

QUICK SOLUTIONS FOR ILIOTIBIAL BAND SYNDROME

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Definition

Iliotibial band syndrome (ITBS) is the most common cause of lateral knee pain in runners, with an incidence as high as 12% of all running-related overuse injuries. ITBS is believed to result from recurrent friction of the iliotibial band (ITB) sliding over the lateral femoral epicondyle.

What Causes ITBS?

-Mileage and knee flexion/extension weakness. Studies have found that runners with ITBS were less experienced and were doing greater weekly mileage and a greater percentage of their training on the track compared with noninjured runners. Also, injured runners had weaker knee flexion and knee extension bilaterally.

-Compensatory pronation. Runners with ITBS often have genu varum and/or tibia vara (bow legged deformity), resulting in compensatory pronation. Leg-length discrepancies are also thought to contribute to ITBS. This can be secondary to a true anatomic discrepancy or functionally induced by training and running biomechanics.

-Hip abductor weakness. Runners with ITBS have significant weakness in the hip abductors of their affected limb.

Treatment

-Activity modification Running and cycling should be avoided in the acute phase to reduce repetitive stress. Swimming (using only arms) with a pool buoy between the legs is usually the only activity permitted during the acute phase.

-Trigger point therapy, deep stripping massage, specific stretches, and heat can release trigger points and associated contracture of the *gluteus minimus*, *vastus lateralis* and *biceps femoris* muscles.

-Contract-relax exercises in three bouts of a 7-sec. contraction followed by a 15-sec. stretch for the iliopsoas, rectus femoris, and

gastrocnemius-soleus muscles.

-Gait and treadmill running analyses to screen for dynamic muscle imbalance or weakness contributing to the injury.

Next Month: Shin Splints

Figure 5: Courtesy of Michael Fredericson, MD, and Len DeBenedictis, MS, CMT

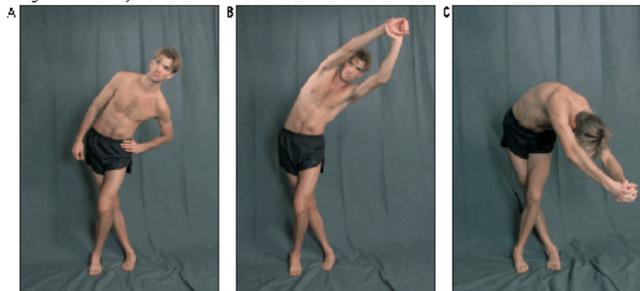


FIGURE 5. Rehabilitation starts with contract-relax exercises to lengthen the shortened iliotibial band. The patient performs the following stretches in three bouts of a 7-second submaximal contraction followed by a 15-second stretch. Patients can begin all stretches at once, but they should ease gently into each stretch and not push beyond painful barriers. To perform the standing stretch (a) the patient stands upright, using a wall for balance if needed. The symptomatic leg is extended and adducted across the noninvolved leg. The patient exhales and slowly flexes the trunk laterally to the opposite side until a stretch is felt on the side of the hip. Extending or tucking the pelvis can vary the area being stretched. The arm-overhead standing stretch (b) accentuates the stretch by increasing lateral trunk flexion. Further progress is made by teaching the patient to bend downward and diagonally (c), while he or she reaches out and extends with clasped hands.

Figures 2-11: Courtesy of Michael Fredericson, MD, and Len DeBenedictis, MS, CMT



FIGURE 6. To perform the supine rope stretch, the patient lies on his or her back with a strap or rope around the foot of the involved leg. The patient stabilizes the rope with the hand on the same side, using the opposite hand to pull the leg across the unaffected leg while keeping the pelvis on the ground.

Figure 7: Courtesy of Michael Fredericson, MD, and Len DeBenedictis, MS, CMT



FIGURE 7. Iliotibial band stretching can be done with a foam bolster to address other tight areas. While supporting the upper body with the hands on the floor, the patient reclines on a 3- to 6-in. foam bolster placed under the side of the involved leg, which is held straight. The patient crosses the uninvolved leg over involved leg and rolls over the bolster from hip to knee, emphasizing tight areas.

Figure 9: Courtesy of Michael Fredericson, MD, and Len DeBenedictis, MS, CMT

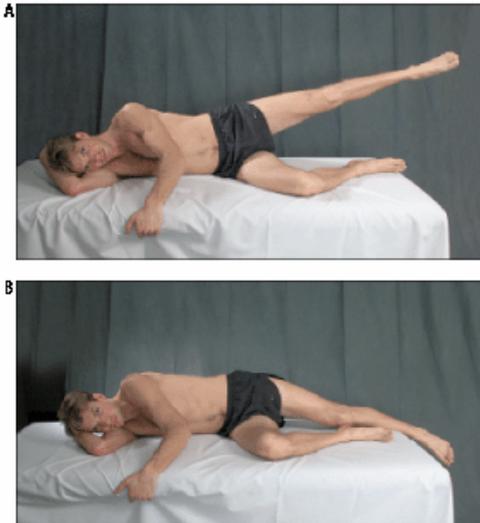


FIGURE 9. Side-lying leg lifts are the first exercise performed to strengthen the gluteus medius muscle. The patient is instructed to keep the lower leg flexed for balance, the abdominal muscles braced, and the upper leg slightly extended and externally rotated. With the leg slightly extended and internally rotated, the patient abducts the affected leg 30° (a), holding the position for 1 second. The leg is slowly lowered into maximal adduction (b) and held 1 second. Patients start all strengthening exercises with one set of 15 repetitions. Over several weeks, they build to a total of 3 sets of 30 repetitions. Repetition increase by five per day, provided patients have no soreness the next

Figure 10: Courtesy of Michael Fredericson, MD, and Len DeBenedictis, MS, CMT



FIGURE 10. Step-down exercises are learned in front of a full-length mirror so that the patient can monitor proper form. The goal is to maintain pure sagittal plane motion, which can be accomplished by asking the patient to squat while keeping the knee over the second toe, maintaining a stable pelvis, and avoiding excessive hip adduction or internal rotation.

Figure 11: Courtesy of Michael Fredericson, MD, and Len DeBenedictis, MS, CMT



FIGURE 11. Patients can progress to pelvic drops to strengthen the gluteus medius once they have mastered single-leg squats. To begin, the patient stands on a step with the involved leg, holding the wall or a stick for support if needed. With both knees locked, the patient lowers the uninvolved pelvis toward the floor by shifting body weight to the inside foot of the involved leg, creating a swivel action at the hip that lowers the foot by a couple inches. The patient returns to the starting position by contracting the gluteus medius on the involved side. Exercising in front of a mirror will help the patient learn proper technique.

For more information on this article, free consultation and to sign up for gait analysis call **Chiro-Health, Inc** at (415) 546-1461 or on the web at www.chirohealthsf.com.