

Anterior Cruciate Ligament (ACL) Reconstruction

Introduction

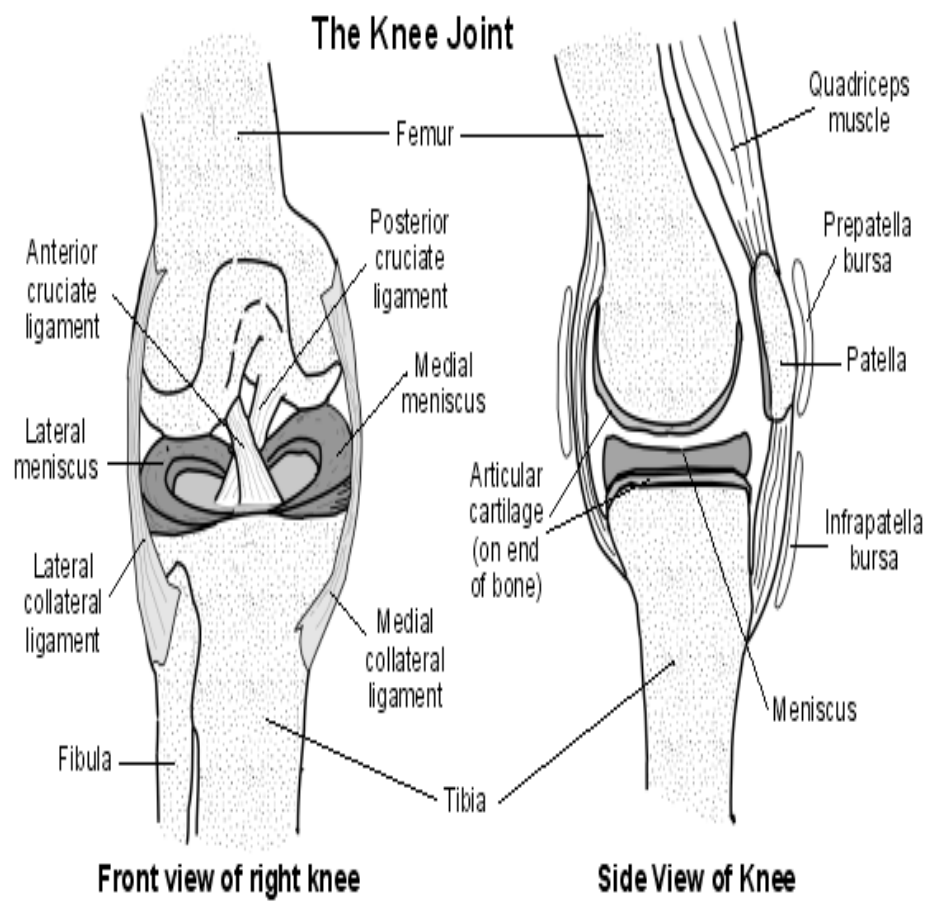
This booklet has been designed to help you understand and recover from your surgery. The information contained within this booklet is a guide only and the timings and activities will depend on your specific circumstances and the surgeon's requirements.

The anterior cruciate ligament (ACL) is an important ligament in your knee joint. This ligament helps to provide stability for your knee joint and the effects of tearing this ligament can be variable. Some patients can still function to a reasonable level following rehabilitation, however, if you feel your knee joint is unstable, gives way on a regular basis or stops you from doing certain activities, you may require surgery. This surgery is known as an anterior cruciate ligament reconstruction.

Your Surgery

The aim of ACL reconstruction surgery is to improve the stability of the knee joint, which in turn will assist with improvement in function and may also help reduce any pain or discomfort. It may also prevent further injury to the knee.

ACL surgery aims to replace your torn ACL with a graft ligament. This may be done by making a graft from either your hamstring tendons or the patella ligament. The latter runs from just below the knee cap to the front of the shin, this procedure is known as a bone-patella tendon-bone graft. The choice of surgery will be dependent on your consultant, as both operations are considered equally successful. The standard length of stay for ACL reconstruction is one night.



