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## Orthopaedic Surgery and Sports Injuries

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### ANTERIOR CRUCIATE LIGAMENT INJURIES PRE-OP PATIENT INFORMATION

Your anterior cruciate ligament (ACL) crosses from the back of your femur (thighbone) to the front of your tibia (shinbone). It acts as a strong brace and is one of the most commonly torn ligaments in the knee.

Injuries to the ACL usually occur when you twist your knee too far or there is a sudden change in direction or speed and often occurs without contact, either at sport or at work.

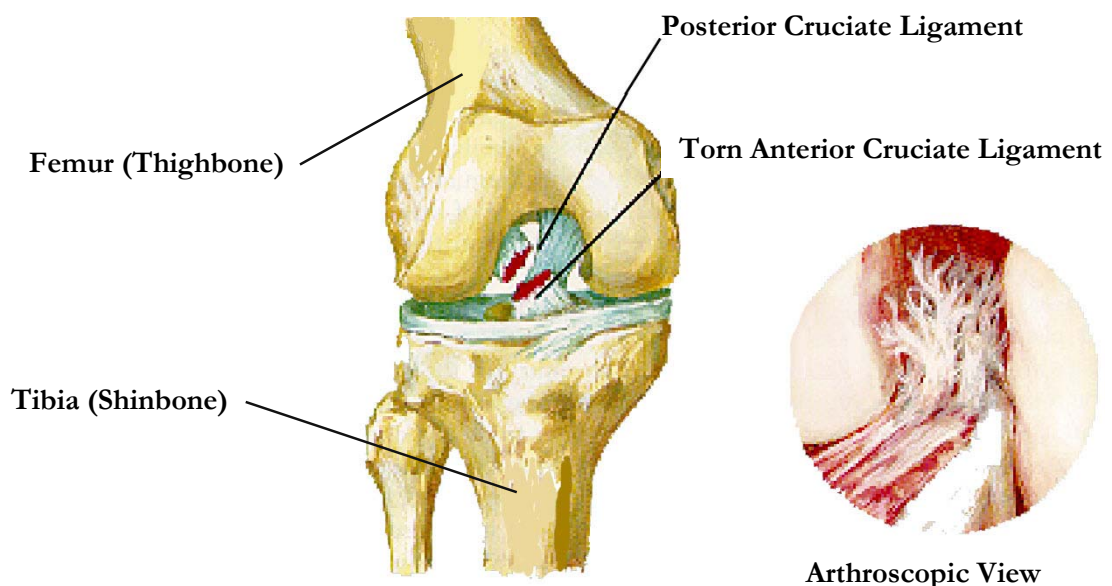
The individual will often hear a 'pop' or the sensation of something tearing inside the knee. The knee may feel as if it has momentarily 'come out of joint'. This is usually followed by immediate swelling, difficulty walking and pain.

Untreated, a significant number of knees go on to give problems in the form of **instability** and recurrent giving-way of the knee. This is particularly so on uneven ground or when attempting to side-step or twist on the knee at sport.

People who injure other ligaments in addition to the ACL as well as younger, active people are **more likely** to develop instability problems.

For patients who would consider giving up sport if it meant that an operation would not be required, a **physiotherapy programme** may provide sufficient stability for daily living. However, for active patients, who would not consider giving up sporting activities, it is generally agreed that a surgical reconstruction will provide the best chance of continuing their sporting and recreational activities and ending up with a stable knee.

Patients with an untreated (unreconstructed) ACL tear **must** avoid recurrent giving-way and buckling of the knee. These episodes cause cartilage tears and premature wear and tear resulting in arthritis of the knee.



