

Regain a physical activity following an Anterior Cruciate Ligament surgery of the knee

Your home based exercise program

After your surgery, our team of physiotherapists, in accordance with your surgeon, will recommend a personalised rehabilitation program to prepare a safe return to physical activity.

Thus, your rehabilitation will be divided into two stages prior to resuming your physical activity: physiotherapy and sport-specific training.

For a complete recovery, it is essential that you self-rehabilitate in conjunction with the physiotherapy program. Therefore, we will demonstrate several exercises that we encourage you to do independently throughout your rehabilitation. Remember that each exercise should be painfree.

Please discuss with your physiotherapist, if you are unsure about an exercise.
Good luck with your rehabilitation.

STAGE 1: DURING YOUR STAY IN HOSPITAL (2 to 3 days)



Gait rehabilitation: walk with 2 crutches full weight bearing as tolerated on the operated leg.



Quadriceps initiation: contract your quadriceps by pulling the toes towards you and press your knee down into the bed. Maintain the contraction for 10 seconds then release. Repeat the exercise 5 to 10 times, several times a day.



Hamstrings initiation: contract the hamstrings by pressing your heel down into the bed. Maintain the contraction for 10 seconds then release. Repeat the exercise 5 to 10 times, several times a day.



Straight leg raise: contract the quadriceps as in the exercise “*quadriceps initiation*”. Keeping the knee straight, lift the leg about 30cm from the bed and slowly control the descent. Repeat the exercise 10 times, several times a day.



Knee flexion lying down: slide the heel on the bed towards the buttocks, bending your knee. Do 3 repetitions of 20, several times a day.



Knee mobilisation on a smooth surface: sit down and place the foot of the operated leg on a smooth surface, e.g. a towel or a sheet of paper. Bend the knee sliding the heel backwards. Bend as much as possible (maximum 90°) avoiding pain, then let the foot go forward passively. Do 3 repetitions of 20, several times a day.

Aside from these exercises, we advise you to apply ice for 15-20 minutes every 2 hours. Caution: wrap the ice in a towel and place on affected area in order to avoid skin damage.

STAGE 2: FROM DISCHARGE TO THE END OF 2nd WEEK

During the 2nd stage, it is important that you continue with stage 1 exercises. Please consult the previous video if you have any doubts. The following new set of exercises is to be added to your rehabilitation program:



Mini squat: stand with your feet hip width apart and facing forwards. Bend your knees until you reach approximately 30° flexion, placing your weight in the heels and return to the initial position. Do 3 repetitions of 20, 3 times a day.



Forefoot on a step: place your forefoot on a step, let your heel drop down below the step and then push up onto your toes, keeping your knee straight throughout the exercise. Do 3 repetitions of 20, 3 times a day. To make it easier, start the exercise standing on both feet.



Mobilising the patella: in a seated position, straighten the operated knee and relax the quadriceps, place your hands around the patella and move it up and down and from side to side. Repeat the movement 20 times, 3 times a day.



The bridge: only carry out this exercise if the graft used to reconstruct your anterior cruciate ligament during surgery was taken from the patellar tendon. If in doubt, please confirm this with your physiotherapist. Lie on your back, bend your knees and dig both heels into the mat. Lift your pelvis up and hold for 30 seconds. Do 3 repetitions, 3 times a day.

Aside from these exercises, apply ice (coldpack, crushed ice) for 15-20 minutes, 5 times a day. If your knee swells or becomes painful, reduce the workload and/or the walking distance.

STAGE 3 : FROM 3rd TO 4th WEEK

During the 3rd stage, it is important that you continue with stage 2 exercises. Please consult the previous video if you have any doubts. The following new set of exercises is to be added to your rehabilitation program:



Gait rehabilitation: walk in a straight line and gradually reduce the load on the crutches whilst simultaneously increasing the weight applied on the operated leg until you can walk without the crutches.



Squat: this exercise is similar to the « mini squat » exercise but instead bend your knees gradually to 90°, placing your weight in the heels. Do 3 repetitions of 10 to 15.



Forward lunge: feet together, take a large step forward with the operated leg and bend the knee to 90°. Ensure that the knee remains in line with the foot and keep your body upright. Then return to standing. Do 3 repetitions of 10 to 15.



Side lunge: feet together, take a large step sideways with the operated leg and bend the knee to 90°. Keep your body upright and above the bent knee. The other leg must remain straight throughout the exercise. Then return to standing. Do 3 repetitions of 10 to 15.



