South Shore Hospital

Orthopedic, Spine and Sports Therapy

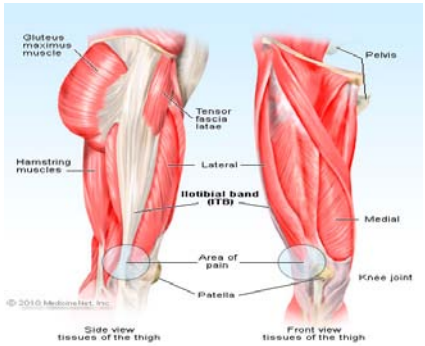
Iliotibial Band Pain

Anatomy and Biomechanics

The hip is a ball and socket joint that occurs between the head of the femur (ball) and the acetabulum of the pelvis (socket). It is protected by several layers of muscles and ligaments. One of the structures about the hip that is often a source of pain and dysfunction is the Iliotibial band (ITB). The ITB is a band of connective tissue (fascia), that begins at the outer portion of the pelvis and travels along the outside of the thigh, eventually connecting to the outside of the knee.

The muscle that connects to the ITB is known as the Tensor fascia latae muscle. Its primary action is to abduct (move out to the side) and medially rotate (turn in) the hip. It also works as a stabilizer for hip and knee during weight bearing activities.

The ITB can become painful anywhere along its distribution on the outside of the thigh, but it is most commonly aggravated near its insertion points at the knee or hip. This pain is often times the result of excessive friction created by the ITB rubbing over top of boney structures near these insertion points. This abnormal friction is often related to the performance of repetitive activity (cycling, hiking, running, etc) in the presence of poor biomechanical alignment or movement pattern dysfunction (poor form). Pain can occur near hip joint and/or along the shaft of the femur to the outside part of the knee. Common causes can come from overuse of the muscle with such activities as running/cycling/hiking/weight lifting (especially squats), biomechanically (i.e. leg length discrepancy, bow-legged, high/low arches, excessive low leg rotation, poor hip stability/mechanics) or poor form with movement (i.e. uneven running surfaces, excessive up/down hill, toe in when biking).



Treatment Options

Regardless of the specific mechanism (alignment, weakness, repetitive stress) ITB pain is generally caused by the overloading or overworking of the soft tissue about the hip and/or knee joint. As the pain, inflammation and underlying causes of the ITB pain are treated, the physician and/or physical therapist will likely recommend that the patient refrain from participation in the activities that most provide stress to injured joint. This does not always mean that the patient must stop all exercise. The patient should consult with the physician and/or physical therapist to determine individualized exercise guidelines and restrictions.

Rehabilitation Philosophy

Physical therapy is often recommended for treatment of pain and dysfunction associated with the ITB, be it at the knee (ITB Syndrome) or hip (tendonitis, bursitis, "Snapping Hip Syndrome"). The physical therapist will evaluate the patient's mobility, flexibility and strength with the purpose of determining the underlying cause of the abnormal stress on the ITB. The patient will be counseled on which activities he or she can safely continue and which should be avoided. The physical therapist will teach the patient the proper exercises to reduce stress on the ITB. In most cases this will include strengthening muscles about the hip and knee that are weak and stretching ones that are tight.

Treatment Progression

Physical therapy will likely occur through three phases of rehabilitation (inflammatory/maximum protection phase, sub-acute/moderate protection phase, and return to sport and activity/minimal protection phase). The therapist will choose the right course of action dependant on your individual goals.

Rehabilitation

****The following is an outlined progression for rehab. Advancement from phase to phase as well as specific exercises performed should be based on each individual patient's case and sound clinical judgment by the rehab professional. ****

Phase 1 (Inflammatory Phase)

Goals

Control pain and inflammation
Begin pain free flexibility exercises
Establish pain free knee & hip ROM

Recommended Exercises

Range of Motion and Flexibility

- Cycle with minimal resistance (if pain free)
- Pain free hip or knee active range of motion exercises (based on proximal or distal involvement)
- Pain free lower extremity stretching (based on individual assessment)
  - IT Band/ Tensor Fascia Latia (TFL)
  - Hamstring
  - Hip rotators
  - Iliopsoas
  - Gluteus maximus

Guidelines

Perform range of motion exercises daily. Do 2-3 sets of 15-20 Reps. Perform stretching program daily. Hold stretches for 30 seconds and perform 2-3 repetitions of each.

Phase 2 (Sub-acute Phase A)

Goals

Continued protection of injured tissue
Continue to improve flexibility
Begin to strengthen areas of weakness/instability

Recommended Exercises

Range of Motion and Flexibility

- Cycle (slow progression of resistance)
- Continue flexibility from Phase 1

Strength

- Begin open chain strengthening (based on strength assessment)
  - Bridging
  - Clamshells

Straight leg raise
Hip abduction
Hip extensors
Hip external rotators
Single Leg Stance (SLS) Drills

Guidelines

Perform stretching program daily. Hold stretches for 30 seconds and perform 2-3 repetitions of each.
Cycle program should be performed no more that 3-5 times a week for 20-35 minutes.
Perform strengthening exercises daily. Do 2-3 sets of 15-20 Reps.