Hamstring Tendon Graft

This type of surgery is mostly done arthroscopically (keyhole). Your surgeon will first have a look inside your knee joint, tidy up the ends of your torn ligament and repair or clean up any other areas of damage. A small incision (cut) is then made just below your knee cap over the inside of your shin bone (tibia), part of the hamstring tendons are then removed and used to form the graft. Tunnels are made through the tibia and the thigh bone (femur); the graft that has been prepared from your hamstrings is passed through these tunnels. Once in place it is fixed in position at each end with a small screw or an endo-button.

Bone-Patella Tendon-Bone (BPTB) Graft

This procedure is similar to the hamstring operation described above. The main difference is that the graft for the new ligament is taken from the patella tendon. In this operation a long incision is made over the front of your knee and the graft is taken from the middle part of the patella tendon.

Complications

- Infection – this can occur with any form of surgical intervention. Precautions are always taken during surgery to reduce the risk, however if infection does occur this can be a serious problem. You may require further treatment with medication or even further surgery if this happens
- Stiffness – following surgery to your knee joint there is always a risk of increased stiffness. This may happen due to the formation of scar tissue, which can restrict knee bending or straightening.
- Bleeding – this can occur and it may be necessary to aspirate (remove blood/fluid from) the joint
- Blood clots - surgery to the leg can sometimes cause a clot to form in the veins. To prevent this keep moving your legs and practice the exercises at the end of this leaflet.
- Incomplete Resolution of Symptoms – in some cases the surgery is not sufficient to resolve the instability problem. If this is unfortunately the case you may have similar problems to those you experienced prior to surgery.

- Graft Failure - if too much force is applied to your graft too soon there is a chance that the graft may fail resulting in further problems and maybe further surgery.
- Anterior Knee Pain - with the patella tendon graft, patients sometimes complain of increased pain at the front of the knee.
- Hamstring Problems - with the hamstring graft patients sometimes complain of hamstring problems.
- Nerve injury. Nerves can be at risk during hamstring graft harvest. This can lead to numbness along the inside of the shin.
- Patella fracture or tendon rupture. The harvest of a patella graft can weaken the extensor mechanism allowing further injury.

Health Promotion

It is essential that you are in the best of health possible to reduce the risks from having an anaesthetic and to help with your recovery. It is very important that you prepare yourself for surgery as best you can. If you are unwell at any stage prior to surgery, call your Consultants secretary to discuss further.

Pre-Assessment

You may be asked to attend the hospital during the two weeks prior to your operation for a general health check. Alternatively, this health check may be undertaken over the phone.

If you are asked to come to the hospital please bring an up to date list of any present medication, this can be obtained from your GP.

Fasting

You will be asked not to eat or drink anything for 6-12 hours before your operation. This will let your stomach empty to prevent you from vomiting during your operation.

Timing of the Operation

The approximate timing of your operation is arranged the day before surgery. Once the operating list order has been confirmed by the surgeon

and anaesthetist, you will be informed of an estimated time of your operation. This may be subject to change at short notice.

Preparation for Going to Theatre

You will be asked to remove all contact lenses, jewellery, watches, make-up and nail varnish. Wedding rings can be covered with tape if they will not come off. (Ideally you should not bring jewellery into hospital with you). The operation site will not be shaved on the ward. If it is necessary, we will shave it in the operating theatre. Dentures will have to be removed once you are called to go to theatre.

Pre-Medication

You may be given a sedative injection or tablets about 1 hour before the operation. This will relax you and may make you sleepy. Once you have had your 'pre-med' you must stay in bed. You should call for a nurse if you need assistance.

Transfer to Theatre

A theatre porter will take you on a trolley to the operating suite. You will be wearing a cotton gown. There will be several checks on your details on the way to the anaesthetic room where your anaesthetic will begin.

