

A CYCLIST'S GUIDE TO
INJURY
 PREVENTION

Thigh & knee

Iliotibial band (ITB) syndrome

IN THIS FOUR-PART series, physio and osteopath *Lewis Wood* helps cyclists assess their aches and nip niggles in the bud. First up, IT band friction

After a long ride, many cyclists suffer from pain and tenderness across the outer part of the thigh. If these symptoms last longer than a couple of days, ie longer than usual post-ride muscle soreness (a day or two), the problem may be excessive friction of the connective tissue across the outer quadriceps muscle, known as iliotibial band (ITB) syndrome.

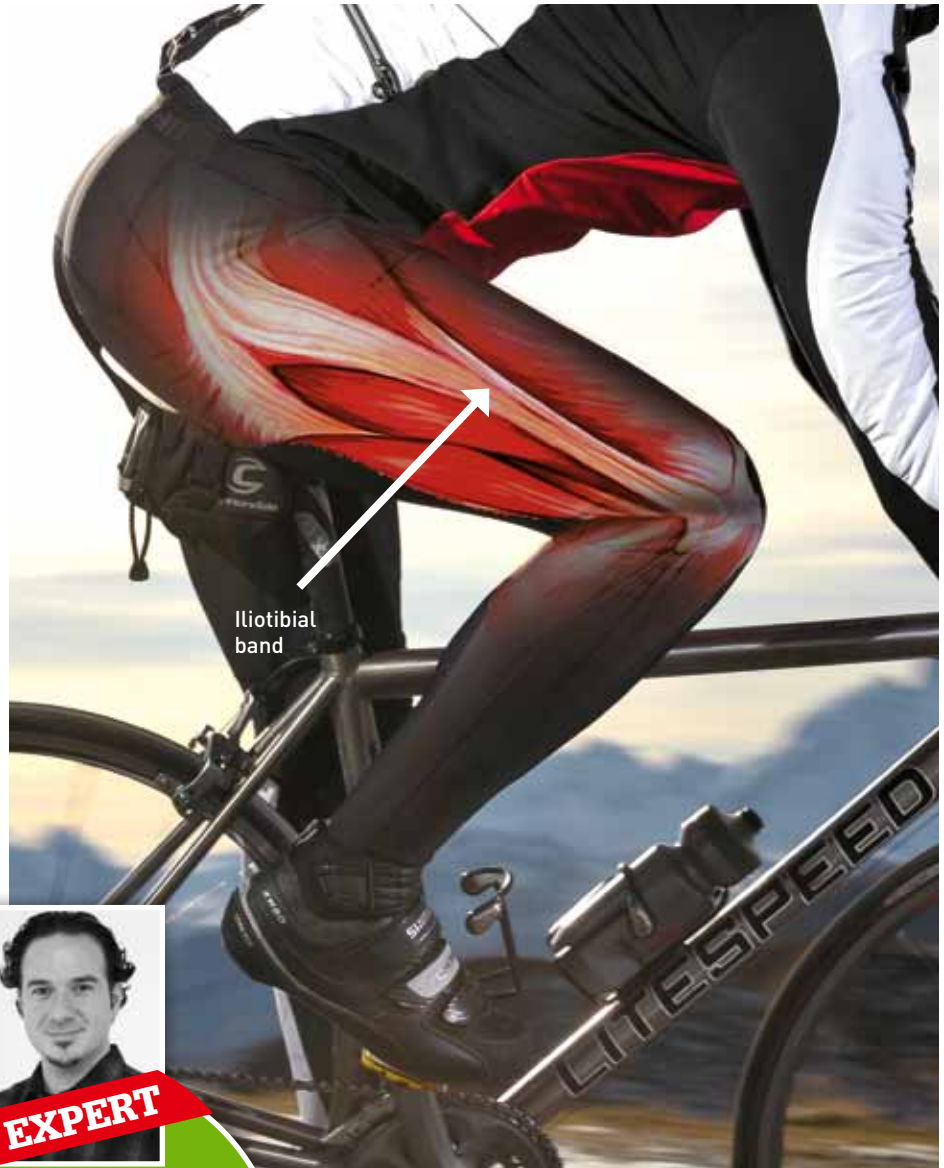
When cyclists feel tenderness and pain across the outer part of their knee, the lower insertion of the ITB inflames causing 'runner's knee'. Ignore the name, as this well-known condition does not spare cyclists. In the worst scenario, this lateral knee joint pain is severe and coincides with moderate joint swelling, calling a halt to training and necessitating weeks if not months of rest.

In advanced conditions, knee joint pain is aggravated by cycling (even short distances), walking downhill, going down stairs, etc. The knee feels stiff after inactivity, for example, after several hours of sitting still or driving long distances.

ITB pain can afflict seasoned cyclists, as well as those new to the sport, as there are multiple causes, and symptoms quickly become chronic. Cyclists with this condition are often surprised that, despite the discomfort/pain, they still have full movement of their knee joint and can bend and straighten their knee without any problems.

What is the iliotibial band?

The ITB is a tendinous connective tissue tract that originates on the iliac crest (hip bone), where gluteal maximus (the largest gluteal muscle) and tensor fascia latae (a small hip flexor) muscles insert into the tract.



