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## Advice for patients following anterior cruiciate ligament (ACL) reconstruction

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## What is an ACL Reconstruction?

The ACL (Anterior Cruciate Ligament) is a ligament in your knee joint. Its main function is to stabilise the knee joint and provide feedback to assist with balance.

ACL Reconstruction involves an arthroscopy (keyhole surgery), where the surgeon makes small incisions (cuts), at the front of the knee. The surgeon then passes an 'arthroscope' (a fibre optic camera) to view inside the knee joint. Instruments are passed through a separate incision, allowing the surgeon to carry out work inside the knee. A graft is used to reconstruct the ligament which is then secured. Grafts are usually taken from one of your tendons. Your surgeon will have chosen the most appropriate type of reconstruction for you as an individual.

**Bone-Patella tendon-Bone graft:** Using the middle third of the patella (knee-cap) tendon (where the thigh muscle (quadriceps) meets the shin bone)

**Hamstrings Graft:** Using two small parts of your hamstring (muscle at the back of the thigh) tendons

**Synthetic graft:** involves using a 'man-made' ligament

In some cases this surgery will be performed as a day case, this means that you will be discharged home on the day of your operation. This will have been discussed and agreed with your consultant beforehand.



Lying down slide your foot along the bed towards your bottom so that you are bending your knee. You can also do this exercise sitting in a chair.



Sitting with your leg out straight, lean forwards to reach towards your toes, until you feel a stretch behind your leg. Hold for 20 seconds.



Sit with your leg straight. Gently push your kneecap outwards and inwards.

## Exercises:

The following exercises are to be commenced immediately after your operation. These are to be completed 3-4 times daily. Your therapist will tick the boxes of the exercises you are to complete.



Lying or sitting, bend and straighten both ankles briskly.



Lying or sitting up, bend your ankle up and push your knee down firmly against the bed. Hold for five seconds then relax.



Lying or sitting up with your legs straight, pull your toes up, push your knee straight and lift your leg 6" off the bed. Hold for five seconds then slowly lower your leg.

## Benefits of ACL Reconstruction

The following should improve after your operation, but remember this will not happen immediately. It can take at least two to six weeks for the knee to become less swollen.

- Reduction of knee pain
- Your knee should stop giving way or locking
- Improvement of range of movement and function

Improvement in function can continue up to 12- 18 months.

## Associated risks

All operations involve an element of risk, this can include:

- Infection
- Wound complications
- Excessive bleeding or swelling
- Damage to the nerves or blood vessels
- Cartilage damage
- Blood clot (DVT/PE)
- Persistent/recurrent pain
- Stiffness
- Instrument breakage
- Graft failure

## Before the operation

You will be seen in the pre-operative assessment clinic a few weeks before your surgery to check you are fit enough for a general anaesthetic. The staff will advise if you need to alter any of your medications before your operation.

You must ensure you have:

- plenty of your regular medication at home
- painkillers such as paracetamol and an anti-inflammatory (e.g. ibuprofen)

If you have any doubt whether such medications are suitable for you then please discuss this with the pre-op clinic staff.

You are advised to bring in wear loose clothing or shorts to wear after your operation so that your clothes are not too tight round your dressing. A flat, supportive shoe is also recommended.

## After the operation

After you have returned to the ward and had something to eat and drink, you will be seen by a member of the therapy team. When you come round from the anaesthetic, your knee may feel stiff and sore. You will find that you have a bulky dressing on your knee and may find that your knee is being held by a splint to keep it in a straight position. The bulky dressing will be removed. If you are wearing a splint this will also be removed by your therapist.

As soon as possible after the operation you will begin your exercises. If you are struggling to regain your movement you may have a device put under your knee to help you bend it.

This machine is called a CPM (Continuous Passive Motion) machine. The settings on this machine will gradually be increased until you can bend your knee to a 90 degree angle.

To have the best possible outcome from your surgery, it is important that you begin your exercises immediately after your operation and follow the instructions given to you by your therapist.

