3 x 15 seconds.
- ❑ Ice if needed.



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65



66

Biceps tendon/Aponeurosis

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the side mouth of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with elbow flexion/extension.
- Stretch the area 3 x 15 seconds.
- Ice if needed.




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67

Medial epicondyle/Golfer's Elbow

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the tail of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with wrist flexion/extension.
- Stretch the area 3 x 15 seconds.
- Ice if needed.




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68

Wrist flexors/Golfer's Elbow

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the back of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with wrist flexion/extension.
- Stretch the area 3 x 15 seconds.
- Ice if needed.




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69

Carpal tunnel

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the nose of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with wrist and fingers flexion/extension.
- ❑ Stretch the area 3 x15 seconds.
- ❑ Ice if needed.




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70

Serratus Anterior

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the back of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with shoulder protraction and retraction.
- ❑ Stretch the area 3 x15 seconds.
- ❑ Ice if needed.



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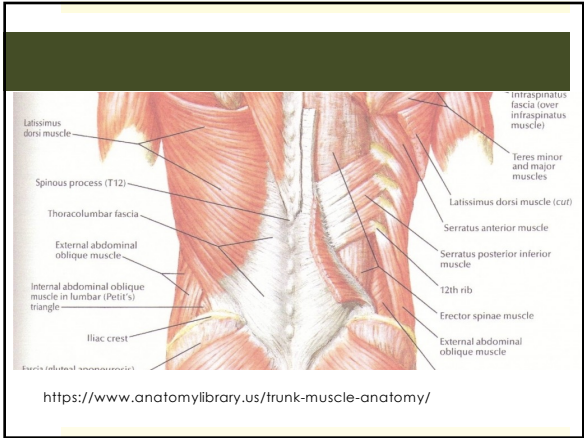
71

PROTOCOLS OF TREATMENTS

BACK

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72



73

Thoracic and lumbar paraspinals

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the belly of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with back flexion/extension.
- Stretch the area 3 x 15 seconds.
- Ice if needed.

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74

Interspinous ligament


- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the nose of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with back lateral flexion/extension and rotation.
- Stretch the area 3 x 15 seconds.
- Ice if needed.

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75

Multifidus

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the tail of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with back lateral flexion/extension and rotation.
- ❑ Stretch the area 3 x15 seconds.
- ❑ Ice if needed.




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76

Dorsosacral Ligament

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the tail of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with hip flexion/extension.
- ❑ Stretch the area 3 x15 seconds.
- ❑ Ice if needed.



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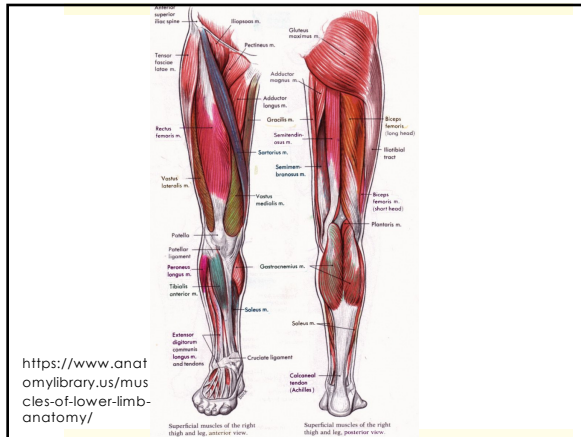
77

PROTOCOLS OF TREATMENTS

LOWER LIMB

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78



79

Gluteus Maximus

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the back of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with hip extension/flexion.
- Stretch the area 3 x 15 seconds.
- Ice if needed.

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80

Piriformis and hip external rotators

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the dorsal fin of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with hip internal/external rotation.
- Stretch the area 3 x 15 seconds.
- Ice if needed.

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81

Hamstrings

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the belly of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with knee and hip flexion/extension.
- ❑ Stretch the area 3 x 15 seconds.
- ❑ Ice if needed.




Kozenizer hark™

82

Lateral Head of Gastrocnemius

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the tail of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with knee flexion/extension and ankle flexion/extension.
- ❑ Stretch the area 3 x 15 seconds.
- ❑ Ice if needed.




