Useful sources of information

Patient Advice and Liaison Service (PALS) – To make comments or raise concerns about the Trust’s services, please contact PALS. Ask a member of staff to direct you to the PALS office or:
t: 020 7188 8801 at St Thomas’  t: 020 7188 8803 at Guy’s
e: pals@gstt.nhs.uk

Knowledge & Information Centre (KIC) – For more information about health conditions, support groups and local services, or to search the internet and send emails, please visit the KIC on the Ground Floor, North Wing, St Thomas’ Hospital.
t: 020 7188 3416

Language support services – If you need an interpreter or information about your care in a different language or format, please get in touch using the following contact details.
t: 020 7188 8815  fax: 020 7188 5953

NHS Direct – Offers health information and advice from specially trained nurses over the phone 24 hours a day.
t: 0845 4647  w: www.nhsdirect.nhs.uk

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

Physiotherapy following anterior cruciate ligament (ACL) reconstruction (hamstring graft)

This booklet is designed to provide you with information about your ACL reconstruction. It includes advice and exercises to aid your recovery and provides guidance so that you know what to expect.

Although the physiotherapy team and hospital staff will help you with your rehabilitation, it is important that you aid your own 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 and posterior cruciate ligaments), 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 at the bottom of the femur, 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).

Contact details
If you have any questions or concerns about your anterior cruciate ligament (ACL) reconstruction (hamstring graft), please contact the physiotherapy department on 020 7188 5099 Monday-Friday, 8.30am - 4.30pm.

Blundell Ward Physiotherapist on 020 7188 5110.

Notes
When can I drive again?
Driving is only advised once 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 that you have had an ACL reconstruction and plan to start driving again.

Will I have a follow up appointment?
Yes. You will have a follow up appointment with your surgeon approximately four to six weeks following your surgery. A physiotherapy outpatient appointment will be made for you whilst on the ward for one to two weeks following your operation. This will be at St Thomas’ Hospital or your local hospital to continue your rehabilitation.

Is there anything I should watch out for?
Watch out for your knee becoming:
- More swollen or redder/hotter than normal, or if the wound looks ‘angry’.
- New numbness, tingling, discolouration in your foot that last for more than 24 hours.
- Temperature above 37°C.
- Oozing wound.
- Persistent calf pain or swelling.

If, before your appointment with your surgeon or physiotherapist, you are concerned about any of the above points then contact your GP or the ward.

How has my injury happened?
ACL ruptures can 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 graft. You are having a hamstring tendon graft.

Hamstring tendon graft
This procedure involves removing the semitendinosus 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. It is important that you inform your nurse if your pain relief is not adequate. When you leave hospital, you will also be provided with painkillers to take home.
Will I have swelling?
Yes, it is normal to have swelling following surgery. However, excessive swelling will slow your recovery. It is therefore important that you do the following to reduce the amount of swelling in your knee:

1. Rest regularly – do not walk or stand around for long periods. However, complete rest is not advised either. Aim for short periods of activity.

2. Reduce swelling and aid pain relief by regularly icing your knee by wrapping a bag of frozen peas or ice pack in a damp cloth and applying 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 after your operation, 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 can be removed 48 hours after surgery.

Can I take the bandages off after 48 hours?
Unless specifically told not to, you can remove the bandage and dressings, and then re-apply fresh dressings, after 48 hours. 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, so a strip wash is recommended, or wrap your leg in cellophane if you want to shower.

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 for 10 seconds. Repeat 10 times.

How should I look after my wound and graft?
As already mentioned, keep your compression bandage on for the first 48 hours after surgery, as this will help to reduce swelling. After 48 hours, you can remove the bandage and dressings and then re-apply fresh dressings.

Your graft will undergo various changes once inside the knee. However, one thing to note is that the graft is weakest between six to 12 weeks after your operation, so extra care should be taken during this time…especially in the shower!!

When can I return to work?
It is advisable to discuss this with your consultant, but even if you are fairly sedentary at work (don’t need to move a lot) it is wise to arrange at least two weeks off work. This will give your knee the best chance to recover post surgery i.e. no swelling, minimal pain, good quadriceps control, good movement and walking without crutches.
5. **Straight leg raise**
   Lie on your back. 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.

---

**Can I put weight through my knee?**
Unless specifically told by your surgeon, you will be fully weight bearing after your surgery. This means that your leg can carry your full body weight when walking. We will provide you with crutches to relieve some of your weight and aid your balance in the first week, until the pain and swelling have reduced. You will be able to stop using the crutches as soon as you have good knee control while 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 as their operation, whilst others may stay overnight to fully recover from their anaesthetic and improve their level of mobility and safety.

As mentioned, we will provide you with a set of crutches (which you need to bring back with you to your six week follow up appointment). Once confident on your crutches you will be shown how to negotiate stairs.

You will not be able to drive when you leave the hospital and 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.

**Following discharge from hospital**
You will need to visit your GP 10 to 14 days after your surgery for a wound check. An appointment with your surgeon will be arranged for you six weeks after your surgery. A physiotherapy appointment will also be organised for you where you will start your rehabilitation.
Will I need to do any specific activities before my first physiotherapy session?
Yes! The positions and exercises provided below 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 – put 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
These exercises are designed to give you a head start on your rehabilitation before your first physiotherapy appointment.

It is important that you start them immediately and find time to do them at least three to four times a day.

3. Prone knee extensions
Lie on your front as demonstrated in the picture below. Then try to lift your knees away from the floor by contracting your thigh muscles. Hold for five seconds.
Repeat 10 times.

4. Prone knee bend and straightening
Lie on the bed 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.
1. **Wall squats**  
Stand with your back against the wall, and your feet shoulder width apart and about 40 centimetres away from the wall. Slowly slide down the wall as range and pain allows. Stop sliding down if it starts to hurt or when it is difficult to move your knee joint any further. Hold for five 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 you are able. Time how long you can stand un-aided (without holding onto the chair).

---

**Early exercises (week 1)**

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

2. **Heel prop with static quads**  
Lie with your heel elevated and your knee unsupported, so that it gradually becomes straight as shown. **Repeat exercise 1**
3. **Heel slides**
   Lie with your leg straight. Gradually 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. **Kneecap mobilisations**
   Sit with your leg straight and slowly move your kneecap from side to side and up and down. Hold for five seconds in each direction. Repeat three to four times a day.

By the second week after your operation, 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.

**Progression of activity and exercises (week 2)**
By the second week after your operation, your pain and swelling should have reduced and your ability to walk should have improved. You should be less reliant on your crutches to move around. You may notice that your knee is now moving more easily and your muscle control has improved – you should be able to contract your thigh muscle as much as you can in your other leg.

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