



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. In older people, the meniscus grows weaker and more brittle with age, 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 thigh and the shin, 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 is important because it protects the cartilage from excessive forces occurring in anyone area on the joint surface. Without the meniscus, the concentration of force into a small area on the cartilage can damage the surface, leading to degeneration over time. The menisci also cup the joint surfaces of the thigh and therefore provide some degree of stabilization to the knee.

Articular cartilage is the smooth cartilage that covers the ends of the bones that forms joints. It functions to absorb shock and provide a very smooth surface to provide a low friction environment for ease of movement.

Articular Cartilage Lesions:

Articular cartilage has a very poor blood and nerve supply which means it has a poor ability to regenerate or heal itself following damage. The surface of articular cartilage is usually very smooth, but can be made rough by age, trauma or abrasion from a meniscal tear. Damage to the articular cartilage results in thinning of the cartilage and this can result in a reduced lubricity or load-bearing capacity of the joint in that area of reduced volume of cartilage.



The articular cartilage roughness can also result in pain from loose edges of cartilage that may catch.

Meniscal Tears:

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

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 complaint, 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.



Bucket Handle Tear

Flap Tear



Radial tear

Degenerative tear

Signs and Symptoms:

The most common problem caused by a torn meniscus is pain. The pain may be felt along the joint line where the meniscus is located or may be more vague and involve the whole knee. Any twisting, squatting or impacting activities will pinch the meniscus tear or flap and cause pain. Often the pain may improve with rest after the initial injury as the inflammation caused by the tear resolves, but as soon as aggressive activity is attempted the pain recurs due to the process starting up again.

Swelling of the joint may occur. Typically, in the acute stage, the swelling sets in the day after the injury and is associated with stiffness and limping.



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If the torn portion of the meniscus is large enough, locking may occur. Locking occurs when the fragment of torn meniscus gets caught in the hinge mechanism of the knee and will not allow the leg to straighten completely. There are also long-term effects of a torn meniscus. The constant rubbing of

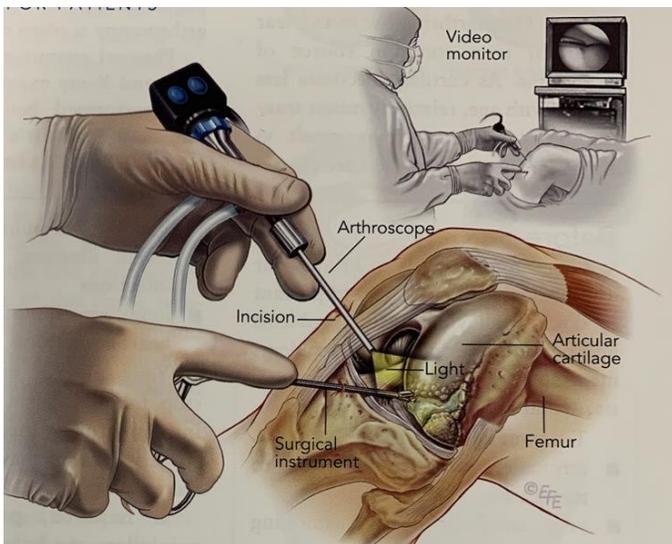
the torn meniscus on the cartilage may cause wear and tear on the surface, leading to degeneration of the joint. This is why it is better, in some situations, for the torn piece of meniscus to be removed from the joint.

Treatment:

Initial treatment for both a torn meniscus and an articular cartilage lesion is directed towards reducing the pain and swelling in the knee. You may be asked to attend physiotherapy to reduce the pain and swelling and improve the range of movement. If the knee is locked and cannot be straightened out, physiotherapy will not usually help, and surgery may be recommended as soon as reasonably possible to remove the torn cartilage that is caught in the knee joint. Meniscal tissue that is torn in certain configurations and locations is unlikely to heal on its own. If the symptoms continue, surgery may be required.

Surgery:

Surgery for both meniscal and chondral injury is performed through small incisions on the sides of the knee with the aid of a small video camera called an arthroscope.



Meniscectomy.