Balance on one leg: stand on your operated leg with the knee slightly bent and hold for 30 seconds. Repeat 3 times.

Aside from these exercises, apply ice (coldpack, crushed ice) for 15-20 minutes, 5 times a day. As soon as there is sufficient knee flexion, you can start cycling for 10 minutes 4 times per week, in accordance with your physiotherapist. Gradually increase the length of time. There should be no increase in pain and swelling as a result of this progression. If your knee swells or becomes painful, reduce the workload and/or the walking distance.

STAGE 4: FROM 5th TO 12th WEEK (2nd and 3rd MONTH)

During the 4th stage, it is important that you continue with stage 3 exercises. Please consult the previous video if you have any doubts. The following new set of exercises is to be added to your rehabilitation program:



Single leg squat: stand on the operated leg keeping your pelvis horizontal. Bend the knee placing the weight in the heel and then stand up. Do 3 repetitions of 10 to 15.



Chair: lean your back against the wall, the heels 30cm away from the wall. Slide your back along the wall until you are in a seated position, bending your knees to a maximum of 90°. Maintain the position for 30 seconds and do 5 repetitions.



Single leg bridge: lie on your back, bend your operated knee and dig the heel into the mat. Straighten the other leg and lift your pelvis up whilst keeping hands on the mat. Maintain the position for 30 seconds and do 5 repetitions.



Balance on unstable surface: place your foot on an unstable surface (for example roll up a towel horizontally to form a « roll »), slightly bend your knee and balance for 30 seconds. Do 5 repetitions. You can increase the difficulty of the exercise by :

- closing your eyes ;
- asking someone to gently push you whilst you remain stable ;
- throwing a light ball against a wall and catching it.



Stretching : from 6th week onwards, we advise you to finish your exercise session by stretching the hamstrings. And from 12th week onwards, finish by stretching both the hamstrings and the quadriceps.

If the graft has been taken from the patellar tendon, you may start the hamstring stretch from the beginning of this stage.

Aside from these exercises, gradually increase the length of time cycling to 30 minutes 4 times per week, in accordance with your physiotherapist. There should be no increase in pain and swelling as a result of this progression. You may also vary the training session with outdoor walking, using the stepper or the rower.

STAGE 5: FROM 4th MONTH ONWARDS

During the 5th stage, it is important that you continue with stage 4 exercises. Please consult the previous video if you have any doubts.

In parallel, you can now start **jogging** on even surfaces in a straight line, **cycling** without clips and **swimming** (crawl). The other exercises are :



Skipping: practice skipping on a mat and then on a hard surface.



The cross : draw a cross on the ground and then

- jump from side to side over the vertical line of the cross, first on both legs and then only on the operated leg.
- jump forwards and backwards over the horizontal line of the cross, first on both legs and then only on the operated leg.
- jump from the centre of the cross towards each extremity of the four branches, returning to the center each time, without making a stop, first on both legs and then only on the operated leg.



Jumping on a step: jump up on a step, first on two legs and then only on the operated leg. Repeat the same exercise jumping down off the step.



Star run: starting from a central point, run forwards, backwards and sideways, following the different directions of the lines of a star.

At the end of the 4th month, we advise you to add the following exercises to improve explosive strength and power:



Hopscotch: jump sideways, from one leg to the other, moving forwards over an imaginary vertical line. Progress this exercise by jumping higher and increase the step width.



The frog :

- jump as high as possible on the spot, first on both legs and then only on the operated leg.
- jump as high and as far as possible as if you are going to clear a hurdle, first on both legs and then only on the operated leg.
- Do the longest possible triple jump, first on both legs and then only on the operated leg.

STAGE 6: FROM 6th MONTH ONWARDS

You have reached the last stage of your rehabilitation. Continue with stage 5 exercises for as long as necessary. Please consult the previous video if you have any doubts.

Before resuming sports involving cutting and pivoting (sudden stop and start) such as badminton, squash, tennis, football, basketball, ice-hockey, skiing, etc:

- We advise a progressive return to sport with **miming exercises**: return to the side of the pitch to repeat the movement sequences of your specific sport, progressively increasing the speed. There should be no physical contact at this stage.
- We advise you to complete a second series of **functional tests** with your physiotherapist to confirm that the deficits identified at the 4th month post surgery have been addressed. These tests are generally done at 8th month follow up. If the results of the tests are unsatisfactory, we will establish a rehabilitation program to account for these deficits. This is imperative to allow a safe return to sport.