NHS
Royal Surrey
County Hospital
NHS Foundation Trust

Anterior Cruciate Ligament Reconstruction

Physiotherapy Department

Patient information leaflet

This patient information booklet is designed to provide you with information about the Anterior Cruciate Ligament (ACL) reconstruction operation. It is designed to help you prepare for the operation and to answer some frequently asked questions. Please read the booklet carefully and ask your Physiotherapist if you are unsure about any of the information or have any further questions.

What is the Anterior Cruciate Ligament (ACL)?

There are four main ligaments in the knee joint which join the femur (thigh bone) to the tibia (shin bone). There is one ligament either side of the knee, and two within the knee, which help to make the joint stable.

The ACL lies in the centre of the knee joint and attaches to the front of the tibia (shin bone) and the back of the femur (thigh bone). It is one of the main stabilising ligaments, helping to prevent forward movement of the tibia on the femur, therefore preventing giving way of the knee.

The ACL is also important in providing information to the brain and muscles to control knee movement and balance (this is called proprioception).

The ACL is typically injured in a non-contact twisting movement and common in sports such as football, rugby, skiing etc. Injury makes the knee lax and unstable, often causing it to give way in everyday activities and during sports.

What are the aims of ACL Reconstruction surgery?

- To improve stability of the knee/prevent giving way
- To enable return to full function including contact sports

Are there any alternatives to surgery?

ACL injuries can either involve a partial tear of the ligament or a complete rupture.

These can be treated with a course of Physiotherapy to build up the muscles around the knee and improve proprioception. This can improve the stability of the knee and prevent an operation being necessary. In severe cases the knee may be too unstable and the ACL needs to be reconstructed.

What do I need to consider before deciding to have the operation?

You should fully understand the commitment needed to undergo the surgery and twelve month rehabilitation program. It will be necessary for you to arrange life (including work) around the rehabilitation before you agree to surgery.

It is important to maintain as much movement and strength as possible in the injured leg pre-operatively. Your Physiotherapist can give you advice regarding specific exercises / gym workouts that are appropriate. Try to avoid any activities which cause giving way or instability of the knee.

What happens during the operation?

The ACL can be reconstructed using a variety of methods which vary depending on the surgeon.

The reconstruction involves replacing the ACL with a graft. The most common tissues to be used are either two tendons from the back of the thigh (hamstrings), or part of the tendon from the front of the thigh (patella tendon). The graft is normally harvested by a small incision on the inside of the knee and the operation continued by two small arthroscopic (keyhole) incisions. The graft is held in place by metal screws or staples which do not need to be removed.

The operation usually lasts 1–2 hours under a general anaesthetic.

Research has shown 80–90% of patients have improved function of the knee following the surgery and rehabilitation.

What are the possible complications of surgery?

Infection

Antibiotics will be given to minimise the risk.

Deep Vein Thrombosis (blood clot in the vein of leg)

Early movement helps to prevent this. In higher risk patients anticoagulant (blood thinning) medications will be used.

Failure of Graft/Fixation

This is extremely rare, but occasionally the body does not accept the graft or it becomes dysfunctional. In this case, further investigations would be carried out.

Patella Pain

This can occur (usually after a patella tendon graft), particularly on squatting/kneeling for up to two years after surgery.

Lack of confidence/stability in the knee

The operated leg may not "feel right" for some time and may not feel stable enough to allow return to full sporting activities. Rehabilitation aims to address this.

Swelling

Swelling is very common after ACL reconstruction. It is essential that you rest with the leg elevated, as much as possible, for two weeks after surgery. You will also be advised to use ice packs on the knee regularly and wear a tubigrip (elastic bandage) during this two week period. This will speed up the recovery of muscle strength and movement of the knee following the operation.

Rehabilitation

This will be supervised by your Physiotherapist. You will be seen by the Physiotherapist on the ward and then regularly as an outpatient. They will give you advice about minimising swelling, and the safe use of crutches. They will also give you exercises to regain full movement, muscle strength and function.

There is a protocol of rehabilitation based on current recommendations. The protocol is used as a guide which your Physiotherapist may adapt to you as an individual.

The overall rehabilitation plan aims initially to minimise swelling and regain full movement, particularly extension. Strength and balance exercises are then started focusing on the whole lower limb, incorporating the hip, knee and ankle.

This booklet is a guide only. Patients and post-surgery recovery vary; therefore the exercises will be tailored to you as an individual.

After the operation

You will have:

- A light bandage on your knee. Unless told otherwise, this should be removed 48 hours after the operation. Keep the small dressings clean, dry and intact.
- Analgesia (pain relief) regularly encouraged to ensure exercises and mobility carried out comfortably
- Ice/cold packs to minimise swelling

Your Physiotherapist will see you either before or after your operation and give you advice to start moving and strengthening the knee and to teach safe mobility on crutches including up/down stairs.

Physiotherapy exercises

Aim to complete these exercises 4 times daily

1. Ankles

Move ankles up and down in a pumping action to improve circulation.

Repeat ..... times.

2. Quads Sets

(muscles at front of thigh)

With the knee straight, pull the toes towards you and brace the knee to tighten the muscles at the front of the thigh.

Repeat ..... times.

