

Post-operative ACL Reconstruction: Patient Passport

This leaflet aims to provide you with all the information you need about your ACL rehabilitation, from pre-operation, all the way through to returning to sport. Please speak to your therapist if you have any further questions. This leaflet has been developed using the Melbourne ACL Rehabilitation 2.0 guide.

Please fill in your details below. Please bring to all your Physiotherapy sessions.

About me / my surgery:

Name:	
Date of surgery:	
Surgery / graft type:	
Long-term goals:	

Stages of Rehabilitation completed (tick with date) (to complete with your Physiotherapist):

Stage 1 (Recovery from surgery)	Stage 2 (Strength and control)	Stage 3 (Running, agility and landings)	Stage 4 (Return to sport)

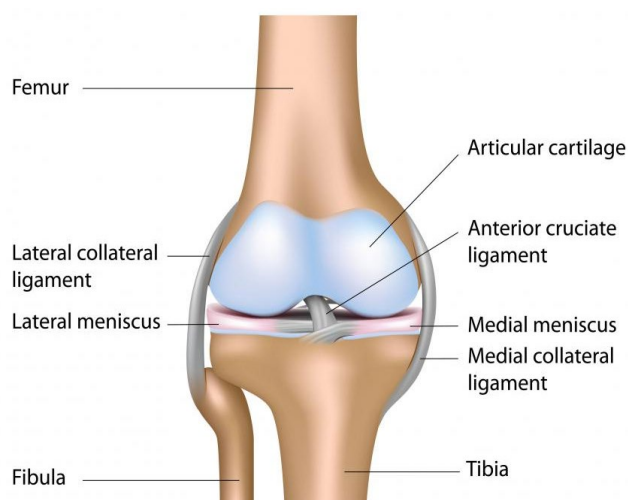
Overview of ACL injuries and ACL Reconstruction (ACLR)

The below aims to provide further information on ACL injuries and what the surgical management involves. For further information, please speak to your Physiotherapist or Consultant.

What is the Anterior cruciate ligament (ACL) and what does it do?

The ACL is one of the ligaments which help stabilise the knee. The purpose of this ligament is to keep the tibia from sliding forward and rotating on the femur. For this reason, the ACL is most susceptible to injury when twisting or when rotational forces are placed on the knee.

After the ACL is torn, the knee may present as less stable and it may become difficult to maintain a high level of activity without the knee buckling or giving way. It is particularly difficult to perform the repetitive cutting and pivoting required in many sports.



What happens inside my knee when you injure the ACL?

The ACL may be partially torn or fully ruptured either from its attachment into the bone or along the middle of the ligament. Both may involve the bottom of your thigh bone impacting against the top of the shin bone. This causes bony bruising to the cartilage and underlying bone.

Normally the knee swells up considerably after the injury as a protective mechanism but this settles over time as inflammation reduces. Initially a specialist clinician should test the knee to see if it feels clinically unstable. If this is the case or other structural damage is suspected an MRI scan can be used to identify the structures injured and determine further management options.

Surgical management of ACL injuries – ACL Reconstruction (ACLR)

The primary reason to consider this is to provide stability to the knee. This is important as repeated instability (buckling) and injuries can put the internal knee structures at risk of further injury and may impact the joint in later years. ACL reconstruction is surgery involving

removing the injured anterior cruciate ligament and replacing it with a tendon from another part of your body or from a donor. Surgery is typically arthroscopic (keyhole surgery) and performed as a day case, meaning you will be discharged on the same day.

You will be referred to your Physiotherapy service for a strict rehabilitation programme which is based around the healing of the new graft in your knee. Regardless of what type of graft is used, having an ACL reconstruction requires a significant commitment to Physiotherapy. Recovery is variable and rehabilitation can take anywhere from nine months to a year or sometimes longer, to return to your sport.

What are the different phases of rehabilitation?

