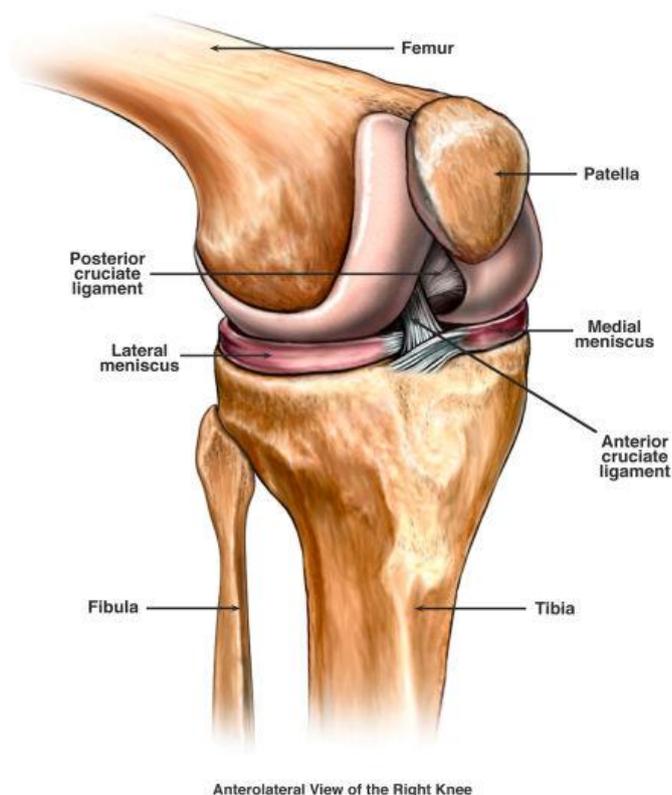


Orthopaedic Department

Management of acute knee injury

Introduction

This information aims to guide you through the process of what happens after injuring your knee. It outlines what types of injuries there are, how a diagnosis is made, and what treatment is possible.



The knee

The knee is a complex joint between the thigh bone (femur) and the shin bone (tibia) with the kneecap (patella) sitting in front. It is held together by ligaments and surrounded by a joint capsule which encapsulates the joint lubricant fluid.



Patient Information

What are the most common types of knee injury?

- **Simple sprain** – by twisting or overstretching, ligaments can be stretched but remain intact;
- **Torn ligaments** – the anterior cruciate or posterior cruciate or collateral ligaments can be torn;
- **Torn meniscus** – damage to the ‘footballer’s cartilage’ cushion between the bones;
- **Dislocation of the kneecap** - ‘patella dislocation’;
- **Articular cartilage injury** – damage to the smooth articulating lining of the knee, the bearing surface.

How are injuries diagnosed?

In clinic the specialist knee surgeon, or a member of the knee team, will examine your knee. You will be asked about the exact mechanism of the injury and what has happened previously, if anything. The appropriate management for your problem is then decided. You may need to come back once any swelling has reduced to allow the knee to be re-examined or you may need to go for further X-rays and scans (MRI).

The key to diagnosis is often establishing how the injury occurred. The following table describes activities which can cause common types of injury

	Description	Injury
	Unusual level of activity on your knees compared to normal Injury not severe enough to cause damage	Sprain or upset of previously worn knee
	Non-contact Twisting movement with foot on ground May feel a pop Unable to play on	Anterior cruciate ligament rupture
	Force on a bent knee either by falling or when the shin hits the dashboard in road traffic accidents	Posterior cruciate ligament partial or complete rupture
	Contact sporting injury Blow onto the side of the knee	Medial Collateral ligament (MCL) or Lateral Collateral ligament (LCL) sprain
	Weight bearing Twisting injury Knee then locking	Meniscus tear

Patient Information

What are the common injuries?

Anterior Cruciate Ligament rupture (ACL)

The anterior cruciate ligament stops your shin moving forward compared to your thigh bone. Normally when you twist on the knee everything turns together. When the ligament is torn the knee buckles as you try and pivot or twist, so that you no longer trust it.

Following the injury your knee may have been painful and swollen and afterwards your knee may give way again and feel less trustworthy.

On examination there may be excessive movement found in the knee. The two main tests are called the **Lachman test** and the **Pivot Shift test**.

Posterior Cruciate Ligament rupture (PCL)

The posterior cruciate ligament stops your shin bone moving backwards in relation to your thigh bone. When examined with your knee at a right angle, your shin bone will sag backwards compared to your other side or the surgeon can move it excessively.

Medial or Lateral Collateral Ligament rupture or partial tear (MCL or LCL)

The medial and lateral collateral ligaments lie on either side of the knee and stop it moving sideways too much. If the medial collateral ligament is damaged there may be pain on the inner side of your knee, following the line of the ligament. The knee may feel wobbly and when examined it is painful as the surgeon pulls your leg sideways. If the lateral collateral ligament is damaged there may be pain on the outer surface of your knee, with some giving way. On examination you may feel pain as the lower leg is moved inwards.

