Knee Pain

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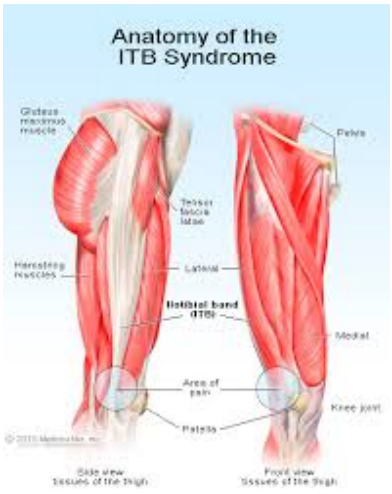
Concord Sport & Spine Physiotherapy

ITB Syndrome

Causes of lateral knee pain include lateral compartment arthritis, meniscal tears, synovitis, patello-femoral disorders, lateral collateral ligament sprains, biceps femoris tendiniopathy, superior tibiofibular joint pathology, & *iliotibial band syndrome* (ITBS) (1). ITBS is the most common cause of lateral knee pain in runners (4), & the second most common cause of all running related knee symptoms (3). It accounts for up to 12% of all running related injuries (4). The ITB is a thickening of the circumferential fascia lata which envelops the thigh (6). It runs from the superior ilium to insert on the patella & Gerdy's tubercle on the tibia, & sometimes projects onto the fibula (1). ITBS used to be described as a 'friction syndrome', with the belief that the band became inflamed due to rubbing against the lateral femoral condyle. It was also believed that an underlying bursa was the cause of the pain. However recent evidence suggests the pain is the result of compression rather than friction (1,6). The band is strongly tethered to the lateral condyle (6), and is unlikely to rub against it (3,6). In addition, there is limited evidence for the presence of a bursa in this region (1,6). There is a fat pad & connective tissue separating the ITB from the lateral condyle (6). These tissues are richly innervated and could be the source of pain (1,6).



Over the years, proposed contributing factors to ITBS have included lack of running experience, excessive track running, running on cambered surfaces, a greater running load, & leg length discrepancy (4); gluteal tightness (1), genu valgum or varum (4,5), excessive vastus lateralis development (1), & poor rear foot mechanics (1,3). Weakness in the knee flexors or extensors may contribute by decreasing muscular braking forces (1,4). More recently, attention has been focused on biomechanical factors. Part of the role of the ITB is to help stabilise the body & maintain upright posture (1,2,3,5). Biomechanical or postural defects can affect this structure, causing ITB related symptoms. Pelvic and hip movements alter ITB tension, making pelvic & hip biomechanical faults a likely cause of ITBS. Biomechanical studies have shown that hip internal rotation & / or adduction can increase compression of the ITB, by moving the distal attachment medially (1,3) or tensioning the band over the greater trochanter. Excessive adduction also increases the eccentric load on the hip abductors, further tensioning the ITB. There is good evidence that athletes with ITBS have weak hip abductors, notably gluteus medius (4,6). This will often lead to over-activation of tensor fascia lata (TFL), a secondary hip abductor. TFL attaches to, and tensions the ITB. It also acts as a hip internal rotator, increasing knee internal rotation.

Sports commonly associated with this condition include running, cycling & endurance sports (1,3,4). It is also common in military recruits (1). Pain will usually be described as sharp or burning (4,6). Symptoms will often arise at around the same time or distance during the run or cycle (1,4). Pain will

settle soon after cessation of activity, but in more severe cases may be present even on walking and going up & down stairs (4). On palpation, there will be tenderness over the lateral femoral condyle, approximately 2-3cm above the joint line (1). There may be crepitus, localised swelling & thickening (4). Ober's & modified Ober's test often reveal ITB tightness & reproduce the symptoms (6).

Physiotherapy treatment consists of local techniques to reduce inflammation, & soft tissue techniques to release tension (5). Trigger points are commonly found in TFL & gluteus maximus (which tension the ITB), & gluteus medius. ITB stretching is controversial, & it is questionable how well this tough fascial tissue will actually stretch (6). However anecdotally it seems to give good results. Biomechanical faults can be addressed through strengthening of the hip rotators & abductors, & this may be the most important part of the overall management (1,3,4,6). Corticosteroid injections give inconsistent results (1). Surgical release is an option if conservative management fails (1).

References:

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