Iliotibial Band Friction Syndrome in Long Distance Runners

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Purpose: To identify contributing factors & effective treatment strategies for the management of grade 3 & 4 iliotibial band friction syndrome in distance runners, based on evidence found in the literature.

Definition: Iliotibial band friction syndrome (ITBFS) is defined as an overuse injury caused by chronic rubbing of the iliotibial band over the lateral femoral epicondyle, causing inflammation. This disorder can be classified into four grades of severity.

Grade 1: Pain starts after the run, but does not affect performance
Grade 2: Pain occurs during run, but does not affect performance
Grade 3: Pain occurs during run and does affect performance
Grade 4: Pain prevents run

Prevalence: ITBFS accounts for 1.6-12% of all over use injuries in runners. One study found 8% of 2002 runners, another found 4.3%, with 83% of them between ages 20-39. Training errors were found to be associated with 42% of ITBFS cases, with single severe sessions accounting for 55% of the errors.

Anatomy: The ITB extends from the gluteus maximus, medius, tensor fascia lata and lateral intermuscular septum to the linea aspera of the posterior femur to Gerdy’s tubercle on the proximal tibia, iliotibial band and posterior expansion to the biceps femoris. In the literature friction or impingement occurs at ~30° of knee flexion, which is referred to as the impingement zone.

Etiology:

Intrinsic factors include:
- prominent lateral femoral epicondyle
- tight iliotibial band
- excessive subtalar joint pronation
- excessive genu varum
- leg length discrepancy
- increased forefoot varus
- increased Q angle
- weak hip abductors
- weaker bilaterally in knee flexion and knee extension
- thicker iliotibial band on MRI scan
- diminished flexibility

Extrinsic factors include:
- sudden increases in mileage
- training on transverse grades
- excessive downhill running
- running shoes with excessive lateral wear
- over striding
- running on hard surfaces

Clinical Practice Guideline

Sub-acute Phase ( >10 days )

1. Activity Modification
   - Decrease weekly mileage
   - Decrease duration of running workouts
   - Increase training pace of runs
   - Avoid downhill running
   - Alternative non-weight bearing aerobic conditioning activities
     i. Swimming (can be kick-free)
     ii. Cycling
     iii. Water running

2. Control pain and residual inflammation
   - NSAID – Naproxen for 7 – 10 days
   - Ice – 3x/day for 10’ over the lateral femoral condyle

3. Biomechanical correction
   - Gait analysis & correction
   - Footwear evaluation
   - Heel wedge/Foot orthosis to control excessive pronation

4. Stretching
   - IT1 self-stretch – 6x/day held for 30’
   - Gluteus Maximus, illeposus, rectus femoris, hamstrings, and gastrocnemius-soleus stretching may be necessary as per the physical exam.

5. Strengthening
   - Hip Abductor – 1 set of 15 reps progress to 3 set of 30 reps
   - Side-lying single leg raise with bent knee
   - Side-lying single leg raise in external rotation of the hip
   - Step downs
   - Single leg squat
   - Side-side lunge – start with 1’ progress to 2 sets of 2’

6. Return to Activity
   - Education on proper warm up and cool down
   - 2-3 training sessions per week of 15’
   - Gradual increase total duration by 10%/week
   - Build up to 40’ continuous run without discomfort
   - Avoid prolonged workouts
   - Avoid hills
   - Cut speed workouts in half