

Medial Meniscus Tear

(Also known as a Medial Meniscal Tear, Torn Medial Meniscus, Medial Cartilage Tear, Bucket Handle Tear of the Medial Meniscus, Torn Meniscus)

What is a medial meniscus tear?

The knee joint comprises of the union of two bones: the long bone of the thigh (femur) and the shin bone (tibia) (figure 1). Between the bone ends are 2 round discs made of cartilage called the medial (inner) and lateral (outer) meniscus (figure 1).



Each meniscus acts as a shock absorber cushioning the impact of the femur on the tibia during weight-bearing activity. Normally the surface of the meniscus is very smooth allowing easy movement of the femur on the tibia. Occasionally the meniscus can be torn or damaged so that the surface is no longer smooth. When this occurs to the medial meniscus, it is known as a medial meniscus tear. Injuries to the medial meniscus are more common than lateral meniscus injuries. Medial meniscus tears can occur suddenly due to too much weight bearing or twisting force going through the meniscus beyond what it can withstand, or gradually due to repetitive or prolonged weight bearing or twisting forces. Injuries to the medial meniscus occasionally occur in combination with injuries to other structures of the knee, such as the cruciate ligaments, the collateral ligaments, or the lateral meniscus.

Causes of a medial meniscus tear

Medial meniscus tears often occur traumatically in sports that require sudden changes of direction and twisting movements (sometimes in combination with excessive straightening or bending of the knee). These sports may include football, soccer, basketball, netball and snow skiing. Medial meniscal tears frequently take place when the foot is fixed on the ground and a twisting force is applied to the knee (e.g. when another player's body falls across the leg, or when a player is tackled) or following a forceful jump or landing.

Medial meniscal tears may also occur over time through gradual wear and tear (e.g. excessive distance running). This may be associated with degenerative changes to the knee joint. In older patients where degenerative changes are present, injury to the medial meniscus may occur with a relatively trivial movement.

Signs and symptoms of a medial meniscus tear

Patients with a medial meniscal tear may report that they heard an audible sound at the time of injury or experienced a tearing sensation. There is usually pain with weight bearing activity and twisting movements of the knee. Patients may also

experience pain when climbing stairs, attempting to kneel or when squatting. Swelling is often present in patients with medial meniscal tears and may occur a few hours after injury or, more commonly, in the following days. It is usually tender to touch the joint on the inner aspect of the knee. The knee may also feel weak or unstable and may click or lock during certain movements.

In minor cases of medial meniscus tears there may be little or no immediate symptoms. In these cases, symptoms may develop gradually over the coming days, typically with an increase in weight bearing or twisting activity. In more severe cases there may be severe pain and significant restriction in knee range of movement. Intermittent locking, clicking sensations, and episodes of giving way or collapsing may be present. The patient may also walk with a limp or, be unable to weight bear due to pain.

Diagnosis of a medial meniscus tear

A thorough subjective and objective examination from a physiotherapist is usually sufficient to diagnose a medial meniscus tear. Investigations such as X-ray and MRI are sometimes used to confirm diagnosis and exclude the presence of other injuries to the knee. In rare cases, where an MRI has proven inconclusive, an investigative arthroscope may be performed to assist diagnosis.

Treatment for a medial meniscus tear

Most minor tears to the medial meniscus heal well with appropriate physiotherapy. The success rate of treatment is largely dictated by patient compliance. A vital aspect of treatment is that the patient rests sufficiently from twisting and weight bearing activities (such as standing, walking, lifting, squatting, and running etc) until they are pain-free. Once the patient can perform these activities pain free, a gradual return to these activities is indicated provided there is no increase in symptoms.

Patients with a medial meniscus tear usually benefit from following the [R.I.C.E. Regime](#). The R.I.C.E regime is beneficial in the initial phase of the injury (first 72 hours) or when inflammatory signs are present (i.e. morning pain or pain with rest). This involves resting from aggravating activities, regular icing, the use of a compression bandage and keeping the leg elevated. Anti-inflammatory medication may also significantly hasten the healing process by reducing the pain and swelling associated with inflammation.