THE EXPERT

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Interestingly, the IT band is continuous with the lateral intermuscular septum beneath it, which is one of the areas to focus on when trying to resolve the condition.

The ITB continues down, narrowing as it attaches to the lateral condyle of the tibia (the outer

part of your lower leg bone), with fibres also extending over to the front of the patella (knee cap). As well as flexing the thigh at the hip, moving it sideways and causing internal rotation, it has a vital role in stabilising the lateral aspect of the knee. That's why this condition can cause — or be caused by — mal-tracking of the patella (knee

“Untreated, IT band pain can swiftly become severe”

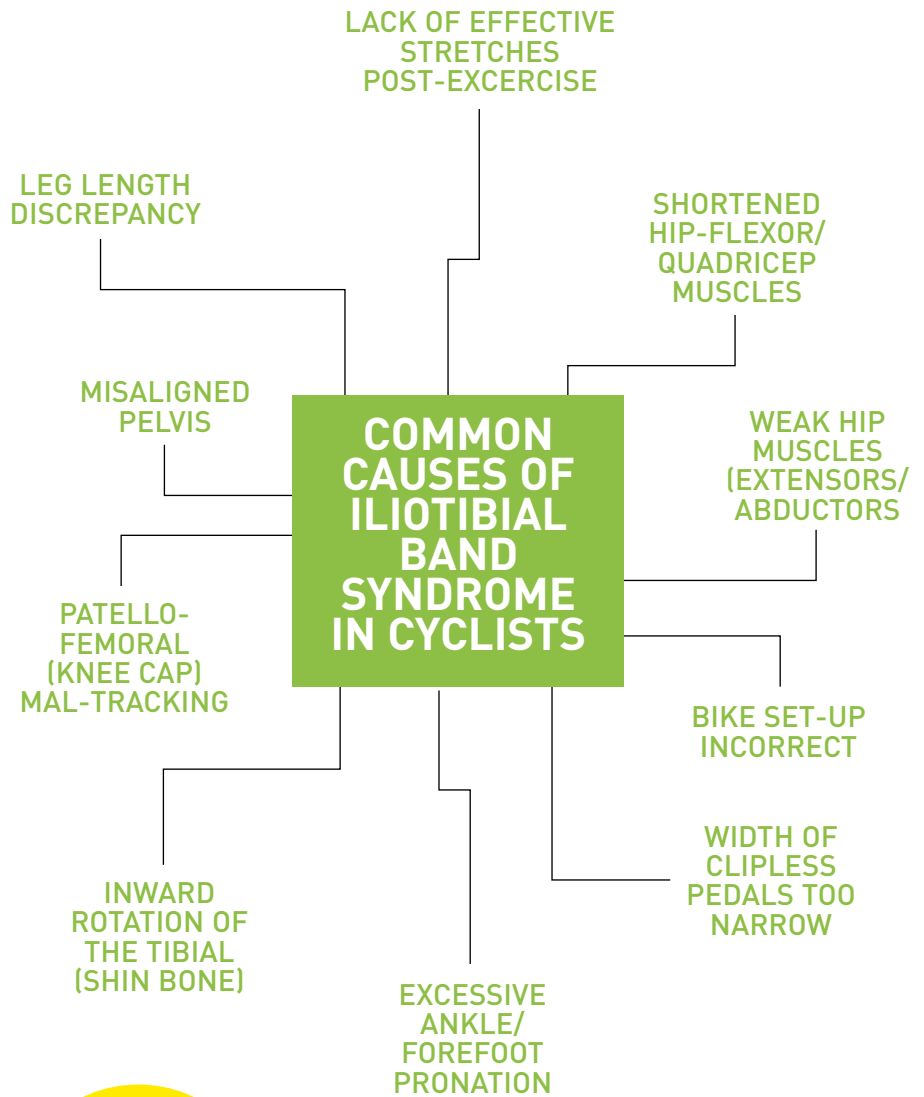
cap). The syndrome occurs as the band rubs across the lateral femoral epicondyle, a bony prominence of the outer femur. As your knee repeatedly flexes and extends, the band can easily become inflamed. During a pedal stroke, the band crosses over the epicondyle once on the down stroke and again on the upstroke. If a cyclist pedals at a cadence of 80rpm, this is equivalent to 160 slides per minute. Over a one-hour ride, the ITB rubs across the knee 9,600 times.

Common causes of ITB syndrome

Many factors can contribute towards this problem. Sometimes there is no apparent reason for getting ITB friction syndrome apart from simple overuse. Often ITB syndrome is caused by a muscle imbalance, where some muscle groups (hip flexors, quadriceps) have become too tight, while others (hip abductors and extensors) have become too weak or fatigued. Therefore, it often helps to strengthen these weaker hip muscles (extensors, abductors and external rotators).

These muscle imbalances may be accentuated by an incorrect cycling position; for example, a saddle set too high or at too steep an incline. Cleats may be too close together for the width of the pelvis, causing excessive adduction (inward rotation of the knee joint) — note, Specialized now supplies pedal axle extenders that can increase cleat width by 4cm.