Having an Anaesthetic

You will be reviewed by the anaesthetist on the ward prior to being taken to theatre. The anaesthetist will discuss the anaesthetic options available to you, this will be either general anaesthetic or spinal (epidural) anaesthetic. Once the decision on which anaesthetic will most suit you, the anaesthetist will either help you to sleep with a general anaesthetic via an injection in the back of your hand, or perform the spinal (epidural) anaesthetic which will numb you from the waist down.

The operation is then performed.

What Happens After the Operation?

After the operation, you are taken on a bed to the recovery ward for about half an hour. Once you are fully recovered, you will be transferred back to the ward on a bed.

A bandage will be in place over your knee, in some cases you may need to

wear a brace, but this is not always necessary. You may have a fine plastic drainage tube coming out of the skin near the wound, connected to a container which will measure blood loss after the operation.

Warning after a General Anaesthetic

The drugs that we give for a general anaesthetic will make you clumsy, slow and forgetful for about 24 hours. This happens even if you feel quite all right.

For 24 hours after your general anaesthetic: **Do not make any important decisions.**

Will it Hurt?

The knee may be painful. You will be given injections or tablets to control this. Ask for more if the pain is unpleasant. Ice packs may be applied to your knee, this will help to reduce the swelling and aid the pain.

Drinking and Eating

You should be able to drink within an hour or two of the operation provided you are not feeling sick. The next day you will be able to manage normal food, and you must focus on drinking plenty of fluids to ensure you remain hydrated.

Passing Urine

It is important that you pass urine and empty your bladder within 6-12 hours of the operation. You will need to use a bottle or a bedpan with help from the nurses at first.

The wound and stitches

The wound will have a simple adhesive dressing over it.

If you have drains, the nurses will remove your wound drain one day after your operation by pulling it out.

Your wound will be closed by either a continuous stitch under the skin or clips (similar to staples). The continuous stitch is dissolvable and will not need to be removed, or staples will be removed at 10-12 days post op. These will be removed by either your practice nurse or the district nurses. Removal of stitches and wound monitoring will be organised prior to your discharge from hospital.

Washing

Wash around the dressing for the first ten days. You can wash the wound area as soon as the dressing has been removed. Soap and warm tap water are entirely adequate. Salted water is not necessary. You can shower as often as you like.

What About Informing my Relatives and Contacts

With your permission, the nurses will keep your relatives and contacts up to date with your progress. However, please help minimise the number of phone calls to the ward. Organise a few key people who can ring and distribute news of your progress.

Physiotherapy

The physiotherapy team will encourage you to move your knee joint freely and you will be up walking the day after surgery. You will be able to fully weight bear straight away but may need crutches. In some cases this regime may need to be modified.

Swelling

It is not uncommon for your knee joint to be swollen following ACL reconstruction. To reduce swelling elevate your leg on a pillow and do not excessively dangle your leg for long periods in the first few days. If your knee becomes swollen, an ice pack may help. Ice packs should be applied for 20 minutes after exercise to help relieve pain.

How To Prepare An Ice Pack

- Soak a towelling bag or pillow case in cold water and wring out
- Place ice cubes in this and crush (alternatively, a 1lb pack of frozen peas placed in a wet towel or bag can be used)
- Make into a parcel and place on the swollen area for up to 20 minutes. The skin will then be pink.
- Do not let any unwrapped ice come into contact with the skin as this will cause an ice burn.

Clothes

Please bring in loose fitting clothes to wear on the ward. This is because they are easier to get on and off.

Transport

When you are fit for discharge from hospital, you can go home in a car. You will be taught how to get in and out of a car in a safe manner.

Driving

You should not attempt to drive until you feel confident to carry out a full emergency stop procedure and able to walk without stick/crutch and without limping. This will be at least 6 weeks post op for a right knee and 3-4 weeks for a left knee on average.

Back To Work

This depends on the nature of your job. If you have a sedentary occupation (mainly sitting down) then on average most people can go back to work approximately 2 weeks post op. Those who work in more manual occupations may require up to 12 weeks before returning to work following their surgery. Your consultant or physiotherapist will advise you.

Follow Up

You will usually be given an appointment to see the consultant or a member of his team approximately 2, 6, 12 and 26 weeks after surgery.

