

Meniscal Tears and Surgery

Associate Professor Justin Roe

The meniscus is a commonly injured structure in the knee. The injury can occur in any age group. In younger people the meniscus is fairly tough and rubbery, and tears usually occur as a result of a fairly forceful twisting injury under load. With ageing, the meniscus grows weaker and more brittle, and meniscal tears may occur as a result of a fairly minor injury or repetitive load.

The **meniscus** is a half-moon shaped piece of cartilage that lies between the weight bearing joint surfaces of the knee and is attached to the lining of the knee joint. There are two menisci in a normal knee; the outside one is called the lateral meniscus and the inner one is called the medial meniscus.

The menisci play an important role as a shock absorber in the knee joint, protecting the cartilage that lies on the surface of the bones from impact. The cartilage surface is a tough, very slick material that allows the surfaces to slide against one another without damage to either surface. This ability of the meniscus to spread out the force on the joint surface as we walk and run is important because it protects the cartilage from excessive forces occurring in any one area on the joint surface. The menisci also cup the joint surfaces of the knee and therefore provide some degree of stabilization to the knee.

Meniscal Tears:

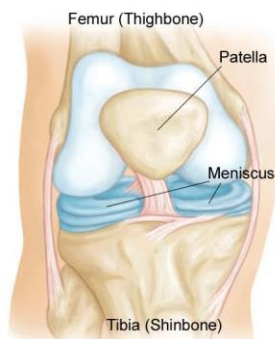
There are two different mechanisms for tearing a meniscus which can result in different “types” of tears.

Traumatic tears result from a sudden load being applied to the meniscal tissue that is severe enough to cause the meniscal cartilage to fail and let go. These usually occur from a twisting injury under load.

Degenerative meniscal tears are best thought of as a failure of the meniscus over time. The meniscus becomes less elastic and compliant, and as a result may fail with only minimal trauma (such as just getting down into a squat or repetitive loads). Sometimes there are no memorable injuries or violent events that can be blamed as the cause of the tear.

Types of Meniscal Tears:

It is important to realise that there are **many different types or configurations of meniscal tears**, and as a result of this, there are many **different ways of treating meniscal tears**.



MRI scans help delineate the configuration of meniscal tears but are never 100% accurate in doing that. Thus, MRI scans should not be used alone to direct the treatment of meniscal tears. The MRI report should always be read in conjunction with the patient’s history and symptoms, and an experienced clinical observer, such as an Orthopaedic Surgeon, looking at the scans.

Displaced vs Undisplaced Meniscal Tears:

Menisci do NOT have a good nerve supply. As a result, the tear **does NOT necessarily** result in the patient feeling symptoms. It is the abnormal movement of the torn meniscus in the knee, or the disturbed normal shock-absorbing function of the meniscus, that results in a patient feeling pain. Swelling in the knee can also cause symptoms. The treatment of displaced and undisplaced meniscal tears, therefore, can be different.

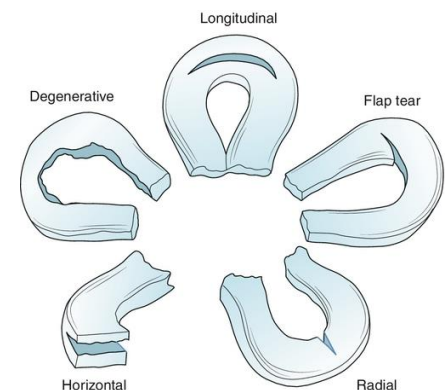
Cleavage/Horizontal Meniscal Tears

A weakness in the substance of the meniscus can result in tearing of the meniscus in a horizontal-type configuration through the body of the meniscus. These types of tears are often associated with the ageing meniscus, and not associated with trauma. They are commonly seen on MRI scans as coincidental findings and may be asymptomatic. They are **NOT often displaced**.

Longitudinal/Vertical Meniscal Tears

Vertical tears, as the name implies, travel in a plane through the meniscus from the top surface to the bottom surface and are often the result of trauma. These tears may be of varying length, and it is usually the length of the tear that determines whether it will be stable or unstable. Due to it often resulting from trauma, there will be symptoms initially, and then these symptoms may subside.

Ongoing symptoms may then result from the tear being unstable and moving when a specific load is applied to the knee.



Meniscal Tears and Surgery

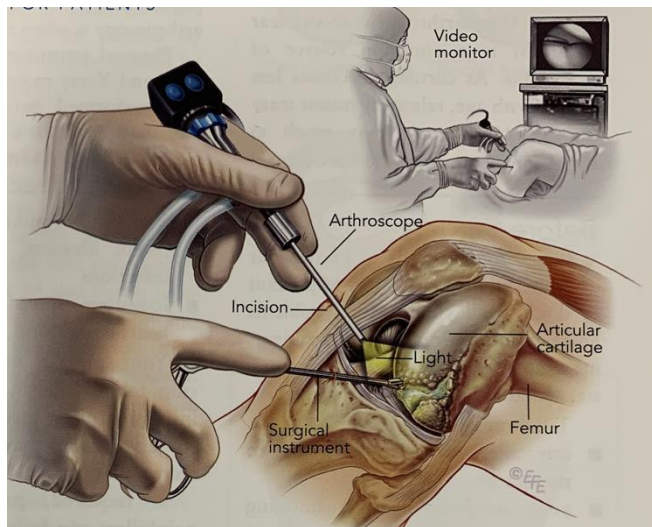
Associate Professor Justin Roe



NORTH SYDNEY ORTHOPAEDIC
& SPORTS MEDICINE CENTRE

Meniscal Repair:

The aim of meniscal repair surgery is to promote healing of the torn meniscus back to its original function. For this to occur, adequate stability and blood flow, as well as the removal of the excessive load that caused the tear is required while the meniscus heals. Specific parts of the meniscus have good blood supply, so tears located in these specific parts have a good chance of healing. Tears in less vascular areas are more common, and therefore have a poor chance of healing. There are different ways to repair the torn meniscus. Surgery is performed through small incisions on the sides of the knee with the aid of a small video camera called an arthroscope.



All-inside Meniscal Repair

This is when sutures and repair devices are used arthroscopically to stitch the torn meniscus back to itself or the capsule of the knee joint without using any extra skin incisions.

Inside-Out / Outside-In Meniscal Repair

This is when sutures are used to stitch the meniscus through an external incision in the skin

Rehabilitation

Following meniscal repair surgery, it is important to allow the repaired tissue to heal in an environment that doesn't disrupt the healing process. This may involve the use of crutches and a period of restricted weight bearing and/or the use of an external brace with a restricted range of motion following the surgery.

Just as there are different types of meniscal tears and repair techniques, the type of rehabilitation that patient's undergo after surgery is usually specifically prescribed by the Surgeon for them. For this reason, it is hard to prescribe a "protocol" for all patients undergoing meniscal repair surgery. Patients undergoing meniscal repair surgery should expect to undergo a more lengthy and "protected" recovery time period than those undergoing a meniscectomy procedure.

If you have questions or concerns, please contact Dr Justin Roe's rooms on (02) 9409 0558 or email admin@justinroe.com.au