

## **ILIO-TIBIAL BAND SYNDROME**

Ilio-Tibial Band Syndrome (ITBS) is the name given to pain felt on the fibrous structure that travels down the side of the leg and into the knee. It is most commonly experienced by runners and cyclists. It can last for several months and causes a lot of time away from sports and activities. There is a debate as to its mechanism of injury and it is frequently called a friction syndrome meaning that the band flicks across bony prominences at the knee joint causing pain. However, merging evidence suggests that it is actually caused as a result of compression at the knee joint. To fully understand this, let's have a look at the anatomy of the ilio-tibial band.

### **ANATOMY**

The band is formed at the outside of the hip where fibres from the tensor-fascia-lata and the gluteus maximus join together and course down the side of the leg. These fibres then form a very tough band of tissue which is firmly bound to the outside of the leg and inserts into the patella (knee cap) and the tibia by a large expansion forming a well anchored structure. As this description implies, there is very little room for movement of this band and so research has looked at other mechanisms to cause pain.

MRI studies have shown that during the gait cycle, as the knee flexes, the tibia moves backwards and the patella also glides within a groove on the femur which may traction the ilio-tibial band causing a compression at the side of the knee joint and irritating a richly innervated area in this area.

### **BIOMECHANICAL CONSIDERATIONS**

The Ilio-tibial band functions to passively stabilize the knee joint. It does this by resisting adduction of the femur (i.e. prevents the femur falling inwards). This movement is also prevented by specific muscles at the hip called the gluteus medius and minimus. People with ITBS have been shown to have poor contraction of these specific muscles and therefore lack control of the knee joint when it hits the ground. This can cause tensioning of the ilio-tibial band and compression. Other factors to be considered are tightness of the external rotators of the hip joint which may in turn lead to an increase of internal rotation at the knee joint again, further tensioning the band.

### **TREATMENT**

Avoiding aggravating activities is the first line of defence here, however, there are some other measures you can take to reduce pain and prevent further occurrence. A research study of 24 runners (14 female and 10 male) patients with ITBS undertook a six-week rehabilitation programme to strengthen the hip abductors (Gluteus minimus and medius). After six-weeks of strengthening exercises, 22 of the patients had returned to pain free running.

## OTHER FACTORS

Many other factors have been proposed to contribute to ITBS. Of equal importance, the biomechanics at the foot and calf muscle length should also be considered as a likely cause of symptoms. The table below highlights intrinsic and extrinsic factors that may lead to the onset of ITBS.

Table 1: Factors thought to contribute to the development of ITBS	
Intrinsic	Extrinsic
Decreased hip muscle strength	Rapid increase in mileage
Muscle imbalance between anterior and posterior muscles	Hill training
Poor control with resulting altered muscle recruitment	Running on an uneven surface of slope
Decreased hip range of movement	Poor fitting or old shoes
Decreased flexibility of the ITB	Poor cycle fit