Through small incision, special instruments are used to remove the torn portion of meniscus while the arthroscope is used to see what is happening. If the Surgeon has recommended meniscectomy, it is usually because due to the age of the patient, the age of the tear, the anatomy of the tear or the architecture of the tear, the tear is NOT repairable.

Chondroplasty: Chondroplasty is often performed in conjunction with an arthroscopic meniscectomy to smooth damaged articular cartilage in the knee. A small motorized instrument, called a 'shaver' or chondrotome, is used to remove any loose articular cartilage fragments and smooth the roughened articular surface. It may also be performed as a separate procedure.

What is involved for you as the patient?

- Healthy patients are admitted on the morning of their surgery. You should inform your Surgeon and Anaesthetist of any significant medical conditions prior to the surgery.
- It is extremely important that there are no cuts, scratches, pimples or ulcers on your leg as this increases the risk of infection. You should not shave or wax your legs for one week prior to surgery.
- After the operation you will be required to stay in hospital for several hours. Overnight stay is unusual.
- You should attend physiotherapy once in the first week but do your exercises daily. This appointment should be made prior to surgery.
- Sedentary and office workers may return to work approximately 2-3 days following surgery. Most patients should be walking normally 7 days following surgery although there is considerable patient to patient variation.
- Return to vigorous activities will be determined by the extent of the damage to your knee and surgical treatment. If minimal damage was present, then you may return to vigorous activities after 6 weeks. If significant damage was present, then you may be advised to avoid impact loading activities in order to prevent the onset of early arthritis developing within the joint.



Potential Complications related to surgery:

As with all operations if at any stage anything seems amiss it is better to call up for advice rather than wait and worry.

- Infection: although uncommon, any signs of fever, or redness or swelling around the line of the wound, or an unexplained increase in pain should all be brought to the attention of the Surgeon.
- Deep vein thrombosis and pulmonary embolus: although this complication is rare following arthroscopic surgery, a combination of knee injury, prolonged transport and immobilization of the limb, smoking and the oral contraceptive pill or hormonal replacement therapy all can increase the risk. Any past history of thrombosis should be brought to the attention of the Surgeon prior to your operation. Smoking should cease one week prior to surgery to minimise the risks of DVT.
- Excessive bleeding resulting in a haematoma is a known risk with patients taking aspirin. Signs of increased swelling, pain and stiffness should be made known to your Surgeon.
- Surgery is carried out under strict germ free conditions in an operating theatre. Antibiotics are administered intravenously at the time of your surgery. Any allergy to known antibiotics should be brought to the attention of your Surgeon or Anaesthetist. Despite these measures there is a less than 1 in 300 chance of developing an infection within the joint. This may require treatment with antibiotics or may require re-hospitalisation and arthroscopic draining of the joint and prolonged administration of intravenous antibiotics.
- Prolonged pain (greater than 7-10 days) requiring large and prolonged doses of strong medications is unusual. If you are experiencing pain that can't be controlled, you should contact your Surgeon.

Common Questions

Q. Anaesthetic?

A. General anaesthetic

Q. Duration of operation?

A. Approximately 30-60 minutes.

Q. Is this procedure day only?

A. Yes, unless advised otherwise by Dr Roe.

Q. Do I need crutches?

Yes. You will need to bring these with you on the day of your surgery and they can be organised through your own physiotherapist or through your local chemist. They can usually be ceased as soon as you are comfortable to full weight bear.

Q. What medications should I cease prior to the surgery?

A. Any blood thinning medication should be stopped prior to surgery.

Q. Driving a car?

A. Driving an automatic car is possible as soon as pain allows after left knee surgery. Should the right knee be involved driving is permitted when you can walk comfortably.

Q. How long does it take for the swelling to go away?

A. After 4-6 weeks most of the swelling should settle.

Q. How long do I need off work?

A. Sedentary and office workers may return to work approximately 2-5 days following surgery.

Q. When can I travel?

You can travel domestically after 3 days and internationally after 2 weeks.

Q. When can I play sport?

This will vary depending on your surgical outcome. Please discuss this with Dr Roe.

Q. When do I need to see Dr Roe after the surgery?

You will see Dr Roe at 4-6 weeks after surgery.