Kozenizer hark™

83

Popliteus

- ❑ Warm up the area.
- ❑ Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- ❑ Use the tail of the **hark™** at 40-50 degrees.
- ❑ Work on the area without movement 4-5 passes and then with knee flexion/extension and tibia internal/external rotation.
- ❑ Stretch the area 3 x 15 seconds.
- ❑ Ice if needed.




Kozenizer hark™

84

Gastrocnemius Musculotendinous Junction

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the back of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with ankle and knee flexion/extension.
- Stretch the area 3 x 15 seconds.
- Ice if needed.



Kozemizer hark™

85

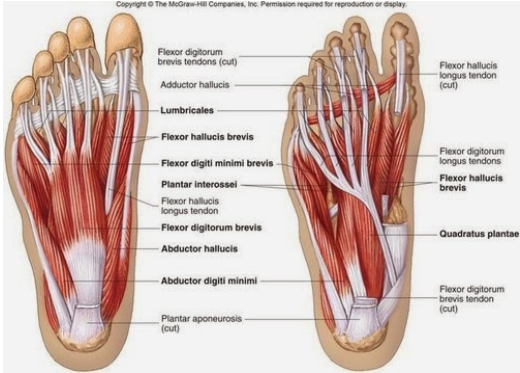
Achilles tendon

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the tail (for the sides) or mouth (for the body of tendon) of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with ankle flexion/extension.
- Stretch the area 3 x 15 seconds.
- Ice if needed.



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86



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Flexor digitorum brevis tendons (cut)
Adductor hallucis
Lumbricales
Flexor hallucis brevis
Flexor digiti minimi brevis
Plantar interossei
Flexor hallucis longus tendon
Flexor digitorum brevis
Abductor hallucis
Abductor digiti minimi
Plantar aponeurosis (cut)

Flexor hallucis longus tendon (cut)
Flexor digitorum longus tendons
Flexor hallucis brevis
Quadratus plantae
Flexor digitorum brevis tendon (cut)

<http://arcphysicaltherapy.com/2014/strengthening-the-core-muscles-of-the-foot/>

87

Plantar Fascia/Plantar Fasciitis

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the back of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with toes and ankle flexion/extension.
- Stretch the area 3 x15 seconds.
- Ice if needed.




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88

Abductor Hallucis/Bunions

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the back of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with toe abduction/adduction.
- Stretch the area 3 x15 seconds.
- Ice if needed.



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89

First Metatarsophalangeal /Bunion/Hallux valgus

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the mouth of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with toe abduction/adduction.
- Stretch the area 3 x15 seconds.
- Ice if needed.



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90

First Metatarsophalangeal/Turf Toe

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the side back of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with toe flexion/extension.
- Stretch the area 3 x15 seconds.
- Ice if needed.



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91

First Metatarsophalangeal/Soccer Toe

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the mouth of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with toe flexion/extension.
- Stretch the area 3 x15 seconds.
- Ice if needed.



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92

Latissimus Dorsi

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the back of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with shoulder adduction/abduction.
- Stretch the area 3 x15 seconds.
- Ice if needed.




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93

Quadratus Lumborum

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the tail of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with back lateral flexion and rotation.
- Stretch the area 3 x15 seconds.
- Ice if needed.




Kozenizer hark™

94

Gluteus Medius

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the dorsal fin of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with hip adduction/abduction and internal/external rotation.
- Stretch the area 3 x15 seconds.
- Ice if needed.

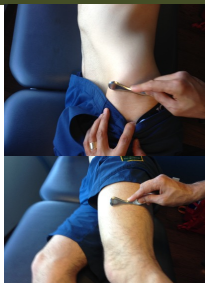


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95

TENSOR FASCIA LATA AND ITB

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the belly of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with hip adduction/abduction.
- Stretch the area 3 x15 seconds.
- Ice if needed.




Kozenizer hark™

96

Lateral Collateral ligament (LCL sprain)

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the tail of the Shark at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with knee flexion/extension.
- Stretch the area 3 x 15 seconds.
- Ice if needed.