### Anterior Cruciate Ligament Reconstruction

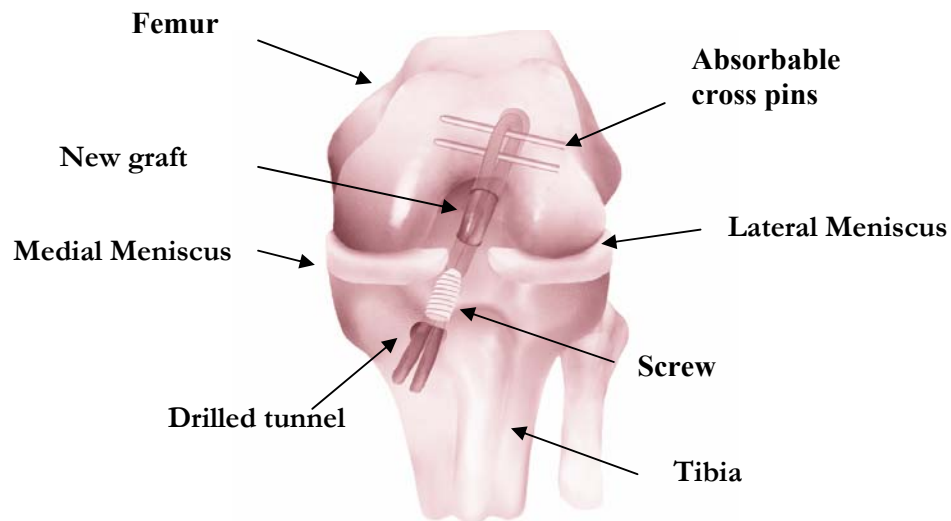
Once the ACL is torn it will **not** heal. The operation replaces your torn anterior cruciate ligament (ACL). A graft is taken and placed into tunnels created within the bones in your knee to form a 'new' ACL to restore stability in your knee. Patellar tendon (from the front of your knee) or hamstring tendon (from the inner side of your knee) is taken and 'transplanted' to replace the torn ligament. This is done **arthroscopically** – by using a tiny camera inside small incisions around your knee. This means you should experience less pain and scarring. Movement of your knee is easier to regain and your post-operative progress is also much quicker. Using this method enables all the structures (including the cartilages) within your knee to be examined and if necessary, treated at the same time.

#### Pre-Op

You should have a pre-op physiotherapist appointment to help prepare you for the surgery. You will be instructed in partial weight-bearing on crutches and in the exercises you will be required to do immediately following the surgery (cocontractions, leg lifts with the knee extended, icing the knee). You should be fitted with crutches which should be brought into hospital with you.

#### The Operation

A hole is drilled into your tibia (shin bone) and into your femur (thigh bone) and the replacement tendon (graft) is placed within these holes in the same position as your original ACL. Screws or Cross Pins are used to secure the graft.



**After your operation** you will have a drip in your arm for pain medication and antibiotics. You will need one night in hospital, although it is possible to leave hospital the day of surgery.

The initial fixation strength is sufficient to allow early movement and exercise. Splints are not usually necessary. **Crutches** are required for 1 – 2 weeks following the reconstruction. You may return to light work duties after 1 week. You will not be fit to return to work that involves prolonged standing, heavy lifting, bending or excessive stair climbing for a minimum of 4 – 6 weeks.

Once you are off crutches, you can begin driving. The physiotherapist in hospital will instruct you on the use of crutches and will give you the required **exercise programme** that is begun immediately following the surgery. Much of the exercise programme can be done at home or at a gym, under your physiotherapist's guidance.

The ends of the new graft will heal into the newly created bony tunnels over 6-12 weeks. Over this period however, the strength of the new graft actually decreases. This is due to the new blood supply into the graft removing some of the main structural fibres from it. It is believed that the graft is at its weakest at 8 weeks following your surgery, so care must be taken at this stage despite the fact that your knee will feel quite good by then. Following this period the graft will gradually increase in strength as new structural fibres are laid down. This is a slow process and can take up to 12-18 months to be fully completed. The results of ACL Reconstruction surgery are good in ~ 95% of cases. The surgery has potential risks and complications. These include infection and stiffness of the knee and re-rupture of the graft. By **6 months** the knee is usually strong enough to resume all sports.