Rehabilitation

This is the most important part of your recovery. To ensure you get maximum benefit from your surgery it is vital that you follow a progressive rehabilitation programme and this should be supervised by a physiotherapist. You should be prepared to work on your rehabilitation programme daily for 3 months and after that further exercise will depend on the level of fitness you wish to return to.

Phase 1 (In hospital)

- You will be seen by a physiotherapist and encouraged to get out of bed on the day of surgery or the day after.
- Walk fully weight bearing with crutches.
- Bend and straighten your knee freely.
- Work on early muscle strengthening exercises.

Leaving Hospital

- You will have been given crutches; you will only need them for a short time, usually a week at most. Your physiotherapist will instruct you when it is safe to walk without.

- You will require a physiotherapy appointment to continue your rehabilitation, this will be arranged with you.
- You will be taught a set of exercises by the hospital physiotherapists; you should continue these daily for at least 20 minutes.
- If a knee brace is required the ward physiotherapist will fit one for you the day after surgery.

GOALS

At 10 – 14 days the dressings should be removed and the wound checked. You should be able to fully straighten your knee and bend it to 90 degrees; you will be walking with as much weight as is comfortable using crutches.

Phase 2 (2-6 weeks)

You will be working on an early exercise programme. This may include:

- Continue exercises given on the ward
- Work on regaining full range of movement, you will need to work hard on this if you have a stiff knee
- Walking re-education to ensure you do not limp
- Muscle strengthening exercises, initially concentrate on weight bearing hamstring exercises, progressing to half squats and step-ups
- Balance re-education – both legs
- Static cycling/ Walking/stepper leg press/mini trampoline/swimming

GOALS

By the end of this phase you should have full range of movement, walking gait should be normal and any swelling should have settled. Strength should be improving.

Phase 3 (6 weeks –12 weeks)

During this phase you will gradually increase your functional activity.

You should have full range of movement and muscle strength will be recovering. The exact time frames will be dependent on your progress; your physiotherapist will be able to advise you.

- Gentle jogging in a straight line, increase to gentle running towards the 3 month point if able
- Continue strengthening exercises – now single leg only
- Continue stretching exercises, especially hamstrings, quads and calf

- Continue balance re-education, single leg and eyes closed
- Add low level hopping, side to side and forwards/backwards
- Swimming/cycling

GOALS

As for goals at week 6, in addition strength should be improving and functional activities may include gentle running and cycling.

Final Phase (12 weeks - 6 months)

You should now be ready to progress into more strenuous exercise.

- Continue stretching and strength exercises
- Increase running capability
- Add figure of eight runs
- Add circle runs with changes of direction

As you progress you may increase the pace of your running, turning and introduce hopping and bounding exercise.

GOALS

Towards the end of this phase you should be ready to begin non contact sports.

Return to sport safely and with confidence. It may be necessary to modify your previous practice – e.g. start back at football training in running shoes.

ANY QUESTIONS

If you want to know anything else, or something is not quite clear just ask a member of the orthopaedic team who is looking after you.

Getting Fit for the Operation

It is important that you keep as fit and active as you can, as this will help your recovery after the operation. Gentle exercises will help you remain fit as possible.

Exercise is most helpful when practiced regularly. You should therefore try to make time every day to practice, even if it is only for five minutes. You can even do some exercises whilst watching TV.

Some Helpful Exercises

Foot Paddling – Sitting in a chair, slowly point your whole foot away from you towards the floor and then move your foot upwards. You can practice this with both feet.

Leg Raises - Sitting in a chair, raise your foot off the ground to straighten your knee and then lower the foot back down to the floor again. You can practice this with both legs.

Arm Exercises – Raise both arms above your head and try to clap your hands, and then lower them down by your side.

Walking – Walking is one of the best ways of exercising, as it helps to keep your joints moving and strong and is also good for your heart and lungs. Try and walk a short distance every day, as far as your pain allows you to go. You may need to use a stick, frame or crutches to help you walk – don't let this stop you practising.