



PATIENT INFORMATION

Guide to Anterior Cruciate Ligament (ACL) Reconstructed Knees

Introduction

This handout serves as a general guide through your patient experience following your Anterior Cruciate Ligament (ACL) operation. It will provide you with a better understanding of the general care that you will receive, but there will be some variations, as you are an individual and protocols may vary between consultants.

Remember that everyone is different and some will advance faster than others.

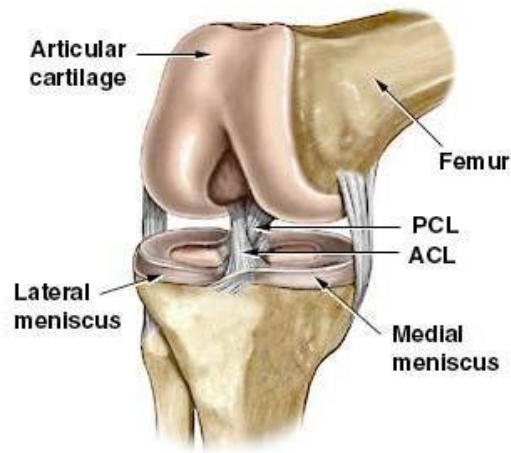
The major goals of ACL surgery and rehabilitation are:

1. Restore normal joint anatomy,
2. Provide static and dynamic knee stability
3. Return to work and sport as soon as possible.

If you have any concerns or questions please let your consultant or physiotherapist know as soon as possible.

Anatomy

Ligaments are tough bands of tissue that connect bones together. The Anterior Cruciate Ligament (ACL) is located in the centre of the knee joint. It originates from the back edge of the femur (thigh bone) and inserts to the front edge of the tibia (shin bone). This helps to stabilise the knee, mainly in the forwards and backwards directional planes. In addition to this mechanical stabilisation, the ACL provides important neurological feedback that informs your brain to what position your knee is in. This is called proprioception. Proprioception diminishes following this injury, but is significantly restored following surgical ACL reconstruction and rehabilitation.



Causes of Injury

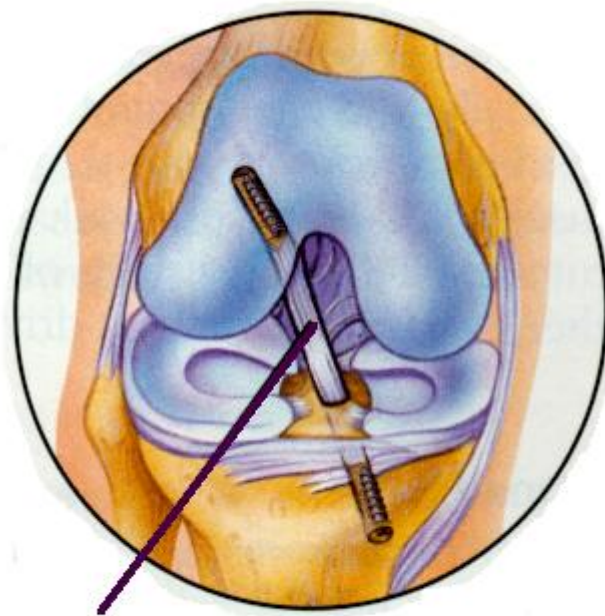
The majority of Anterior Cruciate Ligament (ACL) injuries are caused in sport. Sports that require the foot to be planted and the body to change direction quickly are often associated with this injury. An audible pop, crack or snapping sensation is felt, usually associated with some pain. Swelling around the knee may follow immediately post injury, which is due to bleeding within the joint. It can be difficult to walk or run following these events, and after a few weeks the knee may feel unstable. This instability may prevent a return to sport and this may be why surgery is required.

The Operation

Most ACL reconstructions are carried out as day case surgery. This means you will be admitted on the morning of your operation and discharged home later the same day. Very occasionally an overnight stay is required.

A complete tear of the Anterior Cruciate Ligament (ACL) has a minimal ability to heal and may require surgical intervention. A typical ACL operation may take place as follows:

1. Under anaesthetic the knee is examined thoroughly.
2. A tourniquet may be placed around the thigh.
3. The graft is taken. For example, this may be two hamstring tendons or the middle third of the patella tendon. The sites of the incision will depend upon the graft. Your surgeon will discuss this prior to surgery.
4. Small incisions are made at the front of the knee. These will be used to insert the arthroscopy scope and surgical instruments.
5. The torn ACL is removed along with treatment for other associated injuries such as torn menisci (cartilage).
6. Tunnels are drilled into the tibia and femur and graft attached.
7. The wound is then closed and a bandage applied before you go to the recovery room.



ACL Graft

After the Operation

Hospital Stay

The knee is generally not braced or immobilised following the operation unless agreed before hand. You may wake up with a small IV drip and a needle placed in the back of the hand to ensure an adequate fluid intake.

The physiotherapy department may provide and teach you the safe use of elbow crutches and their use on the stairs. It is often recommended to use these for a period of one to two weeks.

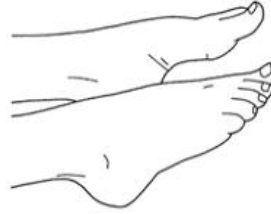
They will also go through a swelling control regime using ice packs or frozen peas wrapped in a towel. This cold pressure is applied around the knee.

An exercise regime can be started immediately following your operation:

1. Deep breathing exercises – 3 deep breaths, in through the nose and out through the mouth every hour.



2. Wriggling your toes and ankle pumps – Try to pump your ankle up and down, 15 repetitions, every hour.



3. Full passive extension – Use a heel prop or folded towel under the heel to allow the knee to fully straighten – To do this, start with a short stretch as pain allows and to increase as able up for up to 20 minutes – 3-6 times per day.