Phase 3 (Sub-acute Phase B)

Goals

Continue to avoid exacerbation of symptoms
Continue to maximize return of strength and flexibility
Establish closed chain strength and stability

Recommended Exercises

Range of Motion and Flexibility

Continue cycle with progressive loading, add walking or elliptical program
Continue lower extremity stretching from Phase 1 and 2

Strengthening

Continue progression of open chain program with ankle weights
Can add gym equipment (Leg press, Multi-hip)
Pain free closed chain hip strengthening (Step-Up Progressions, Static and Dynamic Lunge Progressions, Etc)
Continued progression with SLS and proprioceptive drills (add foam, balance disc, etc)
Progressive core stability based on individual needs (plank/side plank progressions, etc)

Guidelines

Perform stretching program daily. Hold stretches for 30 seconds and perform 2-3 repetitions of each.
Cardio program should be performed no more that 3-5 times a week for 20-45 minutes.
Perform strengthening exercises 3 times a week. Do 2-3 sets of 15-20 Reps.

Phase 4 (Return to Sport/Activity Phase)

Goals

Continue to avoid ITB overload
Progress with single leg strengthening
Achieve adequate strength and flexibility to return to activity

Recommended Exercises

Flexibility

Continue daily stretching

Cardio

Continue cycle, walking, elliptical

Return to running progression (outlined by physician or physical therapist)

Strengthening

Continue SLR program and gym equipment progression

Continue to progress closed chain hip strengthening (Step-Up Progressions, Static and Dynamic Lunge Progressions, Etc)

Progressive single leg strengthening (single leg squat, split squat, single leg dead lift, single leg ER)

Plyometric Program: outlined by physical therapist (based on patient's activity/sport)

Return to Sport

Work with physician or physical therapist to Outline Progressive Return to Sport

Guidelines

Perform stretching program daily. Hold stretches for 30 seconds and perform 2-3 repetitions of each.
Cardio program should be progressed in preparation for return to sport.
Perform strengthening exercises 3 times a week. Do 2-3 sets of 15-20 Reps

Phase	Emphasis	Recommended Exercises	Guidelines
Phase 1 Acute Phase	*Control pain and inflammation *Re-establish normal ROM *Establish quadriceps activation *Begin pain free Flexibility program	**ROM and Flexibility** Cycle (if pain free motion) Pain free hip or knee active range of motion exercises (based on proximal or distal involvement) Lower Extremity Stretching • Rectus Femoris/Illiopsoas • IT Band/Tensor Fascia Latia (TFL) • Hamstring • Hip Rotators • Gluteus maximus *based on individual assessment	*ROM daily 2-3 sets of 15-20 reps *Stretching program daily 2-3 repetitions of 30 seconds
Phase 2 Sub-acute Phase A	* Continued protection of injured joint *Continue to improve flexibility *Begin to strengthen areas of Weakness/instability	**ROM and Flexibility** Cycle (slow progression of resistance) Continue flexibility from Phase 1 **Strength** Begin open chain strengthening • Bridging • Clamshells • Straight leg raise • Hip abduction • Hip extensors • Hip external rotators • Single leg stance (SLS) drills *based on individual assessment	* Stretching program daily 2-3 repetitions of 30 seconds *Cardio program should be performed no more that 3-5 times a week for 20-35 minutes. *Perform strengthening exercises daily 2-3 sets of 15-20 Reps
Phase 3 Sub-acute Phase B	* Continue to avoid exacerbation of symptoms *Continue to maximize return of strength and flexibility *Establish closed chain strength and stability	**Flexibilty** Continue lower extremity stretching from Phase 1 and 2 **Cardio** Cycle with Progressive Resistance Walking/elliptical (if pain free) **Strengthening** Continue OKC progression Can add gym equipment (Leg press, Multi-hip) Pain free closed chain hip strengthening (Step-up progression, static/dynamic lunge progression, etc) Continued progression with SLS and proprioceptive drills (add foam, balance disc, etc.) Progressive core stability (plank/side plank progressions, etc.) *based on individual assessment	* Stretching program daily 2-3 repetitions of 30 seconds *Continue to stress proper gait * Cardio program should be performed no more that 3-5 times a week for 20-45 minutes. *Perform strengthening exercises 3 times a week 2-3 sets of 15-20 Reps.

Phase 4 Sport Specific Phase	* Continue to avoid ITB overload *Progress with single leg strengthening *Achieve adequate strength and flexibility to return to activity	**Flexibility** Continue Daily Stretching **Cardio** Cycle, elliptical, walking Begin Return to Running Progression **Strengthening** Continue OKC Program Continue Gym Equipment Progression Continue Step-Up Progressions (Step-up progression, static/dynamic lunge progression, etc) Progressive Single Leg Strengthening (single leg squat, single leg dead lift) Plyometric Program: outlined by physical therapist based on activity/sport **Return to Sport** Outlined by PT or MD *based on individual assessment	* Stretching program daily 2-3 repetitions of 30 seconds *Cardio program should be progressed in preparation for return to sport. *Perform strengthening exercises 3 times a week. Do 2-3 sets of 15-20 Reps

***Reviewed by Michael Geary, MD**