Meniscus tear

The meniscus or 'footballer's cartilage' lies between your thigh and shin bone and acts as a shock absorber when you bear weight. You have two – one on the outer lateral side and one on the inner medial side. When the knee is examined there is specific tenderness on the joint line between the bones. There may be swelling found in the knee and sometimes the knee can transiently lock (meaning that it won't go fully straight) as the torn fragment gets caught.

Patellar dislocation

The patella or kneecap acts to increase the leverage of your knee when straightening your leg and it slides over your thigh bone as you bend and straighten. Your kneecap may dislocate or feel unstable following an injury, or you may describe the feeling of your kneecap dislocating repeatedly. Usually, specialist help from A&E is needed to put it back in its place if it doesn't reduce spontaneously. On examination your patella will feel unstable as if it might dislocate again. This is called the 'apprehension test'.

What can be done to treat my knee?

There is a lot that can be done for injured knees, from simple treatments to complex surgery. It all depends on the nature and seriousness of the injury and what your aims and expectations are.

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Options include:

- Protection using splints and knee braces
- Rehabilitation through physiotherapy and targeted exercises, combined with painkillers
- Surgical repair or 'keyhole' surgery (arthroscopy)

ACL injury or rupture

It can be difficult to return to pivoting impact type sports such as football and rugby without a good functioning ACL. The ligament does not heal very well on its own to allow fast pivoting. Therefore, typically, the ligament is reconstructed using tissue from around your knee, rather like Michael Owen when he tore his ligament playing football a few years ago.

This surgery is performed once the swelling from the acute fresh injury has settled and when the range of movement has returned to nearly normal. Physiotherapy is important to help regain that movement and sometimes the knee is rested in a knee brace. An MRI scan may need to be arranged.

PCL injury

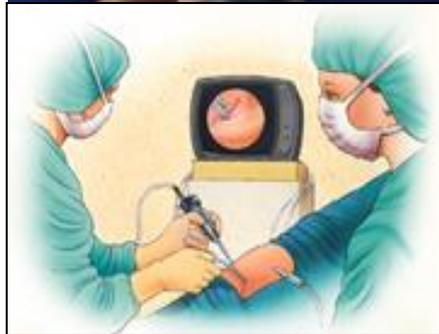
Usually the PCL can heal and surgery is not necessary. Initially a knee brace is used to support the healing, followed by physiotherapy and strengthening exercises. However some knees will still feel unstable and then surgery can become an option – rebuilding the ligament using other tissue from around the knee. Once again it can take a long time to get back to sport.

Collateral ligament injury

MCL sprains (medial ligament injury) usually heal well and do not need surgery. There are different grades of injury and simple injuries just need physiotherapy and time – perhaps six weeks to fully recover. More significant injuries may need a supportive brace for four to six weeks and it can take up to three months to get back to sport after rehabilitation. It is uncommon to need surgery. However, if the ligament is completely torn in combination with tearing the anterior cruciate ligament then surgery is more likely to be required.

Meniscus tear

The menisci are the C-shaped cushions in your knee. They tear by being trapped between the thigh bone and the shin bone. Small tears can settle on their own over six weeks or so and may not need any surgery. Some tears however don't heal on their own and continue to cause intermittent pain on the side of the knee during activity. The small torn portion can then be removed with keyhole surgery (arthroscopy). Sometimes the fragment is large enough to block the knee going straight and this is called a 'locked knee'. If this happens then more urgent arthroscopic surgery is needed and it



Arthroscopy involves placing a small camera inside the knee. Instruments inserted through a second small incision then treat damage within the knee, while the image is viewed on the monitor.

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may be possible to repair the torn cartilage back into place. Not all tears can be repaired and it is more usual to remove the small torn fragment.

The cartilage does not have a good blood supply which is why most tears do not heal. Removing the torn part may cause long term problems but it depends on how much was removed.



Repair of torn meniscus

Patellar dislocation

There are various reasons why your kneecap is more likely to dislocate, or feel like it is going to dislocate or give way, and this dictates how it can be managed. Management includes the use of a knee brace to hold the kneecap in place and physiotherapy to strengthen the surrounding muscles and ligaments. Surgery can be used to change the way the kneecap moves compared to the other structures around it.

Articular cartilage injury

The articular cartilage is the smooth layer that covers the bones in your joints and stops your bones rubbing together when you move. Cartilage can be damaged in injuries or through wear and tear, and can cause pain, swelling and giving way.

To assess the damage to your cartilage you may need to have an arthroscopy. There are then several options for treating the area of damage. This may involve removing the damaged part and tidying the area up, or using other techniques such as microfracture or cartilage transplantation.

What can I do to help my knee in the future?

There are several things that you can do to help the knee including:

- Regular exercise including stretching to maintain a good level of fitness
- Increase leg muscle bulk through exercise
- Weight loss to limit loading of your knee
- Look after your knee (if injured) with: rest, ice, compression and leg elevation
- Wear support braces during non-contact sports.

Further information

If you require further information or have any more questions, please use the details below.

Telephone: 024 7696 4000 (Main Hospital switchboard)
Ask for Orthopaedic Department

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Patient Information

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The Trust has access to interpreting and translation services. If you need this information in another language or format please contact 024 7696 5098 and we will do our best to meet your needs.

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