



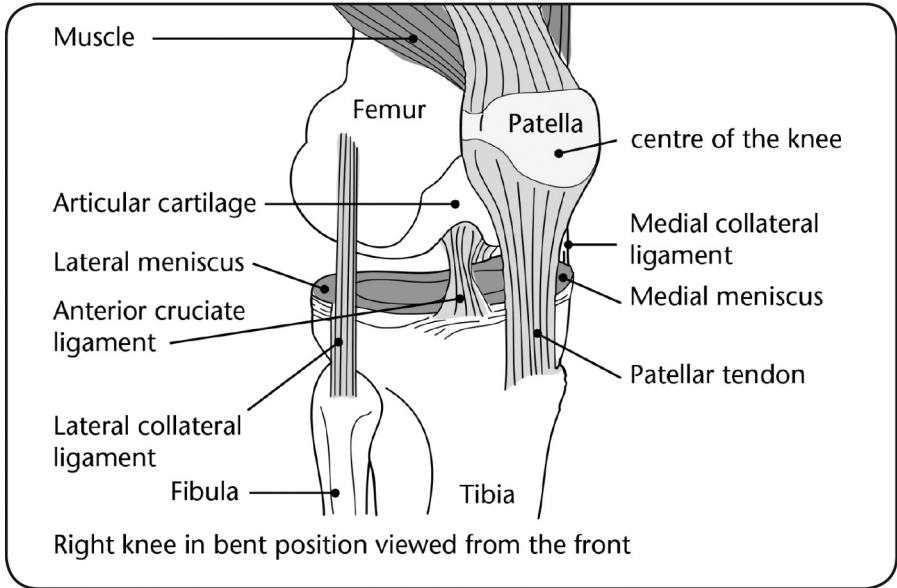
Pre-operative Physiotherapy Information for Anterior Cruciate Ligament (ACL) Reconstruction

Information for patients
Physiotherapy



WHAT IS AN ACL? (ANTERIOR CRUCIATE LIGAMENT)

The following diagram shows the main structures in a healthy (right) knee.



The ACL runs from the back of the femur (thighbone) to the front of the tibia (shinbone). Its function is to stabilise the knee. You can injure your ACL by a twisting/pivoting movement or when your body continues to move forwards but your foot remains stationary. The main goals of ACL surgery and rehabilitation are to restore knee stability and to allow your return to work and sport.

SURGERY

Reconstruction of an ACL involves replacing the torn ligament. This can be done by using part of the hamstring tendon (from behind the knee) or the patellar tendon (in front of the knee). The surgeon drills tunnels through the bone and your new ACL is brought through these tunnels, and then secured. As healing occurs, the bone tunnels fill in to secure the tendon.

IS SURGERY FOR YOU?

The decision on whether surgery is right for you, will depend on your individual circumstances and your personal goals. If you require a lot of change of direction and jumping for your work or sport, you may benefit from ACL reconstructive surgery. You may also be more likely to receive surgery if you have also injured your knee cartilage. Your surgeon and/or physiotherapist will discuss your options with you, to help you make the right decision for yourself.

REHABILITATION

The rehabilitation is just as important as the surgery itself. You will need commitment and dedication to make the most of your rehabilitation. If you fail to complete your rehabilitation, you are more likely to have a poorer outcome. To make sure your progress is safe, and to protect your graft, your physiotherapist(s) will follow a specially designed programme based on up to date research. Generally, 9-12 months of post-operative rehabilitation is anticipated for ACL surgery.

PRE-OPERATIVE REHABILITATION

You may have to wait several weeks or months for your surgery. This allows the pain and swelling from your injury to settle. Your range of movement, strength and balance are all likely to be affected from your ACL injury. It is therefore vital that you complete a preoperative rehabilitation programme. Failure to comply with your pre-operative rehabilitation may influence the decision to offer you surgery.

