REHABILITATION PROTOCOL

Sports Hernia

Provided is a generalized rehabilitation program aimed at improving a patients’ recovery from a sports hernia.

***Professional Athletes – Program can be accelerated to return back to more sport specific exercises (Phase IV 4-6 weeks)

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Credits:

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Principles of Rehabilitation

1) Reduce Pain
   o Control Inflammation and Deliver Manual Therapy
2) Improve Range of Motion
   o Train Active Isolated Stretching
3) Re-Educate Neuromuscular Pathways
   o Optimize Brain-Muscle Connection
4) Strengthen and Condition
5) Develop Functional Training
   o Return to Sport

***Widely accepted in rehabilitation training, these principles must be followed in order to optimize outcomes***
Phase I-A  Weeks 5  0 (Pre-Habilitation)

Goal: To improve current physical condition and support a quicker return to post-surgery activities. All exercises are done to tolerance.

Adjunctive – Pain and Inflammation Control

• Cryo-therapy – Application of ice as a therapeutic modality (20 – 30 min on / off; multiple times throughout the day)
  o Ice Massage
    ▪ Incision Sites
    ▪ Adductors
    ▪ Low Back
    ▪ Anterior Hip Muscles (Quads)
    ▪ Pubis Bone & Lower Abdominals / Obliques

• Massage (and Self Massage)
  o Cross Fiber and Relaxation
    ▪ Gently cross fiber affected tissue

• Flexibility Training – Balance flexibility across lower extremities and pelvis
  o Active Isolated Stretching

• Core Activation and Strength – Core: four sides, a roof, and a floor
  o Floor of the Core (Pelvic Floor & Hip Flexors)
    ▪ Happy Baby & Eastern Squat
    ▪ Kegel Exercises for Males and Females
  o Roof of the Core (Respiratory Diaphragm)
    ▪ Diaphragmatic Breathing Techniques
  o Sides of the Core (Obliques, Abdominals, & Multifidus Muscles)
    ▪ Spinal Conservation Core Exercises

• Posterior Chain Strength
  o Thoraco-lumbar Fascia
    o Latissimus
      ▪ Lat Pull Down
    o Trapezius
      ▪ Rows
    o Glutes
      ▪ Squats
**Goal:** To re-model, heal, and stabilize tendinous tissue (3 weeks). During this phase of rehabilitation, PT should focus on treating the musculoskeletal systems above and below the surgical area, decreasing pain and swelling, and protecting the surgery site.

**Adjunctive – Continue with Cryotherapy, Massage, Flexibility, and Core Strengthening Training from Phase 1-A**

- **Joint Mobilization of Lumbar Spine** - Grade II III to improve segmental motion of lumbar vertebrae to support pelvic and core function, and to reduce pain.

- **Active Range of Motion of Bilateral Hip Joints using AIS: The Mattes Method**
  ***Avoid painful end ranges and excessive hip abduction / extension that will put stress on the surgery sites***
  - Psoas & Quad Stretch (Side Lying)
  - Distal & Proximal Gastrocnemius
  - Adductors
  - Lower Back (Double Leg Pelvic Tilt)
  - Oblique Gluteals

- **Low Level Proprioceptive Training for Foot Arch Function, Balance, and Gait**
  - Scrunches and Swipes
  - Double Leg Balance and progress patient to Single Leg Balance
  - Educate patient on return to normalized walking pattern
    (Patient may walk provided that gait pattern is normal and remains pain-free)
(Phase II)  Weeks 4-6

Goals: To improve soft tissue flexibility. To advance to core strengthening and mild-to-moderate cardiovascular re-training.

Adjunctive – Continue with Cryotherapy, Massage, Flexibility, and Core Strengthening Training from Phase 1-A

- **Advancing Proprioceptive Training**
  - Single Leg Balance activities including Cone Taps, Hurdles, & Hip Sliders
  - Unstable / Dynamic Surface added to progress difficulty (foam pad, pillow, tilt board)

- **Advancing Core Strengthening / Core Stability Exercises**
  - Pelvic Tilts, Planks, & Dying Bug

- **Isolated Muscle Progressive Resistive Exercises using Active Isolated Strengthening Protocols**
  - Straight Leg Raise for Hip Flexors with resist tube to sequence core activation
  - “Clamshells”
  - Side Lying Hip Abduction
  - Glute Bridges with resist tube
  - Side Lying Hip internal rotation
  - Wall Squats / Sits for Hamstrings & Quadriceps
  - Heel Raises for Calves

- **Straight Plane Motion of Weight Bearing and Body Weight Progressive Exercises**
  - Forward Lunges (not deep lunges)
  - Single Leg Pendulum Dead Lifts
  - Mountain Climbers

- **Cardiovascular Re-training**
  - Aqua Therapy – Treading Water (Egg Beaters), Hip Mobility
    - Swimming – Straight on kicking or side crawl
      - LIMITED OR NO BREAST STROKE
      - Slow and gentle flip turns
  - Elliptical
    - Use to pain-free tolerance; Monitor distance and time
  - Cycling
    - Seated – Best Option (activates the Gluteals more than recumbent)
    - Recumbent Bike – 2nd option
  - Walking – Outside on Stable Soft Surface
    - Treadmill Walking - If no other option*
  - Hockey – Single Line Skating (50% of maximum)
    - Gentle Turns
    - NO HOCKEY STOP
(Phase III) Weeks 7-8

Goals: To progress all flexibility and progressive resistance exercises to involve all three planes of motion. To return to running. To begin to mimic sport-specific activities in open kinetic chain and closed kinetic chain.

