

INTRODUCTION

Injuries to the knee continue to be a common and highly publicised occurrence in athletes. The nature of Gaelic games predisposes its athletes to such injuries. The most common situations that give rise to injuries in Gaelic football are collision (22%) and twisting/turning (19%) both causing stress on the knee and predisposing the knee to injury. Lower limb injuries are predominant in elite Gaelic footballers, accounting for 77% of all injuries. Thirty-two per cent of these injuries occur to either knee or ankle ligaments and 16% to either knee or ankle tendons. When the knee is injured, more than one structure is usually involved. Any force significant enough to damage one structure can cause damage to other structures too. The most common knee injuries are described below and the location of some of the structures involved are shown in Figure 1.

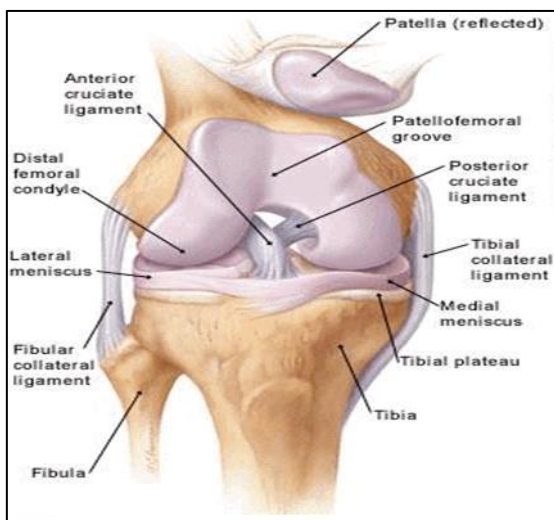


Figure 1 Anatomy of the knee

ANTERIOR CRUCIATE LIGAMENT (ACL)

ACL Rupture (see figure 2) is a common injury in GAA sport due to the quick changes of direction and fast turning nature of the game. ACL tears are the most common cause of extended absence from sport. The ACL is a very important stabilizing ligament in the knee as it attaches the femur (thigh bone) to the tibia (shin bone) in the middle of the knee joint. It acts to prevent excessive forward movement of the tibia in relation to the femur.

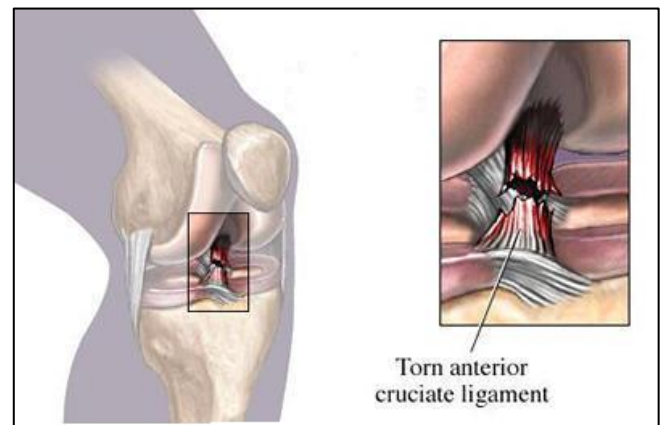


Figure 2 Torn ACL ligament

How does it occur?

This type of injury commonly occurs when the foot is planted on the ground and the player attempts to change direction or twists at the same time. Injury can also occur by landing from a jump onto a bent knee and then twisting or by direct collision from another player in a tackle. Injury of the ACL commonly occurs in conjunction with injury to other structures of the knee such as the collateral ligaments and/or the meniscus (i.e. cartilage).



Signs and Symptoms

Commonly at the time of injury the player MAY (but not always):

- hear a 'pop' or 'snap'
- experience extreme pain

After the incident the knee MAY (but not always):

- swell up within an hour or two due to a haemarthrosis (bleeding within the joint)
- feel unstable or feel like it will 'give way'
- have restricted movement, especially loss of extension (the ability to straighten the knee)

Diagnosis

During the initial acute stage of the injury (2-3 days) exact diagnosis can be difficult due to swelling around the joint. Ideally a doctor or physiotherapist should examine the knee in the first hour after the injury and again after a few days when the swelling has settled for a more accurate diagnosis. A physiotherapist or doctor will perform various tests to stress the ligaments of the knee to establish laxity within the joint. An MRI scan may be necessary to confirm the injury. If an ACL rupture is established the player will need to be referred to an orthopedic consultant to discuss their treatment options.

MANAGEMENT

As with all acute injuries **PRICE** (see below) should form the core of treatment for the first few days following the injury to reduced pain and swelling.

Protection - use crutches to aid walking and minimize further tissue damage

Rest – to minimize further tissue damage and facilitate healing

Ice – to reduce swelling and provide pain relief

Compression – to reduce swelling

Elevation – to reduce swelling

Long-term Management

To the sporting community a complete ACL rupture normally requires surgical reconstruction especially if the athlete aims to continue playing sport. If there is only a partial tear of the ACL, and the player has minimal instability, it may be possible to return to sport after a conservative rehabilitation program guided by a physiotherapist (range of movement, strength, control, balance, plyometric, sports skills). Ideally if an athlete is due to have ACL reconstruction surgery rehabilitation should commence prior to the procedure. This is normally referred to as 'Prehabilitation'. **Prehabilitation** involves undergoing a physiotherapy-guided program to gain the best possible range of movement, strength and balance before going in for the operation. Optimising the condition of the knee pre-operatively may reduce the recovery and rehabilitation periods after the operation.

ACL Reconstruction Surgery

The torn ACL is replaced by a graft, which comes from either the 'Patella Tendon' (where the middle third of the large tendon below the kneecap is taken

to make the new ACL) or some 'Hamstring' tissues (where the ACL is made out of tissues taken from the hamstrings).

Rehabilitation

Rehabilitation under the supervision of a Chartered Physiotherapist generally takes approximately six months to return to sport.

Initial Rehab. (wks 1-2/3)

- ✦ PRICE
- ✦ Gait re-education
- ✦ Manual therapy and stretches to regain range of movement
- ✦ Basic lower limb strengthening
- ✦ Stretching and balance program
- ✦ Static cycling

Middle Stage Rehab. (wks 2/3-12)

- ✦ Continuation of the above
- ✦ Progressive lower limb resistance program with focus on functional exercises (squats, lunges, step exercises)
- ✦ Increase walking distance with correct gait pattern
- ✦ Balance exercises
- ✦ Low weight bearing cardiovascular gym machines and lower limb resistance machines
- ✦ Swimming
- ✦ Core stability
- ✦ Upper body conditioning

Late Stage Rehab. (wks 12-24)

- ✦ Progressive strength
- ✦ Flexibility

- ✦ Balance
- ✦ Core stability and jogging/running program
- ✦ Plyometric training (hopping, jumping etc.)
- ✦ Turning/twisting/cutting program
- ✦ Sports specific skills
- ✦ Gradual return to training

Return to Sport (24+ weeks)

- ✦ In order to return to match play the player must be able to sprint, accelerate, decelerate, change direction at pace, jump and land on operated leg, solo, kick (from hands and the ground) and tackle comfortably without adverse reaction at the knee.