

Physiotherapy advice after anterior cruciate ligament (ACL) reconstruction (hamstring graft)

This leaflet explains more about your ACL reconstruction, including advice and exercises to aid your recovery, as well as guidance on what to expect when you come to hospital. If you have any further questions, please speak to your physiotherapist.

Although the physiotherapy team and hospital staff will help you with your rehabilitation, it is important that you aid your recovery by:

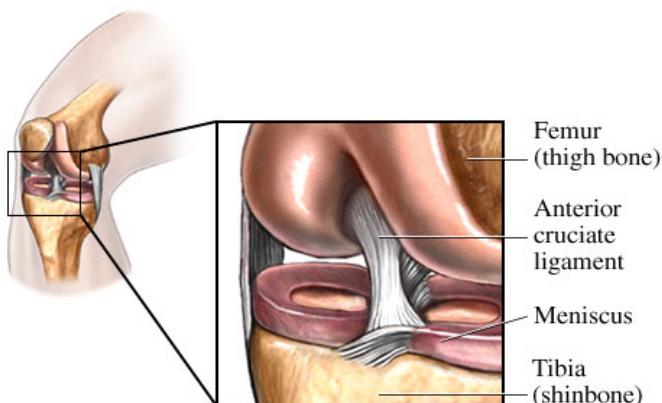
1. Managing your pain and swelling
2. Doing your exercises regularly
3. Following the advice provided in this booklet.

How does my knee work?

The knee joint is made up of the femur (thigh bone), the tibia (shin bone) and the patella (knee cap).

The knee also has ligaments that help to stabilise the joint. These include two collateral ligaments (either side of your knee) and your ACL and PCL (anterior cruciate ligament and posterior cruciate ligament PCL), which cross each other inside your knee joint.

The ACL is a broad thick band which stops the tibia sliding forwards in relation to the femur. It starts from the bottom of the femur, and passes down and forwards to attach to the top of the tibia. As the ACL is situated inside of the joint capsule, when you rupture your ACL it causes bleeding. This is why your knee quickly swells after the rupture.



Muscles also play a vital role in supporting the knee. These include the quadriceps (front thigh muscles), hamstrings (back thigh muscles) and gastrocnemius (calf muscle).

Picture showing the different parts of the knee joint.
Courtesy of www.orthofit.com

How has my injury happened?

ACL ruptures happen in two ways:

- **Non-contact** injuries occur when the knee is subjected to sudden decelerating forces combined with rotational forces for example, changing direction when running, pivoting or landing from a jump. Extreme hyperflexion (excessive bending of the knee) or hyperextension (excessive straightening of the knee) can also cause damage to your ACL, **OR**
- **Contact** injuries occur when there has been a direct blow to the outside of the knee or lower leg.

How can the damage be repaired?

The two most common procedures for reconstructing your ACL are the patella tendon graft and the hamstring tendon graft. You are having a **hamstring tendon graft**.

What is a hamstring tendon graft?

This procedure comprises of removing the semitendinosis and/or the gracilis muscle from the hamstrings (back thigh muscles on the inside side of your leg) which are then stitched together to make the graft. Small tunnels are then drilled in the tibia and femur and the graft is then pulled through and secured in place. The graft is placed as close to the original ACL position as possible and acts as a substitute for the damaged ACL.

After the operation

Will I be in pain?

You may experience some pain and discomfort following your surgery. You will be prescribed pain killers and it is important you take these regularly as prescribed by the doctor looking after you.

Will I have swelling?

Yes, it is normal to have swelling following surgery. However, excessive swelling will slow your recovery. Therefore, it is important that you do the following to reduce the amount of swelling in your knee:

1. Rest regularly - do not walk or stand for long periods. However complete rest is not advised either. Therefore aim for short periods of activity.
2. Reduce swelling and aid pain relief by regularly icing your knee – wrap a bag of frozen peas or ice pack in a damp cloth and apply it to your knee for 10-15 minutes only. This can be repeated every one to two hours.
3. Keep your leg elevated when resting but **do not** rest a pillow under the knee as this discourages full extension of the knee, which is essential for recovery.
4. Keep your compression bandage on for the first 48 hours as this will help to reduce swelling.

Will I have a knee brace?

Most patients have a brace initially following the operation. Unless specified, this is removed 48 hours after surgery.

Can I remove the bandage after 48 hours?

Unless specified, you can remove the bandage and dressings and then re-apply fresh dressings. You may find that you have steri-strips under your dressings which help to support your stitches and aid wound healing. It is advised that you leave these in place.

It is advised that you keep your wound dry and clean following surgery - a strip wash is recommended or you can wrap your leg in cellophane if you want to shower.

Can I put weight through my knee?