There are no set timescales as rehabilitation is symptom and goal-based, with physiotherapy guidance. The six key phases are:

- **Pre-operative Phase:** Injury recovery and readiness for surgery
- **Phase 1:** Recovery from surgery
- **Phase 2:** Strength and neuromuscular control
- **Phase 3:** Running, agility and landings
- **Phase 4:** Return to sport
- **Phase 5:** Prevention of re-injury.

What exercises should I be doing in each phase?

- This patient passport provides information on the aims and outcomes of each phase of rehab
- At the top of each section, there is a QR code which will take you to an online exercise programme of suggested exercises for that stage of rehabilitation
- However, please ensure that you are guided by your physiotherapist on specific exercises you should be completing within each stage
- These are not exhaustive lists; please be guided by your physiotherapist on which exercises you should be completing

Pre-operative phase – Injury recovery and readiness for surgery

Aims:

The three most important goals of the pre-operative phase are:

- Reduce or eliminate swelling as much as possible
- Regain full range of motion (the ability to fully bend and fully straighten your knee)
- Regain 90% strength in the quadriceps and hamstrings compared with the other side.

The stronger your knee is before surgery, the better your post-operative outcome will be.



Phase 1 – Recovery from Surgery

Phase 1 exercises

Aims:

The three most important goals of this phase are:

- Get the knee fully straight (full extension)
- Settle the swelling down to 'mild'
- Get the quadriceps firing again

Outcome measures / goals to progress to phase 2:

- Full knee extension ☐
- Able to bend knee more than 125 degrees ☐
- Minimal swelling ☐
- Full seated knee extension (sitting on the edge of the bed – able to actively straighten your knee fully and maintain this position for a few seconds, without your knee bending). ☐



Phase 2 – Strength and Neuromuscular control



Phase 2a exercises

Phase 2b exercises

It's very important to listen to your knee during this stage. Any increase in pain or swelling needs monitoring. Do not progress until this has settled or your knee has been re-assessed.

Aims:

The three most important goals of this phase are:

- Regain most of your single leg balance
- Regain most of your muscle strength
- Be able to do a single leg squat with good control and alignment.

Outcome measures / goals to progress to phase 3:

(>85% means compared to the other leg i.e. if you can do 20 reps on the good leg, you're aiming for 17 reps on the operated leg)

- Full range of movement ☐
- No swelling ☐
- Single leg squat with good control and alignment ☐
- Single leg bridge endurance test >85% (minimum 20 reps) ☐
- Calf raise endurance test (off a step) >85% (minimum 20 reps) ☐
- Side plank endurance test >85% (minimum 30 seconds) ☐
- Single leg squats from a chair >85% (minimum 10 reps) ☐
- Single leg balance (eyes open) >43 seconds ☐
- Single leg balance (eyes closed) >9 seconds ☐

1RM (rep max) testing (the highest weight you can lift in 1 rep):

- **Single leg press** – 1.5 x your bodyweight ☐
- **Squat** (front squat or back squat to 90 degrees knee bend) – 1.5 x your bodyweight* ☐

**These final 2 tests are considered a bonus for ACL rehab and are not considered a “roadblock” to the next phase if you do not meet them – however they are strongly encouraged if you are aiming to return to high level jumping, cutting or pivoting sports.*



Phase 3 – Running, agility and landings

Phase 3 exercises

Aims:

The most important goals of this phase are:

- **Return to running** will be completed in this stage (if part of your goals) under guidance
- Attain excellent hopping performance (technique, distance and endurance)
- Progress successfully through an agility programme and modified game play
- Regain full strength and balance.