3. Hamstring Sets

(muscles at back of thigh)

Bend the knee slightly; push the heel down directly into the bed, to tighten the muscles at the back of the thigh.

Repeat ..... times.

4. Heel Slides

Slide the heel towards the buttock bending the knee to 90 degrees, (a right angle), then straighten again.

Repeat ..... times.

5. Hanging Out

Rest the heel on a pillow (or rolled towel) leaving a gap under the back of the knee. Keeping the knee straight let the leg relax and "hang" to stretch out the back of the knee.

Hold ..... mins.

Stairs – technique on crutches

One step at a time

Going Up:

Non-operated leg first

Followed by operated leg and crutches

Going Down:

Crutches first

Followed by operated leg

Followed by non-operated leg

Remember:

"Good leg up"

"Bad leg down"

When will I be able to go home?

Routinely, the operation is performed as a day case with the aim for you to be discharged home on the same day.

You will have a follow up outpatient physiotherapy appointment arranged for you.

After discharge home

Exercises

You should continue the exercises you have been shown on the ward (as per page 6 & 7 included in this booklet) at least 4 times every day. Achieving and maintaining full extension (straightness) of the knee.

Hanging Out

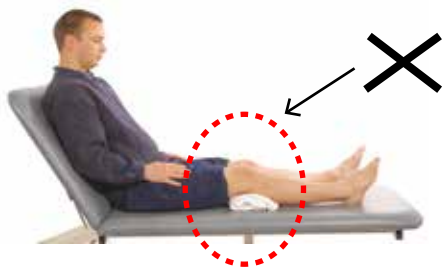
1. The same as exercise 5 on page 7 and:

2. Lie on your front with both knees and lower legs off the end of the bed. Let the leg relax and "hang" to stretch out the back of the knee.

You should alternate resting in both these positions for short periods as often as you can throughout the day to achieve and maintain full extension of the knee.

Rest and Elevation

You should rest lying down with the leg straight and elevated (leg higher than heart) as much as possible throughout the day to minimise swelling. When resting without elevating, the leg should be kept straight and level.



Do not rest with a pillow under the knee.

Ice/cold packs

You should continue ice/cold packs 4 times a day with the leg elevated if required. A bag of frozen peas wrapped in a damp tea towel (to prevent ice burns) can be used for 10 minutes.

Analgesia (pain relief)

It is advisable to take the painkillers you have been given so that you are able to do all of the exercises and weight bear comfortably. You should gradually wean them down as the pain settles or as advised by your doctor.

Tubigrip (elastic bandage)

You should wear a tubigrip as advised by your Physiotherapist during the day. Tubigrip should always be removed at night.

Wound care

You should avoid getting the scar wet until the stitches are removed 10–14 days after the operation when you are reviewed in clinic. You can ask for a waterproof dressing from the nurse on the ward before you are discharged home.

Crutches

You should continue using the crutches until advised by your Physiotherapist that it is safe to walk independently. This is to minimise swelling.

Driving

You are not allowed to drive for 6 weeks following surgery. Please take advice from your Physiotherapist before driving again and contact your car insurance company.

Sleeping

Do not sleep with a pillow under the knee as this reduces extension (straightness) in the knee.

Return to work

As a rough guide you can expect to return to an office job about 2 weeks after surgery.

If you have a physical job, but can return to work on lighter duties that involve minimal walking, you may be able to return at about 4–6 weeks.

More physically active jobs may take up to 3 months to return, particularly if they involve squatting or lifting.

Please follow advice from your Physiotherapist.

Return to sports

If rehabilitation goes well you can return to non-contact sports at approximately 9 months and contact sports at about 1 year following surgery. You must achieve certain goals and have completed specific training relevant to your sport before a safe return.

Please follow advice from your Physiotherapist.

General advice

If you develop pain in your chest or calf; or your wound becomes hot, red, swollen or weeping you should contact your GP urgently, or come to Accident and Emergency at the hospital for advice.

Summary of rehabilitation

Weeks 1–2

- Use pain and swelling as your guide to how much activity the knee can take.

Your Physiotherapist will show you specific exercises to achieve these aims:

- Minimise swelling
- Maintain full extension (straightness) of the knee
- Regain full range of flexion (bend) in the knee

- Regain normal walking without crutches
- Basic strengthening exercises for quads (front of thigh) and hamstrings (back of thigh)
- Basic proprioception exercises
- NO rotational forces through the knee (do not turn or twist on that side)

Your outpatient Physiotherapist will follow guidelines for your ongoing rehab which will be discussed at your first outpatient appointment (1–2 weeks post op) and tailored to you as an individual.

Key reference sources

- National Ligament Registry
  www.uknlr.co.uk
- www.nhs.uk/conditions/knee-ligament-surgery/

Notes

Contact details

For further information or advice, contact the Physiotherapy Department

Telephone: 01483 464153

PALS and Advocacy contact details

Contact details of independent advocacy services can be provided by our Patient Advice and Liaison Service (PALS) who are located on the right hand side as you enter the main reception area. PALS are also your first point of contact for health related issues, questions or concerns surrounding RSCH patient services.

Telephone: 01483 402757

Email: rsc-tr.pals@nhs.net

Opening hours: 9.00am–3.00pm, Monday to Friday

If you would like information documents in large print, on tape or in another language or form please contact PALS.

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