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Patient Information

ANTERIOR CRUCIATE LIGAMENT

This information has been designed to give you a basic understanding of your anterior cruciate ligament operation and what to expect during your hospitalisation. Please keep in mind that this is a guideline only and that each individual has different needs, so you may progress at a different rate to that which is outlined.

The anterior cruciate ligament is the most commonly disrupted ligament in the knee. Our understanding of the anterior cruciate ligament and its importance to the knee stability has increased greatly over the past 20 years, as has our ability to diagnose and treat this injury.

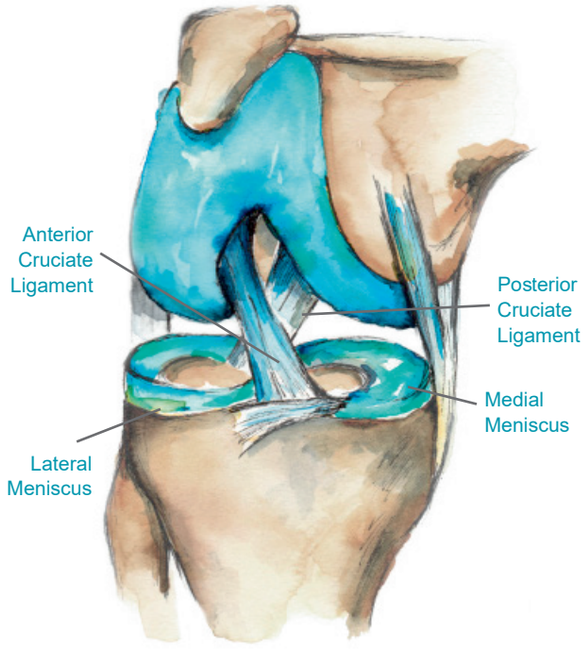
The normal anatomy of the knee is shown below. The cruciate ligaments and the collateral ligaments provide stability to the joint. The 'menisci' function not only as shock absorbers but also enhance joint lubrication and nutrition of the articular cartilage. The articular cartilage lines the inside of the knee joint and allows for its smooth movement. It is a shiny white material that acts as a bearing surface. This articular cartilage is very different from the meniscal cartilages (or menisci, mentioned above).

Where the anterior cruciate ligament is torn it is commonly associated with the disruption of one or more of the following:

- Medial Meniscus
- Medial collateral ligament
- Lateral meniscus
- Articular cartilage-chondral injury.

Injuries to the anterior cruciate ligament occur most often with athletic activities (especially football and netball), but may be ruptured in work injuries or non-athletic activities. The injury can occur without contact and often is associated with a sudden change in direction or a sudden change in speed (a deceleration injury). It may also occur with the body falling over a fixed leg or with a hyperextension injury to the knee.

When the injury occurs you may hear an audible 'pop' or feel the knee 'tearing' inside. Many people describe the knee 'coming apart then popping back'. This is usually followed by difficulty in walking, and progressively decreasing motion as the swelling develops. If untreated a significant number of knees give future trouble in the form of instability and giving way. This is particularly so on uneven ground or when performing twisting or turning manoeuvres. Many people describe a feeling of not being able to trust the knee.



Treatment for injuries of the anterior cruciate ligament cannot be standardised because of individual difference in injury patterns and because of different expectations of patients in regard to return to sporting activities.

In patients who see sport purely as recreation and who would consider giving it up if it meant that an operation may be required, a hamstring rehabilitation program may provide a satisfactory knee which causes little trouble in their daily lives. For those patients who live for their sport and cannot adjust their lifestyle, surgical reconstruction offers the best chance of return to their previous level of activity.

Patients with an old anterior cruciate ligament rupture need to avoid recurrent giving way and buckling. If these episodes are associated with pain and swelling, the knee can develop progressive wear and tear arthritis. Patients in this situation need to either consider the option of surgical reconstruction or change the demands that they are placing on the knee.

About the reconstruction

Reconstruction of the anterior cruciate ligament is a complex procedure and there are many different ways to reconstruct it.

The preferred method, at this time, is to use a portion of tendon from elsewhere as a graft. In most cases this means using the middle third of the patellar tendon or the hamstring tendons. Artificial ligaments have not stood the test of time.

The technique for reconstructing the anterior cruciate ligament has improved in the last ten years and can now be done in an 'arthroscopically aided' manner. This does not mean that there are no incisions, however because the graft has to be taken in a standard 'open' operation. The knee joint itself, however, is usually not opened as all the work in the knee can be done via the arthroscope. This allows for less pain, a shorter hospital stay, and an earlier and better range of knee motion. Most importantly this means less wasting of the quadriceps and hamstring muscles post-operatively and an earlier return to normal knee function.

The risks involved

As with any surgical procedure complications can occur.

Infection – There is a risk of infection (about 1%) and this may require treatment with antibiotics or even further surgery.

Ongoing instability – There is a risk of ongoing instability in the knee, even with surgery (5-10%).

Stiffness – There is a risk of stiffness in the knee and occasionally a further arthroscopy is required to address scar tissue in the knee joint.

Numbness – You may experience numbness adjacent to the scar for some months after surgery and also feel some discomfort when kneeling for up to 12 months.

Associated meniscal tears

These generally need to be dealt with even if a reconstruction is not being considered. A meniscal tear should be treated early so as to prevent future damage to the articular surfaces. As soon as the knee has settled down after meniscal surgery (generally at about 1 week) a rehabilitation program can be commenced to strengthen the quadriceps and to regain knee function.

Some menisci can be repaired, again with the aid of the arthroscope. If this is possible it is preferable to do this, rather than to resect part of the meniscus, particularly in the anterior cruciate deficient (unstable) knee. Loss of part or all of a meniscus does increase the wearing in the knee (osteoarthritis). Despite the advantages of meniscal repair however, it is generally not performed unless the ACL is to be reconstructed at the same time.

Summary

The anterior cruciate ligament is a major and important ligament in the knee which is commonly injured.

Treatment depends on the exact nature of the injury, the nature of any associated injuries and the lifestyle of the patient and their future aspirations in regards to sport.

In those patients who are willing to alter their lifestyle a knee rehabilitation program may be adequate, but the keen athlete may prefer to have their knee reconstructed to get back to sport. With the advent of better operative procedures to reconstruct this ligament such as have been developed in the last 10 years, the problems that used to be associated with this form of surgery are less common and the functional results are better.

In general 90% of those undergoing reconstruction will be able to return to their previous sport and some 70% will be able to compete at their previous level.

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This material has been produced as a reference guide only and should not be used in place of a consultation with a qualified medical practitioner. This information sheet is not intended for medicolegal purposes.