Before we test the outcome measures in this phase, you must have:

- Achieved full knee range of movement
- No swelling
- You are rated “good” in the Single Leg Squat Test
- There are no side-to-side differences for the single leg strength tests in phase 2

Outcome measures / goals to progress to phase 4:

(>95% means compared to the other leg i.e. if you can hop 1 metre on the good leg, you’re aiming for 0.95 metres on the operated leg)

- **Single leg hop test** >95% ☐
- **Triple hop test** >95% ☐
- **Triple cross over hop test** >95% ☐
- **Side hop test** >95% ☐

- **Single leg squats from a chair** >22 reps on both sides ☐
-
- **Star excursion balance test** >95% ☐
-
- **Single leg balance with head moving side to side** >15 seconds ☐
-
- **Single leg balance with head moving up and down** >15 seconds ☐

1RM (rep max) testing (the highest weight you can lift in 1 rep):

- **Single leg press** – 1.8 x your bodyweight* ☐
- **Squat** (front squat or back squat to 90 degrees knee bend) – 1.8 x your bodyweight* ☐

**These final 2 tests are considered a bonus for ACL rehab and are not considered a “roadblock” to the next phase if you do not meet them – however they are strongly encouraged if you are aiming to return to high level jumping, cutting or pivoting sports*

Phase 4 – Return to sport

- This phase should be individual to you and your goals, and should include exercises and training activities that link to your hobbies or sports
- The knee needs to be stable and strong, but you also need to be confident and mentally ready to return to sport – this will come from repetition of successful training and match play situations
- The aim of this phase is to progress from restricted to unrestricted training, with an eventual return to competition when ready.

When am I ready to return to sport?

- Current research suggests a minimum of nine months, however please be guided by your physiotherapist
- Ideally, we would consider a return to sport if you have satisfied three key criteria:
 - Successful completion of the Melbourne Return to Sport Score (>95)
 - You are comfortable, confident and eager to return to sport, as measured by the ACL-RSI and IKDC (questionnaires)
 - An ACL injury prevention program is discussed, implemented and continued whilst you are participating in sport.

To lower the risk of future injury, evidence supports that injury prevention programs are performed at least 15 minutes prior to each training session and game.

Phase 5 – Prevention of re-injury

- An injury prevention programme should be completed following completion of your physiotherapy journey to ensure you continue to improve the neuromuscular control of your knee during standing, cutting and landing tasks
- Key components of the injury prevention programme should include:
 - Plyometric, balance and strengthening exercises
 - Perform the programme for at least 10 minutes before every training session and game (or more than once a week).

It is highly recommended that you continue with a continuing ACL injury prevention programme after you are discharged from physiotherapy, whilst you continue to play sports.

Useful sources of information

[Knee ligament surgery - NHS](#)

Melbourne ACL Rehabilitation Guide 2.0 (Authors: Randal Cooper and Mick Hughes)

Contact us

Therapies Department
St George's University Hospital Ground Floor – Jenner Wing
Blackshaw Road
Tooting
SW17 0QT
Email: mskphysioenquiries@stgeorges.nhs.uk

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

Was this information helpful? Yes / No

Please let us know, contact patient.information@stgeorges.nhs.uk and include the leaflet title.

Thank you.

Additional services

Patient Advice and Liaison Service (PALS)

PALS can offer you advice and information when you have comments or concerns about our services or care. You can contact the PALS team on the advisory telephone line Monday, Tuesday, Thursday and Friday from 2pm to 5pm.

A Walk-in service is available:

Monday, Tuesday and Thursday between 10am and 4pm

Friday between 10am and 2pm.

The Walk-in and Advisory telephone services are closed on Wednesdays.

Please contact PALS in advance to check if there are any changes to opening times.

PALS is based within the hospital in the ground floor main corridor between Grosvenor and Lanesborough wings.

Tel: 020 8725 2453 **Email:** pals@stgeorges.nhs.uk

NHS UK

The NHS provides online information and guidance on all aspects of health and healthcare, to help you make decisions about your health.

Web: www.nhs.uk

NHS 111

You can call 111 when you need medical help fast but it's not a 999 emergency. NHS 111 is available 24 hours a day, 365 days a year. Calls are free from landlines and mobile phones.

Tel: 111

AccessAble

You can download accessibility guides for all our services by searching 'St George's Hospital' on the AccessAble website (www.accessable.co.uk). The guides are designed to ensure everyone – including those with accessibility needs – can access our hospital and community sites with confidence.



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