

Iliotibial Band Syndrome (ITBS)

What is it?

The Iliotibial band is the tendon attachment of the *tensor fascia lata* and the *gluteus maximus* muscles. The tendon inserts into the upper leg (tibia) just below and on the outer portion of the knee. There is also a bursa (fluid-filled sac) underneath the tendon as it passes over a “bony bump” on the outer side of the knee (lateral femoral condyle). The bursa functions to reduce friction and wear of the tendon against the “bony bump”. In this condition, repetitive and/or excessive friction at this bump results in inflammation and pain of the bursa (bursitis), tendon (tendonitis), or both.



Signs and Symptoms of Iliotibial Band Syndrome

- Pain, tenderness, swelling, and sometimes crepitus (clicking or crackling sound) over the outer part of the knee
- Pain reproduced with running, ascending or descending stairs, and possibly biking
- Pain with pressure applied to the outer side of the knee
- Pain may be worse after the knee bends about 20 degrees and then lessen after the Iliotibial band passes over the “bony bump” as the knee continues to bend.

Possible Causes of Iliotibial Band Syndrome

- Tight *gluteus maximus* and *tensor fascia lata* hip muscles.
- Weak hip and/or gluteal muscles
- Improper or old footwear
- Improper training program
 - too far, too frequently
 - insufficient rest periods between bouts of exercise
 - sudden increases in running mileage/duration/frequency (i.e. new soldiers to unit)

Prevention of Iliotibial Band Syndrome

- Proper warm up before exercise
- Proper footwear (see Appendix E, FM 21-20)
- Develop a proper training program (see sections 1-4 through 1-7 of FM 21-20).
- Avoid violating the principles of exercise, especially *Progression* and *Recovery*.

Prognosis

The pain and inflammation associated with Iliotibial Band Syndrome will typically resolve with conservative management of rest, anti-inflammatory medication and ice over the course of about 4-6 weeks. However, if the causing factors are not addressed the condition likely will return upon resuming the previous level of activity and possibly perpetuate into chronic pain and long term limited function.

Self Management

- Decrease level of aggravating physical activity and seek cross training opportunities.
- Ice massage – freeze paper cups full of water and once frozen tear off top edges of the cup to reveal approximately 1 inch of ice. Rub this ice over painful area until numb. Numbness will usually occur after 5-10 minutes and treatment should not exceed 10 minutes to avoid localized cold injury.
- Stretching *Tensor fascia lata* muscle, Iliotibial band and *gluteus maximus* muscle. Stretches should be held 20-30 seconds and performed 5-10 repetitions several times a day.
- Anti-inflammatory medication (For therapeutic effects, anti-inflammatory medications need to be taken regularly over several weeks)
- Proper footwear and/or insoles.
- Slow progression back to previous activity.

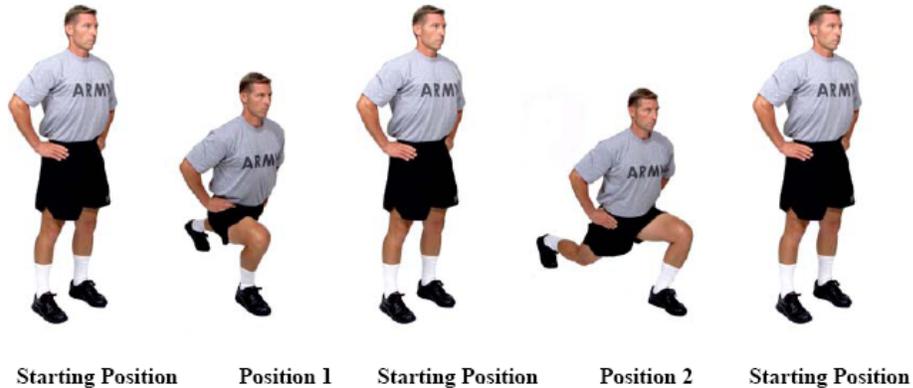
Seek medical care if symptoms fail to improve after 2-4 weeks of conservative self management.

Exercise 2: The Rear Lunge

Purpose: This exercise develops flexibility of the hip flexors and trunk muscles.

Starting Position: Straddle stance, hands on hips.