## What to look out for

It is normal to feel aching, discomfort and stretching around the knee when doing your exercises, **however you must consult a doctor urgently if you experience any of the following symptoms:**

- have marked pain or swelling in your calf
- have prolonged pain or sudden increase in swelling not relieved by elevation and painkillers. This is particularly important if you also have:
  - ◇ developed a high temperature
  - ◇ the knee is red, hot and tender
- see fluid, pus or blood coming from the incision site
- sudden loss of knee movement

It is important that you seek immediate attention if you experience any of the above symptoms, to avoid further complications.

## Timescales

Timescale	Milestones
2 weeks	Walking without elbow crutches and to have restored full active range of movement
2-4 weeks	Return to work (non-manual employment)
6 weeks	Return to driving (if can perform emergency stop)
12 weeks	Return to jogging and more manual work
6+ months	Return to sport

## Driving

Returning to driving can vary from one person to the next. It is your responsibility to ensure that you are fully in control of the car. If you drive an automatic car and you have had your left leg operated on, you may be able to return to driving earlier, as long as you can comfortably bend your knee.

You should:

- be walking without crutches
- have sufficient movement and strength in your leg to sit comfortably and control the car
- be able to safely perform an emergency stop
- feel confident that you are in full control of your car

In all cases, you must ensure that you have stopped any medication, such as analgesics that are likely to impact on your ability to drive.

Your therapist will go through the exercises in this booklet, assess you walking with elbow crutches and supervise you practising the stairs if needed, before you go home.

Before going home it is important that you can bend your operated knee to the 90 degree angle on your own and be able to lift your leg off the bed, keeping your knee straight.

The incisions that have been made will have stitches in or steri-strips (strips of tape) over them. Small dressings will cover these to keep them clean and dry. Pain medication will be available on the ward if this is required.

## Advice on activities at home

After your operation you will be issued with elbow crutches by the ward therapist who will teach you their correct use. You will use your elbow crutches for up to 10-14 days whilst your walking pattern returns to normal, gradually reducing to 1 crutch (to be held in the opposite hand to the leg that has been operated on) as you feel comfortable. Keep moving your foot and ankle up and down to help your circulation.

Walking short distances around the house is fine initially, then increase your walking distances as pain and swelling allows. It is normal for your knee to be swollen to some extent for 2 to 8 weeks after the procedure. As long as it gets better week by week it is nothing to worry about.

You should continue all exercises once you have returned home.

## Precautions

Do **not** twist or pivot on your operated leg

Do **not** perform a 'kicking' motion with you operated leg for 12 weeks

## Pain and Swelling

Try to keep any pain to a minimum and take your pain relief on a regular basis, especially during the first week after your operation. This will enable you to do your exercises, move your knee and walk more easily.

Ideally, complete your exercises around 20 minutes after taking your painkillers to get the most benefit from them. Ice will also help to manage any pain, as well as reducing swelling. A bag of frozen peas works well as an ice pack.

Wrap the ice pack in a thin, damp towel and apply to your knee for 20 minutes.

This should be done regularly throughout the day and can be every hour if necessary.

If you have any problems with your circulation or sensation around your knee then please speak with a member of staff for further advice before using the ice.

If you feel that the skin has become painful, for example you are experiencing burning or stinging you must remove the ice pack immediately and check for any signs of a burn. Please note, it is completely normal for the skin to become reddened during the treatment but this should quickly settle once the ice is removed. If at any time your knee becomes acutely painful, take your painkillers and try applying ice to your knee.

## Return to work

This varies from person to person and returning to work will depend on what you do within your job. This can vary quite significantly.

For example, a desk based job may mean you can return within 2-4 weeks after your operation, depending on pain and swelling.

If you have a more physical or manual job this will take longer and will depend on activities involved. This could be between 2 and 6 weeks.

## Return to sport

Once discharged from hospital, you will be referred to outpatient Physiotherapy to continue with your rehabilitation.

It is important that you follow advice given and attend all therapy appointments offered to you, to allow you to gain the most from your rehabilitation.

After your initial Physiotherapy appointment, you will be offered review sessions either on a 1:1 basis or in a class, depending on your needs. If you have your post-op follow-up at either Whiston or St. Helens, during your initial appointment a further appointment will also be made for you to be reviewed at 6 months post-op to complete a number of assessments in order to assess your stability and progress.

These may be completed again before you return to sport.

The following table is a rough guide to progressing walking, return to work and sports. It is essential that you do not return to sporting activities unless guided to do so by your therapist: