Anterior Cruciate Ligament

Reconstruction

**Physiotherapy Information and Advice**



The ACL helps to stabilize the knee joint, when the ACL is injured, the knee can become unstable and often “gives way” on activities such as walking down stairs, twisting or running.

By reconstructing the ACL, the intention is to help regain this stability and allow the patient to continue with normal daily activities. Following the reconstruction a full course of rehabilitation is required.

Your Physiotherapist will give you advice and help you to regain the movement and strength in your knee. By strengthening the muscles around your knee through a graduated rehabilitation programme, you will help to control its stability and help prevent damage to the reconstructed ACL.

**General Advice**

Your stay is usually as a day patient

The exercises vary according to the intervention during your operation

Generally you will be given crutches to help you mobilise

The knee is often more painful the day after surgery.

Take the pain relief as prescribed for yourself; this will help you to exercise more comfortably

On discharge from hospital you will be referred for out-patient physiotherapy.

We can provide you with a list of local physiotherapists that we work closely with or you can use your own

The frequency of your physiotherapy appointments will be determined by the outpatient physiotherapist according to your need

Continue with your exercises given to you by your ward physiotherapist until you see the out-patient physiotherapist

Progress your exercises only under the guidance of your physiotherapist

If any of your exercises cause a sharp pain, stop doing that particular exercise until review by your physiotherapist. Continue with all the other exercises

**Operation details**

Under general anaesthetic, we will use one of your 4 hamstring tendons to reconstruct the damaged ACL.

**On the Ward**

Your Physiotherapist will demonstrate exercises which will help to strengthen and reduce stiffness within your knee. Once you can perform these, you will be encouraged to get up and start walking with crutches. Your physiotherapist will advise you about how much weight to put through your operated leg.

Be sure to support your operated leg with the other leg when getting on and off the bed.

Once you are comfortable using crutches and can perform the exercises, you will be shown how to climb the stairs safely using your crutches.

It is important to continue the exercises at home to progress the strength and mobility of your knee.

You will be advised when it is appropriate to remove the bandages from your knee.

Local physiotherapy should commence within 2 weeks following your operation for you to continue your rehabilitation.

**At Home**

After the operation you may experience some localised swelling in your knee. Elevation, with your knee supported and application of ice packs for 10-15 minutes, several times per day will help to alleviate this.

Remember, when using ice packs, there is a danger of an ice burn. To prevent this ensure that you always place the ice pack in a plastic bag or cotton pillow case to create a layer which is protective for your skin but thin enough to allow the cold to penetrate through.

**Stage 1 (1-14 Days): Surgery Recuperation**

Objectives:

* Removal of dressing by 24 hours
* Reduce swelling and manage pain
* Independent walking without crutches by day 14
* Full knee extension (equal to opposite side)
* At least 125° flexion
* Independent sit to stand (initially PWB then FWB)

Methods:

* VAS pain monitor
* Visual inspection of swelling
* Gait re-education
* Practice activity (sit to stand)
* Exercise regime (i.e flxn/extn ex’s, prone hangs, patella mobs, weight shifting.

home based)

* Advice on progression

*Notes:*

* *Multiplanar instability/meniscal surgery may require brace*
* *CPM not necessary*
* *Only functional strengthening (with activity and within tolerance)*

**Exercises**

Lying on your back with your legs straight, bend your ankles upwards and push your knees firmly against the bed.

Hold for 10 seconds. Repeat 10 times.

 

Lie on your back with a slippery surface under your leg (a plastic bin liner works well.) Bend and straighten your hip and knee by sliding your foot up and down.

Repeat 10 times.



  

Sit with your leg out straight, push your knee cap outwards and inwards in a slow rhythmical manner for 1 minute.



Sit on a chair with wheels, walk the chair backwards and forwards.

Repeat this 10 times



In long sitting, bend your operated leg and place a rubber exercise band around your foot.

Straighten you knee against the resistance of the band, keeping your heel on the floor/bed.

Repeat 10 times.

If your knee unduly swells following exercise, consult your Physiotherapist for advice.