Adjunctive – Continue with Cryotherapy, Massage, Flexibility, and Core Strengthening Training from Phase 1-A

- Higher Level Proprioception Training
  - Sport cord agility
  - Sport forward / backward shuffle

- Dynamic Warm ups
  - World’s greatest stretch
  - Yoga
  - Inch Worms

- Core Strengthening / Core Stability Exercises
  - 3 way Planks (forward and on each side)
  - Prone Walkouts using a physioball
  - Russian Twists
  - Upper and lower extremities
  - Chops / Lifts
  - Palloff Press

- Triplanar Motion of Weight Bearing, Body Weight Progressive Exercises
  - Forward / Lateral Lunges
  - Braided Lunging
  - Sumo Walking
  - TRX Squats / Rows / Point pulls

- Cardiovascular Re-training
  - Return to running on even, flat ground
  - Line Jumps / Box Jumps
  - Ladder Drills
  - High Knees, Butt Kicks, Bounding, High Skipping, Bear Crawls
  - Hockey Training
    - 75% of Maximum
    - Straight Line Skating & Turns
(Phase IV) Weeks 9–12

Goals: To improve balance and proprioception. To improve power and velocity of sport-specific activities, indicating a safe return to sport at pre-injury level and beyond.

• Proprioception Training
  o Single-leg Balance Activities with weight resistance, such as Single Leg Cross Body Punches with 5 lb. weights
  o Single Leg Ladder / BOSU Drills

• Plyometrics
  o Shuttle Run
  o BOSU Drills
  o Box Jumps
  o Medicine Ball Tosses / Lunges
  o Weighted Rope Drills

• Sport-Specific Drills
  o Vertical leaping for volleyball
  o Box-out drills for basketball
  o Cone dribbling for soccer

• Cardiovascular Re-training
  o Progress patient to uneven surface running at an intensity that is required for their specific sport
  o Hill sprints
  o Cross country running
  o Track or hardwood sprints/running
  o Soccer is more endurance running, multiple miles
  o Track and field sprinting is short duration
  o Basketball is a good mixture; sprinting along with middle distance running

Primary Reference
Piriformis

What You Use: Inner thigh and hip rotators.

Pre-Stretch Positioning:
• Start lying on your back.

Starting Point:
• Lift your leg so that the thigh is at a 90° angle to the torso (vertical) with the knee bent 90°.
  • Rotate your foot in 45°.
  • The non-exercising leg is straight; turn it in and bring it across the midline of the body and bring the inside of the knee up towards your opposite armpit.
  • This is where you ended the oblique glute stretch.

Action:
• From the starting point, pivot at the hip and kick your foot around towards the elbow of the arm that’s pulling on the foot, working from the hip.
  • Keep the knee from bending past 95°.
  • Assist for no more than two seconds at the end of the movement and return all the way back to the starting point.

Where You Feel It: Deep in the outer hip/butt.

Primary Reference
Quadriceps

What You Use: Butt and the back of the thigh.

Pre-Stretch Positioning:
- Start lying on your side.
- Both legs are bent and brought up as close to the chest as possible.

Starting Point:
- The bottom hand grabs the bottom knee and holds it in place.
- The top hand grips the top foot/ankle or shin.

Action:
- Contract the rear thigh and butt and kick the leg back as far as possible.
- Make sure you don’t actively kick the foot into the hand as you go in motion (this might aggravate the knee).
- Gently pull on the foot/ankle to assist the movement.
- Gently assist at the end of the movement for not more than 2 seconds and release all the way back to the starting point.

Where You Feel It: Front of the thigh.

Primary Reference
Pre-Stretch Positioning:
• Start lying on your back.

Starting Point:
• Lock the leg, relax the foot.

Using the Strap
• The strap is looped around the mid-foot.

Action:
• Contract the front of the thigh and lift the leg while keeping your foot relaxed until a stretch is felt behind and/or above the knee.
• Assist the active effort by pulling on the strap, one strand in each hand.
• Gently assist at the end of the movement for not more than 2 seconds and release all the way back to the starting point.
• Make sure you straighten your leg all the way, every time, by squeezing the muscles around the front of the knee.

Where You Feel It: Back of the thigh/behind the knee.

Primary Reference
Calf Stretch I

What You Use: Front shin muscles.