- On the command, “*Ready, STRETCH*”, take an exaggerated step backward with the left leg, touching down with the ball of the foot. This is the same position as count 1 of The Rear Lunge in Conditioning Drill 1. Hold this position for 20 seconds.
- On the command, “*Starting Position, MOVE*”, assume the starting position.
- On the command, “*Change Position, Ready, STRETCH*”, take an exaggerated step backward with the right leg, touching down with the ball of the foot. This is the same position as count 3 of The Rear Lunge in Conditioning Drill 1. Hold this position for 20 seconds.
- On the command, “*Starting Position, MOVE*”, return to the starting position.



Check Points:

- Maintain straightness of the back by keeping the abdominal muscles tight throughout the motion.
- After the foot touches down on positions 1 and 2, allow the body to continue to lower.
- Lunge and step in a straight line, keeping the feet directed forward. Viewed from the front, the feet are shoulder width apart, both at the starting position, and at the end of positions 1 and 2.
- Keep the forward knee over the ball of the foot on positions 1 and 2.

Exercise 3: The Extend and Flex

Purpose: This exercise develops flexibility of the hip flexors, abdominals, hip (Position 1 - extend) and the low back, hamstrings and calves (Position 2 -flex).

Starting Position: The front leaning rest position.

- On the command, “*Ready, STRETCH*”, lower the body, sagging in the middle, keeping the arms straight and look upward. Hold this position for 20 seconds.
- On the command, “*Starting Position, MOVE*”, assume the starting position.
- On the command, “*Change Position, Ready, STRETCH*”, slightly bend the knees and walk the hands back toward the legs. Straighten the legs and try to touch the ground with the heels. Keep the feet together and hold this position for 20 seconds.
- On the command, “*Starting Position, MOVE*”, return to the starting position.



Starting Position



Position 1



Starting Position



Position 2



Starting Position

Check Points:

- In position 1, the thighs and pelvis rest on the ground. Relax the back muscles while bearing the bodyweight through the straight arms. Toes point to the rear.
- In position 2, the legs are straight and the arms are shoulder width apart, palms down on the ground.
- Feet are together throughout the exercise.

Exercise 4: The Thigh Stretch

Purpose: This exercise develops flexibility of the front of the thigh and the hip flexor muscles.

Starting Position: Seated position, arms at sides and palms on the floor.

- On the command, “*Ready, STRETCH*”, roll onto the right side and place the right forearm on the ground, perpendicular to the chest. The right hand makes a fist on the ground with the thumb side up. Grasp the left ankle with the left hand and pull the left heel toward the buttocks and pull the entire leg rearward. Push the left thigh further to the rear with the bottom of the right foot. Hold this position for 20 seconds.
- On the command, “*Starting Position, MOVE*”, assume the starting position.
- On the command, “*Change Position, Ready, STRETCH*”, lay on the left side and place the left forearm on the ground, perpendicular to the chest. The left hand makes a fist on the ground with the thumb side up. Grasp the right ankle with the right hand and pull the right heel toward the buttocks and pull the entire leg rearward. Push the right thigh further to the rear with the bottom of the left foot. Hold this position for 20 seconds.
- On the command, “*Starting Position, MOVE*”, return to the starting position.



Starting Position



Position 1



Starting Position



Position 2



Starting Position

Check Points:

- Keep the abdominal muscles tight throughout this stretch in order to keep the trunk straight.
- Do not pull the heel forcefully to the buttock if there is discomfort in the knee joint.

Exercise 5: The Single-leg Over

Purpose: This exercise develops flexibility of the hips and lower back muscles.

Starting Position: Supine position with arms sideward, palms down.

- On the command, “*Ready, STRETCH*”, turn the body to the right, bend the left knee to 90-degrees over the right leg, and grasp the outside of the left knee with the right hand and pull toward the right. Hold this position for 20 seconds.
- On the command, “*Starting Position, MOVE*”, assume the starting position.
- On the command, “*Change Position, Ready, STRETCH*”, turn the body to the left, bend the right knee to 90-degrees over the left leg, and grasp the outside of the right knee with the left hand and pull toward the left. Hold this position for 20 seconds.
- On the command, “*Starting Position, MOVE*”, return to the starting position.



Starting Position



Position 1



Starting Position



Position 2



Starting Position

Check Points:

- At the starting position, the arms are directed to the sides at 90-degrees to the trunk, the fingers and thumbs are extended and joined.
- In position 1, keep the left shoulder, arm, and hand on the ground.
- In position 2, keep the right shoulder, arm, and hand on the ground.