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Iliotibial Band Syndrome

The iliotibial band is the tendon attachment of hip muscles into the lower leg (tibia) just below the knee on the lateral (outer) side of the front of the leg. The iliotibial band (tendon) passes along the outside of the knee over the lateral femoral epicondyle (bony prominence) where there is a bursa sac between the bone and the tendon. The iliotibial band tendon moves back and forth over the femoral epicondyle along the lateral(outer) knee as the knee flexes and extends passes in front and behind it. The bursa functions to reduce friction and wear of the tendon against the bone. In this condition of iliotibial band syndrome, overuse, most often from running or biking, causes excessive friction of the iliotibial band over the lateral femoral epicondyle, resulting in inflammation and pain from the bursa (bursitis), tendon (tendinitis), or both.



Frequent Signs and Symptoms

- Pain, tenderness, swelling, warmth, or redness over the iliotibial band at the outer knee (above the joint); may travel up or down the thigh or leg
- Initially, pain at the beginning of an exercise that lessens once warmed up; eventually, pain throughout the activity, worsening as the activity continues; pain may cause the athlete to stop in the middle of training or competing.
- Pain that is worse when running downhill or down stairs, on banked tracks, or next to the curb on the street
- Crepitation (a crackling sound) may be present when the tendon or bursa is moved or touched

Etiology (Causes)

Iliotibial band syndrome is caused by excessive friction of the iliotibial band and the underlying bursa due to repetitive knee-bending activities. This is an overuse injury, although direct trauma to the outer knee may cause the bursa to get inflamed. Often the deceleration of running down hills may lead to the excessive friction.



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Risk Factors

- Sports with repetitive knee-bending activities, such as distance running and cycling
- Incorrect training techniques, including sudden changes in the amount, frequency, or intensity of the training, as well as inadequate rest between workouts
- Poor physical conditioning (strength and flexibility), especially tight iliotibial band and weak hip abductor muscles
- Inadequate warm-up before practice or play
- Bow legs
- Arthritis of the knee

Prevention

- Appropriately warm up and stretch before practice or competition.
- Allow time for adequate rest and recovery between practices and competition.
- Maintain appropriate conditioning:
 - Knee and thigh flexibility (especially iliotibial band)
 - Muscle strength and endurance
 - Cardiovascular fitness
- Use proper training technique, including reducing mileage run, shortening stride, and avoiding running on hills and banked surfaces.
- Orthotics may be helpful.

Outcomes

This condition is usually curable within six to 12 weeks if treated appropriately with conservative treatment and resting of the affected area.

Potential Complications

- Chronically inflamed tendon and bursa, causing persistent pain with activity that may progress to constant pain
- Recurrence of symptoms if activity is resumed too soon, with overuse, with a direct blow, or with poor training technique
- Inability to complete training or competition



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Treatment Considerations

Initial treatment consists of medication and ice to relieve the pain, stretching and strengthening exercises (particularly the iliotibial band), and modification of the activity that initially caused the problem. These all can be carried out at home, although referral to a physical therapist or athletic trainer for further evaluation and treatment may be helpful. Orthotics (arch supports) for the shoe in those with tight iliotibial bands may be prescribed to reduce friction to the bursa. A knee sleeve or bandage may help keep the tendon and bursa warm during activity and reduce some symptoms. Training techniques can be altered by lessening the amount of the training activity, changing the stride length, or avoiding running on hills or stairs, changing the direction you run on a circular or banked track, or changing the side of the road you run on if you run next to the curb in the same direction all the time. Cyclists may need to change the seat height or foot position on their bicycles. An injection of cortisone into the bursa may be helpful and recommended. Surgery to remove the inflamed bursa and part of the scarred or inflamed iliotibial band is usually only considered after at least six months of conservative treatment.

Potential Medications

- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within seven days before surgery), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.
- Pain relievers are usually not prescribed for this condition, although your physician will determine this. Use only as directed and only as much as you need.
- Cortisone injections can reduce inflammation.

Modalities (Heat and Cold)

- Cold is used to relieve pain and reduce inflammation. Cold should be applied for 10 to 15 minutes every two to three hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage with a cloth between the ice and your skin to prevent burning /freezing your skin.
- Heat may be used before performing stretching and strengthening activities prescribed by your physician, physical therapist or athletic trainer. Use a heat pack or a warm soak.

Notify My Office If Symptoms Worsen