Pre-Stretch Positioning:

- Start in a seated position, sitting up straight with the abs tight and shoulder blades together.

Starting Point:

- The knee is locked, foot is relaxed.

Using the Strap

- The strap is looped around the ball of the foot, one strand in each hand.

Action:

- Flex the foot and toes up towards the shin as far as you can.

- Assist the active effort by pulling on the strap, one strand in each hand.

- Gently assist at the end of the movement for no more than 2 seconds, then release all the way back to the starting point.

- Make sure you’re pulling with arms, not leaning back at the torso.

Where You Feel It: Calf.

Primary Reference
Cobra Stretch
What You Use: Mid-back

Pre-Stretch Positioning:
• Start lying prone on a mat or other comfortable surface.

Starting Point:
• Interlock your arms in front of your head, palms facing down.

Action:
• Perform the following:
  • Squeeze your glutes to stabilize the low back.
  • Take a deep breath in.
  • Look up and lift your upper torso off the table as far as possible.
  • Push your forearms and hands down as you simultaneously pull yourself forward, lengthening the spine as you move into extension.
  • Pause at the end of the movement for no longer than 2 seconds and release all the way back to the starting point.

Where You Feel It: Upper abs

Perform 2-3 sets of 10

Primary Reference

www.QuistMD.com
**Psoas**

*What You Use:* Butt and the back of the thigh.

**Starting Point:**

- Start in the lunge position with a pad underneath the knees.
- The forward knee is bent with the ankle somewhat forward of the knee.

**Action:**

- Contract the abs to prevent arching of the back.
- Make sure the hips are not rotated or hiked up on one side or the other.
- Squeeze the butt and upper thigh and lunge forward, extending the toes towards the wall behind you as if you were trying to push a button.
- Maintain an upright torso and an even hip girdle.
- Gently assist at the end of the movement for not more than 2 seconds and release all the way back to the starting point.

**Where You Feel It:** Front of the hip and inner thigh, maybe up into abs.

**Primary Reference**
Inner Thigh Stretch I
What You Use: Muscles of the outer thigh.

Pre-Stretch Positioning:
• Start lying on your back.

Starting Point:
• Lock the leg and relax the foot.
• Bring the other leg out about 45° and keep it turned out.

Using the Strap
• The strap is looped around the inside of the ankle.

Action:
• Lock the knee and bring the leg out as far as you can.
• Make sure the kneecap and toes point straight up towards the ceiling throughout the movement.
• Assist the active effort by pulling on the strap; the assisting arm is mimicking the “hitch-hiker’s” motion.
• Gently assist at the end of the movement for not more than 2 seconds and release all the way back to the starting point.
• Make sure you straighten your leg all the way, every time, by squeezing the muscles around the front of the

Where You Feel It: Inner Thigh.

Primary Reference
Double Leg Tilt or Happy Baby

Eastern Squat
3. (A, B) Side Lying External Hip Rotation:

To strengthen the six deep external rotators including the quadratus femoris, obturator externus, inferior gemellus, obturator internus, superior gemellus, and piriformis muscles. The outer gluteus maximus is also strengthened. From a side lying posture, keep the top hip in a vertical position, maintain the exercising leg at a 90-degree angle. Position the leg at the side edge of the table in order to lower the leg full range below the outer surface of the table. If the top (non-exercising) leg is supported on a thick pad level with the top of the pelvis, the exercise is most exacting. Contracting the external rotators, move the lower leg off the surface and upward as far as possible while maintaining a proper vertical pelvic posture. Lower the limb slowly under control. The muscles stretched are the internal rotators including the gluteus medius, gluteus minimus and tensor fascia latae. Add weight resistance as capable. Perform 3-5 sets of 10 repetitions.

4. (A, B) Side Lying Internal (Medial) Hip Rotation:

Outstanding exercise to strengthen the internal hip rotators including the gluteus medius, tensor fascia latae and gluteus minimus and stretch the deep external hip rotators and outer gluteus maximus. From a side lying posture, position the body at the edge of the table supported by a thick pad to keep the top thigh level with the pelvis and enable the exercising leg to move through a full range of motion downward, well below the level of the table. Keep the hip in a vertical position, maintaining the exercising leg at a 90-degree angle. Contract the internal hip muscles and move the lower leg upward as far as possible. Slowly return lower leg to starting position and repeat. Prevent the pelvis from moving forward or backward during the exercise. Add resistance as capable. Perform 3-5 sets of 10 repetitions.

Primary Reference
Sports Hernia Algorithm

Patient presents with groin pain

History and physical examination

Other diagnosis more likely

Investigate other causes of groin pain

Diagnostic uncertainty

Imaging: Ultrasound Scan +/- MRI Scan

High index of suspicion for sports hernia

Radiological features consistent with sports hernia

Trial of non-operative management

Successful

Referral to Groin Surgeon

Pre-operative physio

Surgery

Open

Laparoscopic

Post-operative physio

Treatment failure; ongoing symptoms

Resumption of activity to pre-injury level

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