4. Static quadriceps holds – Lying or sitting on a bed. Squeeze the thigh muscle to push the knee into the bed. Try to hold this muscle contraction for 3 seconds. Aim for 15 repetitions, 3-6 times per day.



5. Active knee bends – Lying or sitting on a bed. Gently slide your heel up the bed. Keep your heel in contact with the mattress at all times. Aim for 10-15 repetitions, 3-6 times per day.



Discharge to Home

Discharge criteria may include:

- Your wound and general recovery is satisfactory
- You can walk safely on the crutches
- You have good muscle control
- You will have an x-ray before you are discharged and will be advised on follow up outpatient physiotherapy

Once Home

The first week is paramount to your overall recovery, and your priorities must be to control the swelling and to gently regain your movement. We encourage short periods of light activity during this recovery phase, but it is also important to have some time to rest.

We will ask you to:

- Continue to have your heel resting on a rolled towel or small table whilst sitting. This will help regain your full knee extension, and elevation will help reduce the swelling
- Ice – Crushed ice placed in a bag, and rolled up in a towel for 10-15 minutes, 3-5 times per day can be very beneficial in reducing swelling. It is essential that you check your skin every few minutes to monitor any possible side effects. Ice is also a good tool for extra pain relief.
- Compression – If you have had an ACL reconstruction that is not required to be braced following surgery, the team are happy that the bandage can stay on for 48 – 72 hours post operatively, and then to de-bulk this bandage afterwards.

Driving

Very little information exists in the current literature about the ability of an injured or reconstructed ACL to respond to specific stimuli such as braking quickly whilst driving a car. A recent Australian study suggested that patient who underwent a right ACL reconstruction should wait till at least 6 weeks following their surgery. However patients who underwent a left knee ACL reconstruction (the clutch operated leg) returned to driving sooner. In both cases it is **strongly** advised to discuss this issue with your consultant and contact your insurance company to ensure that you are covered before returning to driving.

Return to Work

This will depend upon the type of job that you do. Someone involved in a sedentary seated job may be able return to work at the 6 week mark. However if your job is more active, involves kneeling, squatting or heavy lifting it may be at least 12 weeks until you are fit to return. Again, in all cases this needs to be discussed with your surgeon and physiotherapist.

If your job involves kneeling it may also be a good idea to invest in quality work based knee pads.

Sports

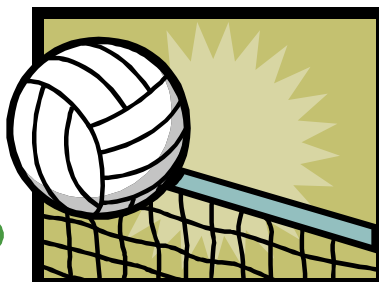
Your physiotherapist and consultant will help give you a more individualised guide for returning to your sport.

Swimming can be started usually at the 6-8 week mark. It is recommended to start off just using your arms and have a float or pull-buoy placed between your legs. A crawl kick can then be introduced at the 12 week mark, and a return to breast stroke legs should be avoided for at least 4-6 months.

Running can be commenced with your physiotherapist from the 11-12 week mark. It will depend upon your progress and rehabilitation that your physiotherapist has monitored.

Golf can be gently resumed again at the 4 month mark, but again it is best for you to discuss this with your physiotherapist first.

Contact sports, such as football, rugby, surfing, and skiing are decided on an individual basis with your consultant from the 9 month mark onwards.



Post-Operative Rehabilitation

Post operative physiotherapy is a major factor in the overall success of your ACL reconstruction. **Regular attendance and compliance with your home exercise programme will play a major step in working towards and meeting your rehabilitation goals.**

The aim of the post-operative physiotherapy programme is to:

1. Reduce swelling of the knee.
2. Achieve full movement of the knee.
3. Increase strength around the knee.
4. Improve balance / proprioception.
5. Return to full function and sport.

Please contact your local physiotherapy department to arrange your outpatient follow up appointment using the contact details below.

It can be really helpful if access to a gym is available. There are a number of private and council run gyms around this area. There is also the Healthy Lifestyles Initiative that provides a reduced cost access to local gyms. The website: www.tsdhc.nhs.uk (search for lifestyles team) and this can help decide if you would like to take part.

Contact Details

Name	Email address / Number
Physiotherapy Outpatient Appointment	www.sdhct.nhs.uk/physiopkb
Physiotherapy Booking Line Torbay, Paignton and Brixham	0300 456 9987
Physiotherapy Booking Line Newton Abbot, Teignmouth, Totness, Dawlish, Dartmouth, Bovey Tracey, Chillington, Ipplepen, Kingskerswell and Ashburton	01626 883765
Orthopaedic Physiotherapy Team	01803 654 528
Day Surgery Unit	01803 654 055 / 01803 655972

References

- PRICE Guidelines – Chartered Society of Physiotherapy – www.csp.org.uk
- A Guide to Anterior Cruciate Ligament Reconstruction – Portsmouth NHS Trust, Portsmouth
- A Guide to Accelerated Rehabilitation of Anterior Cruciate Ligament (ACL) Reconstructed Knee – Jonathan Webb Clinic, Bristol
- Anterior Cruciate Ligament Reconstruction Rehabilitation Protocol – Orthopaedic Athletic Performance Therapy, Portland, Maine
- This programme a guide is based upon the accelerated principles and extensive experience of *Donald Shelbourne MD* and *Mark De Carlo, MHA PT SCS ATC*, of the Methodist Sports Medicine Center, Indianapolis, Indiana.