**Stage 2 (2-6 weeks): Gentle Generalised Rehab**

Objectives:

* Full ROM (same as contralateral)
* Keep swelling down
* Build strength
* Controlled squat\* with equal weight bearing
* Neuromuscular improvement
* Normal gait
* ASLR with no lag

Methods:

* VAS pain monitor & visual inspection of swelling – ice if necessary & advise on home
* Gait re-education / drills
* Leg press, mini tramp, stationary bike, rower
* Hamstring stretches within tolerance
* Hamstring curls with light weights at 3-4 weeks if good control
* Eccentric quads exercises from 3 weeks if good control and comfortable
* Exercise programme (initially supervised but should continue at home)
* Advice on progression (resistance/reps/time: aim for 3 x daily 3x15)
* Single leg stand exercises / simple proprioception exercises

*Notes:*

* *Autograft at its weakest, use pain as guide*

**Stage 3 (6-12 weeks): Single Plane Strengthening**

Objectives:

* Good control single plane activity
* Good control in components of multiplane activity (ie side lunges, single leg stand with semicircle contralateral foot placement)
* Y balance test equal on both sides
* Improve cardiovascular state
* Improve strength of quads/hamstrings (should be doing strenuous pain free strengthening at least 3 x week)
* Improve confidence in knee
* Improve neuromuscular control in single plane to allow acceptance of impact activities (SLSt at least 10 seconds, SLSq at least 45 degrees with good control & no swelling)

Methods:

* Bike (outside)
* Gentle jog in straight line as comfort allows/jogging on spot
* Progress strengthening for all muscle groups (increase weight, reps i.e. 3 x 10 reps at around 60-80% 1 rep max). Develop confidence and strength in pain free CKC, progressing to open chain as function and pain allows
* Proprioceptive rehabilitation (increase difficulty as control improves)
* Controlled squat (increase range & resistance)
* Lunges (4 way lunge)
* Swimming (but suggest no breastroke legs)
* Jump/hop ladder drills in single plane as pain/control allows (should be no swelling, full knee extn, SLS for at least 10 secs and single leg squat to between 45-60°)
* Step offs, bounce jumps, leap & land, jump stops, carioca if good control and min pain

*Notes:*

* *Dip in quads strength at 7 weeks so vulnerable*

**Stage 4 (3-5 months): Multiplanar Strengthening**

Objectives:

* Good control/technique & minimal pain in multiplanar activity (rotations, direction change etc – should not be initiated before 8 weeks post op)
* Normal strength compared to other side

Methods:

* Bike, jogging, change of direction drills with increasing difficulty
* Continue to progress strengthening for all muscle groups
* Proprioceptive rehab increase difficulty (for those patients who require it)
* Full squat

Markers for progression to next stage if appropriate*:*

• Vertical Hop

• Vertical 4 Hop

• Horizontal Hop

• Horizontal Cross-over Hop

• Repeated Hop for fatigue

**Stage 5 (after 5 months): Sports Specific Preparation/Injury prevention**

Objectives:

* Participate in sports (external threat, rotations, direction change, unplanned challenge etc)
* No stability related fear

Methods:

* Sport specific activity / drills
* Continued strengthening

**Driving**

You may return to driving when you have sufficient flexibility and strength in your knee and you are putting full weight through your knee. This is usually after 6 weeks. To ensure that you are safe to return to driving you must be able to perform an emergency stop. It is advised that you contact your insurance company to check that you are fully covered after your operation.

**Work**

Returning to work will depend on what this activity involves.

For sedentary jobs it is usually between 2-6 weeks, allowing for the fact that the leg should be elevated for periods and you should be able to mobilise regularly throughout the day.

**Sport**

When returning to any level of sporting activity, it is best to consult your physiotherapist regarding timing and intensity. Your rehabilitation can be developed to be specific to your sport.

It is usual to return to straight line jogging from 3 months onwards, cutting and twisting movements from 6 months onwards and return to contact sport is between 9-12 months.

**Notes:**