You should aim to achieve the following goals in your pre-operative rehabilitation:

- ❖ Improved range of movement
- ❖ Reduced swelling
- ❖ Improved muscle strength
- ❖ Improved balance

Before your surgery you should also have:

- ❖ A clear understanding of the nature of the operation
- ❖ A commitment to post-operative rehabilitation

You will be seen a few weeks before your operation in the preoperative assessment clinic. This is to ensure that surgery is still appropriate for you and that you are medically fit for your operation.

PAIN MANAGEMENT ADVICE

Ice may be initially used for reducing pain and swelling. Be wary of ice burns – don't apply ice directly to the skin, wrap an ice pack in a clean, damp tea towel before applying. Avoid prolonged exposure to ice, 10-20 minutes is usually adequate.

Compression and elevation are helpful for reducing inflammation. This can be done by keeping your leg raised on a pillow and compressed by wrapping a bandage around it. Do not make the bandage too tight and do not wear tubi-grip or any compression bandage in bed at night.

Analgesia also known as pain relief, can be an important part in helping you manage your symptoms and allow you to stay active. If you feel your current pain relievers are not helping your pain or you are experiencing any side effects from your medication, please seek advice from your GP or pharmacist.

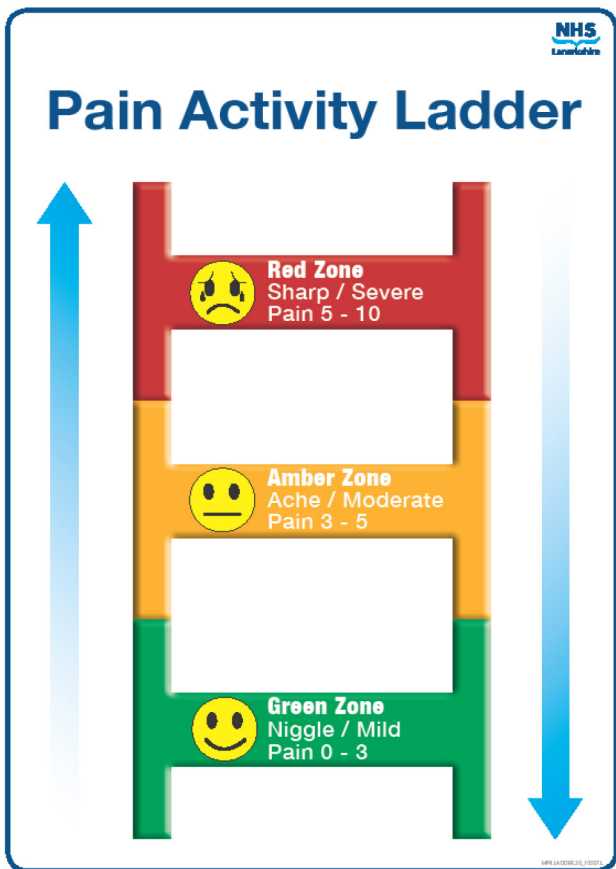
WALKING RE-EDUCATION

It is important to normalise your walking pattern as soon as you can post injury. Make sure when you are walking you are aiming to place even weight through your legs. Practice placing your heel (of your injured leg) on the ground as you transfer your weight forward. This helps to improve your walking.

EXERCISE PROGRAMME

You should also begin some basic exercises to strengthen the muscles in your legs and optimise your range of movement before your surgery. These exercises are shown below.

When you are completing your rehabilitation exercises it is often best to work within the green (and sometimes amber zones depending on what you deem is an acceptable level of pain) both during the exercises and within 48 hours of completing your exercises. If you find yourself in the red zone you are likely pushing yourself too hard and may flare up the pain.



Initial Exercises

1) Knee slides

Lie on your back with your legs out straight. Slowly bend the affected knee by sliding your heel on the bed towards your hip. Then slowly straighten the knee again by sliding the heel back on the bed. Keep the knee in line with the foot throughout the exercise. Repeat the exercise 10 times x 3 sets daily.



2) Knee extension

Lie on your back with your legs out straight. Relax and let your knee straighten in this position. Place a small rolled up towel underneath your heel. Relax and let your knee



straighten in this position. Aim to hold this up 1-2 minutes, building up to 10 minutes (if tolerated). Aim to repeat x 2 daily.