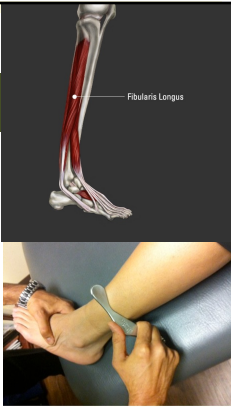


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97

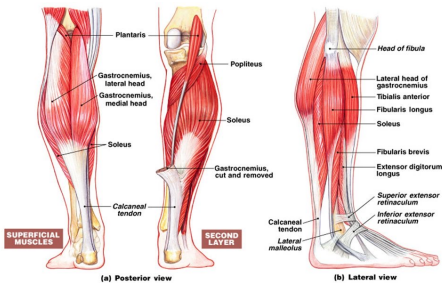
Fibularis muscles

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the back of the Shark™ at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with ankle inversion/eversion.
- Stretch the area 3 x 15 seconds.
- Ice if needed.



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98



(a) Posterior view (b) Lateral view

Muscles that Move the Foot and Toes

<http://arcphysicaltherapy.com/2014/strengthening-the-core-muscles-of-the-foot/>

99

Lateral retinaculum

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the mouth (over the lateral malleolus) or side of the mouth (for the flat parts) of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with ankle flexion/extension.
- Stretch the area 3 x 15 seconds.
- Ice if needed.



Superior Peroneal Retinaculum

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100

Anterior Talofibular Ligament/ Inversion sprain

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the nose of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with ankle flexion/extension, eversion/inversion.
- Stretch the area 3 x 15 seconds.
- Ice if needed.




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101

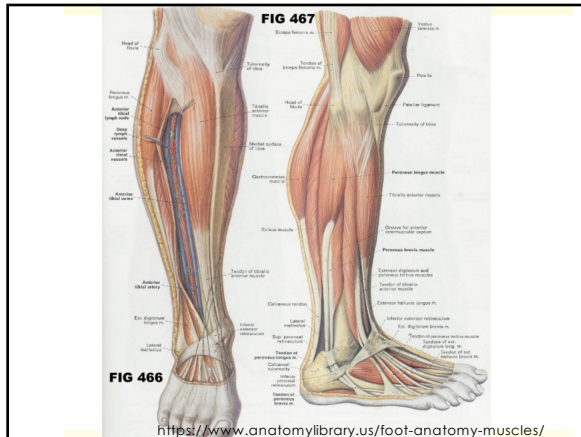
Quadriceps Femoris

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the back of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with knee and hip flexion/extension.
- Stretch the area 3 x 15 seconds.
- Ice if needed.



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102



103

Patellar Tendon/Jumper's Knee

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the mouth of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with knee flexion/extension.
- Stretch the area 3 x 15 seconds.
- Ice if needed.

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104

Anterior Tibialis/Anterior Shin Splint


- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the tail for specific and the back of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with ankle flexion/extension, inversion/eversion.
- Stretch the area 3 x 15 seconds.
- Ice if needed.

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105

Extensor Digitorum Longus

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the belly or the back of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with ankle and toes flexion/extension.
- Stretch the area 3 x15 seconds.
- Ice if needed.



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106

Adductor Longus/Groin pain

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the belly of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with hip adduction/abduction.
- Stretch the area 3 x15 seconds.
- Ice if needed.

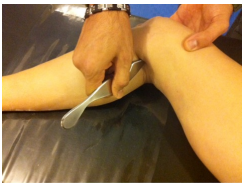


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107

Semitendinosus Tendon/Pes Anserine

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the nose of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with knee and hip flexion/extension.
- Stretch the area 3 x15 seconds.
- Ice if needed.




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108

Medical Collateral Ligament (MCL sprain)

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the nose of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with knee flexion/extension.
- Stretch the area 3 x15 seconds.
- Ice if needed.




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109

Deltoid Ligament/ Eversion sprain

- Warm up the area.
- Apply skin lotion such as ultrasound gel etc. to the area of treatment.
- Use the nose of the **hark™** at 40-50 degrees.
- Work on the area without movement 4-5 passes and then with ankle flexion/extension, eversion/inversion.
- Stretch the area 3 x15 seconds.
- Ice if needed.



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110