Leg length discrepancies or a mal-aligned pelvis are two of the biggest causes of chronic ITB problems; these structural asymmetries increase the frictional forces through the tract even with the correct recovery stretches and strengthening exercises. Excessive ankle/forefoot pronation significantly stresses the shin and outer thigh, despite the foot arch being supported in a fixed position. In severe cases, cyclists may need customised shoe orthotics placed in their cycling shoes.



Q The day after a long ride, my outer thighs feel like bricks and the outer part of my knees are really sore and tender to touch. This discomfort clears up by the next day, so I'm fine, but I don't know why it keeps coming back after each long ride?

A First, try completing a set of regular self-exercises (as described) to help lengthen your hip flexors and ITB after each long ride. Using

a foam roller to release any deep muscular tender points will help to prevent post-exercise delayed muscle soreness (DOMS) by improving local circulation and removal of metabolic waste products in the area. Complete this routine pre/post-ride and 24 hours post-ride. If yours is an overuse version of ITB syndrome, you should feel an immediate improvement.

Q Over the last year I have been forced to stop riding by increasing pain around my inner knee joint and outer thigh. I have started to notice swelling around the knee joint now, and even pain radiating down my shin to my ankle. It's

stopping me from fully bending my knee and I'm now having difficulty walking downstairs. What should I do?

A Because the ITB plays a crucial role in stabilising the outer part of the knee joint and patella, it can seize up in a protective way because of another underlying internal knee joint damage or degeneration. I would recommend that you seek medical advice to see an orthopaedic physiotherapist or knee consultant who will assess the integrity of your knee meniscus, ligaments and other surface cartilage to confirm whether there is another deeper problem causing your deteriorating knee pain.

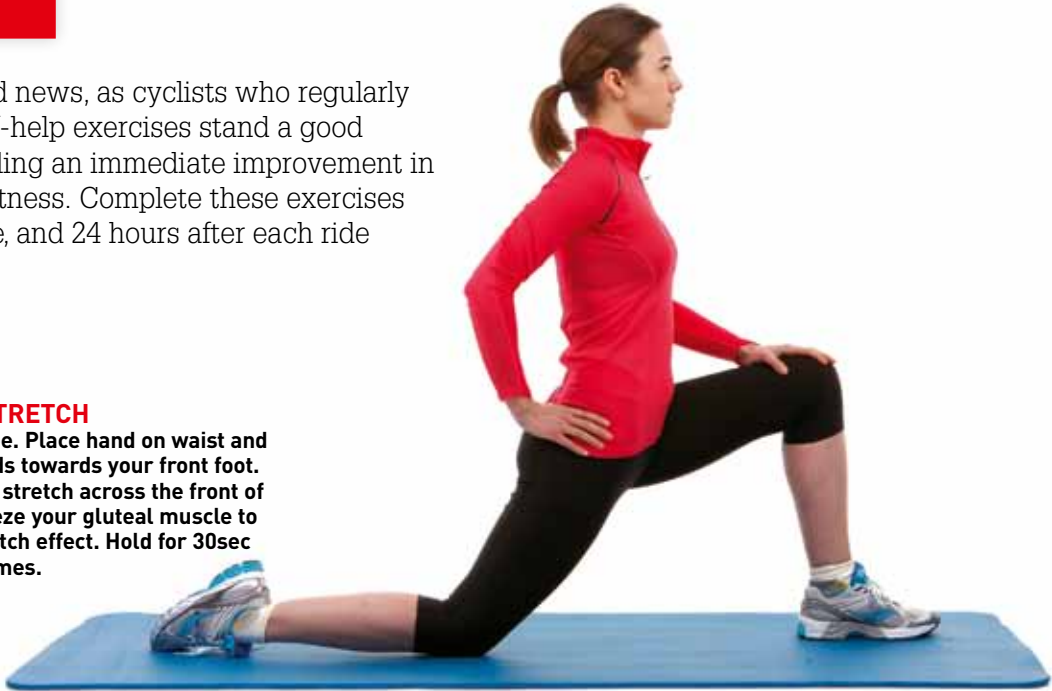
SELF HELP

Exercises to treat ITB syndrome

It's not all bad news, as cyclists who regularly use these self-help exercises stand a good chance of feeling an immediate improvement in their ITB tightness. Complete these exercises pre-/post-ride, and 24 hours after each ride

HIP FLEXOR STRETCH

Kneel on one knee. Place hand on waist and shift hips forwards towards your front foot. You should feel a stretch across the front of your thigh. Squeeze your gluteal muscle to enhance this stretch effect. Hold for 30sec and repeat 3-4 times.



FOAM ROLLER IT BAND

Using the foam roller helps to release adhesions and gently stretches the ITB and surrounding musculature. Lie on your side with the foam roller beneath the middle of your thigh, foot in front for support. Use upper arm to slowly roll yourself along the foam roller but don't go beyond the knee. Massage for around one minute.



OUTER QUADRICEPS TENDER POINTS

Use a massage or tennis ball to apply constant pressure to the outer quadriceps tender points. Hold each point for 30-60 seconds until it eases, then move ball down your thigh and repeat.