3) Static quads

Lie on your back with your legs straight out in front of you. Pull the toes and ankle of your leg you are exercising towards you and press the back of your knee against the floor or bed. Feel the front of your thigh muscles tightening. Hold the tension for a moment then relax. Aim to do x 10 repetitions x 3 sets daily.

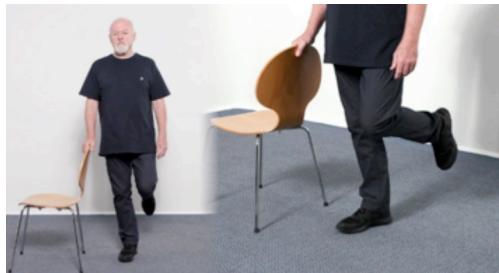


You should aim to progress your exercises onto the next stage, when you are finishing your exercise sets pain free, without tiring.

4) Single leg balance

Make sure you have something to hold on to for balance (if required). Stand with soft knees.

Lift one leg up and stand tall with your head upright.



Try to maintain this position.

This exercise can be performed every day frequently throughout the day. Try to record your time and aim for 30 seconds to 1 minute without putting your foot down.

You can perform the exercise throughout the day such as when the kettle is boiling or after brushing your teeth. Aim for at least 3 attempts daily

Intermediate Exercises

5) Straight leg raise

Sit with your uninjured knee bent and your injured leg straight out in front of you.

Bend the ankle of your injured leg, tighten your front thigh muscles and straighten your knee.

Lift your leg off the bed and hold for 5 seconds. Keep the knee straight.

Don't let your lower back arch during the lift.
Repeat 10 times x 3 sets daily.



6) Wall squat

Stand tall with feet hip width apart looking ahead. Bend your knees as if going to sit down, you don't need to go too far.

Keep your back against the wall. Keep your heels on the floor and



make sure your knees stay in line with your middle toes. Do not let your knees go beyond the tips of your toes. Slowly straighten your knees keeping the weight through your heels.

Repeat 10 times, every second day. You can make this exercise harder by squatting lower and gradually increasing to 3 sets of 15 repetitions.

You should aim to progress your exercises onto the next stage, when you are finishing your exercise sets pain free, without tiring.

Advanced Exercises

7) Squat

Stand tall with feet hip width apart looking ahead. Bend your knees and push your hips back as if going to sit down, you don't need to go too far. Reaching your arms forwards will help maintain your balance.



Keep your heels on the floor and make sure your knees stay in line with your middle toes. Do not let your knees go beyond the tips of your toes. Slowly straighten your knees keeping the weight through your heels.

Repeat 10 times x 3 sets, every second day. You can make this exercise harder by squatting lower and gradually increasing to 15 repetitions x 3 sets

8) Step up

Stand in front of a step.
Place one foot firmly on
the step.

Push down through
your foot straightening
your knee and bring the
opposite foot onto the
step to stand up straight.



Step your foot back off the step onto the floor and bring your
other back down beside it.

Ensure that your toes and knees point forward throughout the
exercise. Keep your body upright and looking forwards, avoid
looking at your feet.

Repeat this exercise 10 times and then swap legs. Perform every
second day, aim for 3-4 sets per week.

You can make this exercise harder by stepping onto a higher
step or by holding some weights in your arms or across your
chest.

9) Star balance exercise

Standing on one leg and bend the knee.

Stretch the other leg out in front of you to lightly tap the ground.

Ensure that your standing knee stays over your foot, lower your bottom back and down just like the squatting exercises.

Bring your foot back to the centre and straighten up.

Repeat the same movement with the foot tapping the ground to the side, diagonally behind and diagonally behind crossing the body. Remember to return to starting position between each movement.

Ensure that your trunk stays upright throughout the exercise. Try and stretch the leg as far out as you can whilst maintaining balance and control.

Repeat with opposite leg. Aim to do this x 3 times each side, daily.



If you find any of the above exercises worsen your symptoms, please stop and seek advice from a health professional.

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