

# ANTERIOR CRUCIATE

# LIGAMENT RECONSTRUCTION



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## Your ACL:

The anterior cruciate ligament (ACL) is one of the four major stabilizing ligaments of the human knee. The ACL originates from deep within the notch of the distal femur (thigh bone) and attaches to the tibia (shin bone).

Anterior cruciate ligament injury is the most common knee ligament injury, especially in athletes.



## Causes of injury:

The ACL is often torn during sudden dislocation, torsion or hyperextension of the knee. Commonly patients report hearing the “pop”, but pain at the time of injury can vary from moderate to severe. In the hours following ACL rupture most patients notice progressive swelling. ACL tears typically occur in sports where cutting, twisting and turning is common, such as skiing, gymnastics, football and soccer.

The most common causes of ACL rupture can be divided into three classifications:

- Environmental
- Anatomical
- Hormonal

### **1. Environmental causes:**

Sports, which include running and jumping, pose the most potential injury to the athlete. The risk for rupture of the ACL does not increase in contact sports.

### **2. Anatomical causes:**

ACL injuries are especially common in female athletes. Statistics show that females are now eight times likely to tear their ACL than male athletes. One potential cause is woman’s preferential use of the quadriceps muscle for jumping as compared to the hamstring in men, which provides an opposing force that decreases angle formed by woman’s hips and her knees, the ligament are generally under more stress than those of a man are.

### **3. Hormonal causes:**

High levels of specific hormones have been associated with an increased risk of ACL rupture. Oestrogen is one of these hormones.



## Symptoms of injury:

- An audible “pop” or “crack” at the time of injury.
- The feeling of instability.
- Pain and swelling.
- Restricted movement; especially an inability to fully straighten the leg.
- Positive signs in the anterior draw set and Lachman’s test (performed by your doctor, Dr. Mike Barrow or physiotherapist).

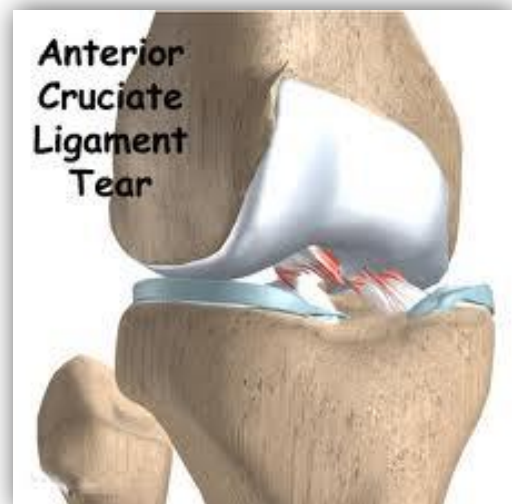
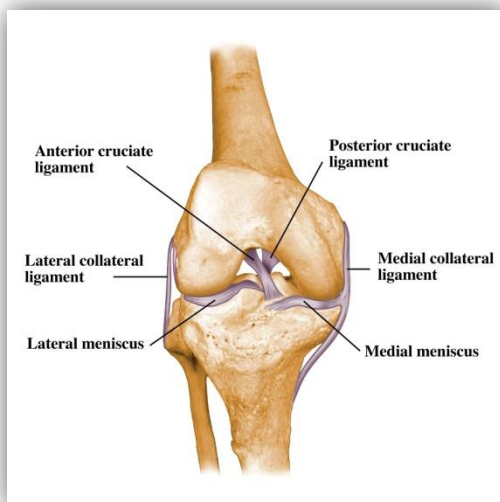
An ACL rupture can be confirmed through a MRI scan.

## Treatment options:

Treatment for an ACL rupture can either be surgical or non-surgical depending on the extent of the injury.

Surgical options will be recommended if the knee gives way during daily activity, showing functional instability, or if the patient is hoping to participate in high-risk sporting activities again. Reconstructive surgery may also be advised if there is damage to the meniscus (cartilage).

A complete tear of an ACL does not heal itself.



## What does surgery involve?

Surgery is performed under a general anaesthetic and takes approximately an hour and a half. Surgical reconstruction of the torn ACL is usually performed using one of three techniques:

- Hamstring tendon.
- Bone patella tendon bone.
- Allograft / cadaver tendons.

The new graft will replace the torn ACL.

## Complication of surgery:

- Decreased sensation down the shin bone (usually temporary).
- Infection.
- Deep vein thrombosis.
- Knee stiffness.

## Post-operative guidelines:

### General advice:

- Expect a certain amount of pain and swelling. Use your analgesia and / anti-inflammatories as prescribed by Dr. Mike Barrow.
- Keep the leg elevated as often as possible (especially during the first week after surgery) and apply cryotherapy (ice) as instructed by your physiotherapist.
- Wear your anti-thrombotic stocking for about ten days post-surgery.
- Refrain from driving: two weeks after reconstruction, when driving a manual and ten days after reconstruction, when driving an automatic. (Consult with Dr. Mike Barrow or physiotherapist before-hand).
- Take your rehabilitation seriously and understand that the time till your return to full functional activities and most sports and the level thereof, depends greatly on your compliance.
- This return in most cases will take between six to nine months.

### Crutches:

- The usual period with two crutches is approximately two weeks, where after one mobilises with one crutch for a further one week. Your physiotherapist will guide you accordingly to your progress.



### Brace:

- The brace must be worn for approximately two to three weeks when walking.
- The brace must be worn for two weeks when sleeping, or till your physiotherapist is satisfied with your knee extension (straightening).
- You may remove the brace for exercising and showering.
- The brace must be locked at 0° for the first one to two weeks whilst sleeping.
- During the day the brace must be unlocked at the allowed degree of flexion set by your therapist.
- If there is associated Meniscal or other ligamentous damage the brace may need to be worn for a longer period.

## Rehabilitation programme:

- The aim of rehabilitation in the first two weeks is to control pain and swelling, improve range of movement and improve muscle activation.
- You can bend your knee as far as your pain allows and you should try and bend it more each day. Forced movement is to be avoided.
- Your rehabilitation programme with your physiotherapist needs to start within the first week post-surgery.
- Initially the following exercises should be done twice daily:
  - Knee extension exercises. Sit with straightened leg, heel supported on pillow (when in bed), or on a chair (when sitting), and let gravity assist.
  - Combine with ice application.
  - Foot pumping exercises.
  - Straight leg raises.
  - Quadriceps setting.
  - Knee bending. Sit in chair, place foot on a magazine and slide foot towards yourself (underneath the chair) and away repeatedly and slowly.

Rehabilitation and exercises will be progressed over three to four months as your physiotherapist feels appropriate.

You may then be referred to a biokineticist for a further two to three months.

## Woundcare:

Leave the dressing on until your follow-up appointment with Dr. Mike Barrow. Do not get the dressing excessively wet.