You will be **fully weight bearing** after your surgery unless specifically stated not to by your surgeon. After surgery we will provide you with crutches to relieve some of your weight and aid your balance until the pain and swelling has reduced. You will be able to stop using the crutches as soon as you have good knee control in standing and can walk without a limp or pain.

How long will I be in hospital?

This is variable. Some people can go home (be discharged) on the same day of their operation. Others may stay overnight to fully recover from their anaesthetic and improve their level of mobility and safety.

We will provide you with a set of crutches (which you will need to bring back with you on your six week follow up). When you are confident using your crutches you will be shown how to negotiate stairs.

You **will not** be able to drive when you leave the hospital. Therefore, you will need to arrange transport or take public transport home. It is advised that you have someone with you to accompany you home if taking public transport. If you are discharged home on the same day as your operation it is also advised that you have someone to stay with you for 24 hours after your surgery.

If you are concerned about any of the above points before your follow-up appointment with your surgeon's team or physiotherapist, please contact your GP or the hospital ward.

After discharge from hospital

Will I need to do any specific activities before my first physiotherapy session?

Yes. The positions and exercises provided are extremely important as they are designed to help you regain your full range of movement and strengthen the muscles around your knee. It is important that you achieve these two things following your operation as soon as possible as this helps to protect your new ACL graft.

Positions

When lying – place a rolled up towel under the ankle of your operated leg for up to 20 minutes allowing the knee to extend/straighten.

When sitting – place the foot of the operated leg onto a chair/footstool in front of you allowing the knee to extend/straighten.

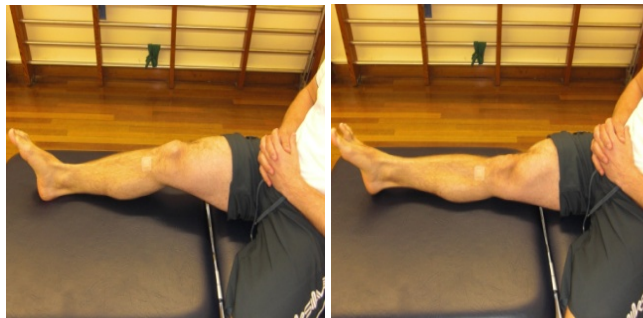
When standing – actively work on pushing the knee backwards to extend/straighten it.

Note: these positions may be uncomfortable and difficult at first, which is normal, but this will improve with time.

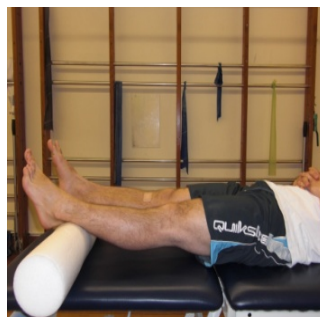
Exercises (Week 1)

These exercises are designed to give you a head start on your rehabilitation before your first physiotherapy appointment. **It is important that you start the exercises immediately and do them at least three to four times a day.**

1. **Static quads** – Sit or lie with your leg straight and then contract/tighten your quads (front thigh muscles) as hard as you can by pushing your knee downwards. Hold for 5 seconds and then relax. Repeat 10 times.



2. **Heel prop with static quads** – Lie with your heel elevated with your knee unsupported, so that it gradually becomes straight. Then repeat the above exercise. Repeat 10 times.



- 3. Heel slides** – Lie with your leg straight and then gradually and comfortably bend your knee by sliding your heel towards your buttock. This may be uncomfortable at first due to swelling, which is normal. However do not force the movement. Hold for 10 seconds and then straighten your knee out again. Repeat 10 times.



- 4. Calf stretch** - making sure your feet are facing forwards. Take your operated leg out behind you with your knee straight and your heel down. Lean in towards the wall so that you can feel the stretch at the back of your calf. Hold for 20 seconds. Repeat 5 times.



- 5. Knee cap mobilisations** – Sit with your leg straight and slowly move your knee cap from side to side and up and down. Hold for 5 seconds in each direction. Repeat 3-4 times a day.



Hopefully by the second week you should have started your physiotherapy. However, if this is not the case, you can still continue to follow the instructions on the next page.

Exercises (Week 2)

By the second week after your operation, your pain and swelling is generally reduced and your ability to walk should have improved. You should be less reliant on your crutches to move around. Also, you may notice that your knee is moving easier and the muscle control has improved – you should be able to contract your thigh muscle the same as your opposite leg.

If this is the case, the following exercises can be commenced alongside the previous exercises.