Patients with a medial meniscus tear should perform pain-free flexibility and strengthening exercises as part of their rehabilitation to ensure an optimal outcome. One of the key components of rehabilitation is pain-free strengthening of the quadriceps (vastus medialis obliquus muscle – VMO), hamstrings, gluteals and calf to improve the control of the knee joint with weight-bearing activities. The treating physiotherapist can advise which exercises are most appropriate for the patient and when they should be commenced.

Surgery for a medial meniscus tear

Despite appropriate physiotherapy management, a small percentage of minor meniscal tears fail to improve and subsequently require surgery in order to get back to full activity. The majority of large meniscal tears also require surgery. This is particularly true in those cases where the knee is 'locked'. Surgery for medial meniscus tears is minimally invasive. The procedure is called a knee arthroscope and involves a surgeon cutting away the torn part of the cartilage via 2 small incisions so that the meniscal surface is smooth once again. The aim of surgery is to preserve as much of

the meniscus as possible. The treating physiotherapist and doctor will refer to a specialist if surgery is indicated. Physiotherapy and rehabilitation is then required following surgery to ensure an optimal outcome and enable a safe return to sport or activity.

Prognosis of a medial meniscus tear

Those patients with minor medial meniscus tears that are managed conservatively can usually expect to return to sport or activity in approximately 2 - 4 weeks. For moderate tears that are managed conservatively return to sport or activity may take 4 - 6 weeks or longer.

Minor medial meniscus tears that are managed surgically can sometimes return to sport or activity within 4 – 6 weeks, although most surgical repairs (especially when the meniscus tear is moderate to severe) will usually require a rehabilitation period of 6 - 8 weeks or longer. If there is damage to other structures in the knee, such as the anterior cruciate ligament, rehabilitation may require an extended period. It is important that medial meniscus injuries are managed appropriately, as inappropriate treatment may lead to the development of early knee osteoarthritis.

Physiotherapy for a medial meniscus tear

Physiotherapy treatment is vital to hasten the healing process and ensure an optimal outcome in all patients with medial meniscus tears regardless of whether they have surgery.

Physiotherapy treatment may comprise:

- soft tissue massage
- electrotherapy
- taping or bracing to support the knee
- mobilization
- dry needling
- hydrotherapy
- the use of crutches
- ice or heat treatment
- progressive exercises to improve flexibility, balance and strength (especially the VMO muscle)
- activity modification advice
- education
- biomechanical correction
- anti-inflammatory advice
- weight loss advice where appropriate
- the use of Real-Time Ultrasound to assess and retrain the VMO muscle
- a gradual return to activity program

For those patients who are undergoing surgery to repair the medial meniscus tear, physiotherapy and rehabilitation should commence prior to surgery. This may include treatment to reduce pain and swelling, electrotherapy, strengthening and range of movement exercises, the use of a compression bandage, and the use of crutches etc. Following surgery, physiotherapy and rehabilitation is essential to assist the healing process and ensure an optimal outcome.

In the final stages of rehabilitation for all medial meniscus tears the physiotherapist can devise an appropriate return to sport or activity plan. Returning to activity too

soon or without adequate rehabilitation will often lead to knee swelling and re-injury to the meniscus.

Other intervention for a medial meniscus tear

Despite appropriate physiotherapy management, some patients with medial meniscus tears fail to improve either conservatively or following surgery. When this occurs the treating physiotherapist or doctor can advise on the best course of management. This may include further investigations, pharmaceutical intervention, corticosteroid injection, or further surgery.

Exercises for a medial meniscus tear

The following exercises are commonly prescribed to patients with a medial meniscus tear. You should discuss the suitability of these exercises with your physiotherapist prior to beginning them. Generally, they should be performed 3 times daily and only provided they do not cause or increase symptoms.

Knee Bend to Straighten

Bend and straighten your knee as far as possible without increasing your pain (figure 2). This helps to restore your normal knee movement. Repeat 20 times.



Figure 2 – Knee Bend to Straighten (right leg)

Static Quadriceps Contraction

Tighten the muscle at the front of your thigh (quadriceps) by pushing your knee down into a towel (figure 3). Put your fingers on your inner quadriceps to feel the muscle tighten during contraction. Hold for 5 seconds and repeat 10 times as hard as possible without increasing your symptoms.



Figure 3 – Static quadriceps contraction (left leg)

If you are suffering from pain on the inside of your knee you may have a medial cartilage tare. For expert help call me on +442866328200 or email info@lindaburke.cxo.uk