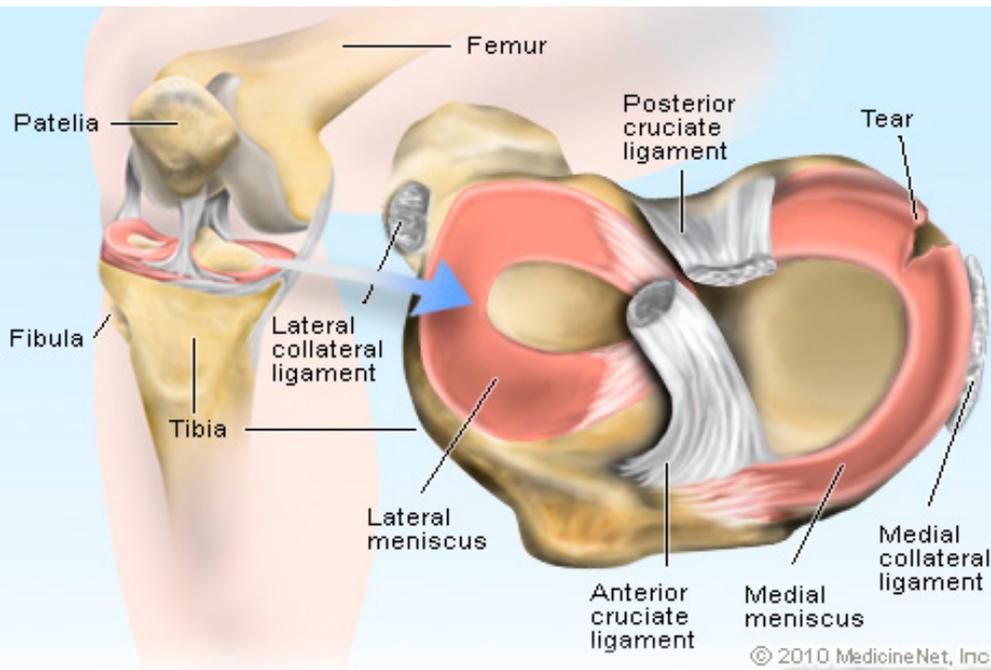


ACL Injury



The anterior cruciate ligament (ACL) is a 38mm long band of fibrous tissue that connects the femur (thigh bone) to the tibia (shin bone). Its function is to control stability when performing twisting actions and it is essential in controlling the rotation forces developed during side stepping, pivoting and landing from a jump. It is usually not required for normal daily living activities.

The ACL is commonly injured whilst playing ball sports or skiing. The actions of attempting a pivot, side step or land from a jump are usually implicated and the knee gives way. When skiing, the ACL is injured when the binding fails to release as the ski twists the leg. Patients frequently hear or feel a snap, or crack accompanied by pain.

Swelling commonly occurs within the hour. Pain is felt on the outer aspect of the knee. The medial ligament of the knee joint may also be disrupted resulting in severe pain and swelling about the inner side of the joint. If not treated patients may experience recurrent episodes of instability when pivoting. ACL tears are often diagnosed on the basis of how the injury was sustained and the clinical examination. An MRI examination is usually performed to confirm the diagnosis but more importantly to allow assessment of the other structures of the knee which may have also been injured

PCL Injury

The posterior cruciate ligament (PCL) is one of several ligaments in the knee that joins the upper and lower parts of the legs together. Its function is to provide stability during twisting or turning movements of the knee, particularly when the knee is bent. It is infrequently injured. The most common way for the PCL alone to be injured is from a direct blow to the front of the knee while the knee is bent, for example a "dashboard" injury during a car accident in which a blow occurs to the front of the lower leg. This forces the lower leg backwards at the knee, rupturing the ligament. The same force can occur during a fall on the bent knee, or during a football tackle. Tears of the PCL can also result from an injury that over extends or over flexes the knee.

There is a wide range of symptoms. Some patients are able to function normally with the assistance of physiotherapy in the acute stage of the injury, while others present with pain, an inability to run or an unstable knee that gives way with sidestepping. Once the acute injury settles some patients may experience pain behind the knee cap or at the back of the knee itself. Activities such as running and going down stairs may be difficult or painful. Occasionally patients describe episodes of the knee giving way during activity or a feeling of insecurity within the knee.

Treatment

The knee is actually composed two joints. A number of structures surround the area, and can all effect the knee. A holistic approach is therefore beneficial to managing knee injuries.

Treatment for knee problems first requires the correct diagnoses. Upon assessment, further investigations may be required such as an xray or scan such as an ultrasound or MRI, to assist with confirmation.

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Conservative Treatment

The aim of treatment of an injured knee is to return the patient to their desired level of activity without risk of further injury to the joint. Those patients who have a ruptured ACL and are content with activities that require little in the way of side stepping (running in straight lines, cycling and swimming) may opt for treatment without an operation.

Conservative treatment includes physiotherapy to reduce swelling, restore the range of motion of the knee joint and rehabilitate to full muscle power. Proprioceptive training to develop essential protective reflexes are required to protect the joint for normal daily living activities. Patients who choose conservative treatment need to ensure that any physical activity or exercise involves straight line activity only. Social (non-competitive) sport may still be possible without instability as long as one does not change direction suddenly.

Operative Treatment

Patients who wish to pursue competitive ball sports, or who are involved in an occupation that demands a stable knee are at risk of repeated injury without surgery. Repeated injuries may result in tears to the menisci and damage to the articular surface leading to degenerative arthritis and further disability. In these patients, surgical reconstruction is recommended. The best time

for surgery is when the knee is pain free and with a full range of motion.

All reconstructive procedures for the ACL and PCL require a graft. Most commonly, segments of the hamstring tendons are used as grafts. Specially designed screws allow secure and immediate fixation of the tendon within the joint allowing for a rapid rehabilitation. Stabilising the joint in this way protects the menisci and reduces the risk of osteoarthritis later.

An extensive rehabilitation process follows with the aim of returning the knee range of motion, and building the strength of the muscles in the leg. Balanced proprioception exercises are really important to help provide stability and control to the knee and improve confidence in loading. Running and impact exercises are introduced gradually as the joint and graft recovers, and finally a return to sport occurs at 9 - 12 months following the operation.

Sometimes an artificial graft can be used, which will mean that your recovery may be able to be expediated.

Reconstruction surgery can be a little boring and frustrating as we need to wait for natural healing to occur before progressing to new levels of exercise. Just because the knee feels like it is ready to progress doesn't mean the graft is. Your specialist and physiotherapist will guide you through the progressions to ensure you progress at the optimum speed whilst protecting the graft.