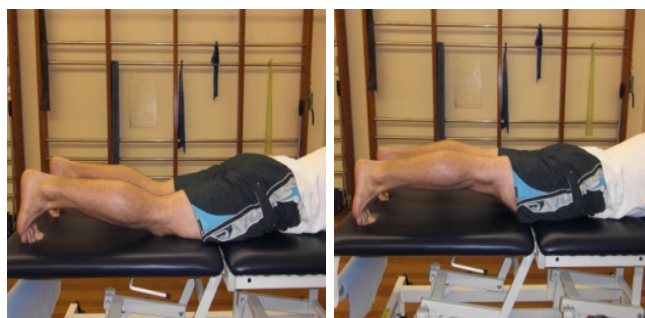
1. **Wall squats** – Stand with your back against the wall and your feet shoulder width apart and about 40cm away from the wall. Slowly slide down the wall as range and pain allows. Do not push into pain or joint restriction. Hold for 5 seconds. Repeat 10 times.



2. **Single leg balance** – stand holding onto the back of a chair. Then try to balance on your operated leg taking your hands off the back of the chair if able. Time how long you can stand unaided.



3. **Prone knee extensions** – lie on your front as demonstrated in the picture below. Then try and lift your knees away from the floor by contracting your thigh muscles. Hold for 5 seconds. Repeat 10 times.



4. **Prone knee bend and straightening** – lie on your front as demonstrated in the picture below ensuring your feet are off the edge of the bed. Then slowly bend your knee as far as you can without causing increased pain and then straighten your leg back down. Repeat 10 times.



5. **Straight leg raise** – Start by contracting your quadriceps just like the static quad exercise. Then lift your leg off the ground as shown in the picture below. Repeat 10 times.



6. **Wall heel slides** – Lie with your feet up on the wall. Then cross your non-operated leg over your operated leg and then let the weight of your leg and gravity bend your knee. Hold for 20 seconds and then straighten)



7. **Bridge** – lie on your back with your feet as close to your bottom as possible. Then squeeze your bottom muscles and lift your bottom off the floor. Hold 10 seconds. Repeat 10 times.



How should I look after my wound and graft?

For the first 48 hours after surgery, please keep your compression bandage on as this will help to reduce swelling. After 48 hours, you can remove the bandage and dressings and then re-apply new dressings.

Once inside the knee, the graft undergoes various physiological changes. However, one thing to note is that the graft is weakest between 6-12 weeks after surgery so **extra care** should be taken during this time, especially in the shower.

When can I return to work?

It is advised to discuss when you can return to work with your doctor or consultant. Even if you are fairly inactive it is wise to arrange at least two weeks off work to ensure that you give your knee the best chance to recover after surgery e.g. no swelling, minimal pain, good quadriceps control, good movement and walking without crutches.

When can I drive again?

Driving is not advised until you can walk unaided and put full weight through your operated leg. This may be up to six weeks after your operation. You will need to notify your insurance company before driving after your surgery as they may refuse to meet a claim if they feel you have driven too soon.

Will I have a follow-up appointment?

You will need to visit your GP 10 to 14 days after your surgery for a wound check. You will then have a follow-up appointment approximately six weeks after your surgery with your surgeon's team. A physiotherapy outpatient appointment will also be arranged for you one to two weeks after your surgery at St Thomas' Hospital or a referral will be made to your local hospital to continue your rehabilitation.

What to watch out for

Watch out for your knee becoming:

- More swollen or redder/hotter than normal, or if the wound looks more inflamed than usual
- New numbness, tingling, discolouration in your foot which lasts for more than 24 hours
- Temperature above 37°C
- Oozing wound
- Persistent calf pain or swelling.

Contact us

If you have any questions or concerns about your anterior cruciate ligament (ACL) reconstruction (hamstring graft), please contact Queen Ward or Sarah Ward on 0207 188 5431 and ask for a member of the physiotherapy team to contact you.

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit www.guysandstthomas.nhs.uk/leaflets

Pharmacy Medicines Helpline

If you have any questions or concerns about your medicines, please speak to the staff caring for you or call our helpline.

t: 020 7188 8748 9am to 5pm, Monday to Friday

Your comments and concerns

For advice, support or to raise a concern, contact our Patient Advice and Liaison Service (PALS). To make a complaint, contact the complaints department.

t: 020 7188 8801 (PALS) e: pals@gstt.nhs.uk
t: 020 7188 3514 (complaints) e: complaints2@gstt.nhs.uk

Language and Accessible support services

If you need an interpreter or information about your care in a different language or format, please get in touch:

t: 020 7188 8815 e: languagesupport@gstt.nhs.uk

NHS 111

Offers medical help and advice from fully trained advisers supported by experienced nurses and paramedics. Available over the phone 24 hours a day.

t: 111

NHS Choices

Provides online information and guidance on all aspects of health and healthcare, to help you make choices about your health.

w: www.nhs.uk

Get involved and have your say: become a member of the Trust

Members of Guy's and St Thomas' NHS Foundation Trust contribute to the organisation on a voluntary basis. We count on them for feedback, local knowledge and support. Membership is free and it is up to you how much you get involved. To find out more, and to become a member:

t: 0800 731 0319 e: members@gstt.nhs.uk w: www.guysandstthomas.nhs.uk/membership