

MPFL reconstruction



MPFL rehabilitation

Key to Success

The overall rehabilitation plan emphasises the importance of pre-operative exercises followed post operatively by early control of swelling and regaining full extension (straightening) and flexing of the knee (bending). Working on strength can only start once swelling and range of movement have been controlled. Return to function then follows.

For the first six weeks, until the new graft is well bedded in and healed in place, exercises are performed gently with the aim of regaining normal bending and straightening and VMO muscle activation as the swelling settles. Repetitive cycling of the knee is restricted during the first 6 weeks as this may overload the fixation of the ligament and lead to slippage of the graft and effective lengthening of the new ligament.

Elevation of the leg between exercises to reduce swelling is also important and helps allow the bending to improve.

Summary of Rehabilitation

There are six main rehabilitation phases and example exercises for each phase are given in the sections that follow. Many different exercises are available to achieve the goals and these are tailored to each individual by the physiotherapy team. Various example exercises are outlined in each section.

- Phase 1: Initial Post Op Phase: First 2 weeks.
- Phase 2: Proprioception/VMO activation (sensory awareness)/ROM Phase: Weeks 3 – 6.
- Phase 4: Strength Phase: Weeks 6 – 12.
- Phase 5: Early Sport Training: Months 3 – 6.
- Phase 6: Return to Sport: Months 6 – 9.

Specific Follow-up assessment: Outpatient review takes place at the following times and the goals for those stages are detailed in the guidelines:

- 2 weeks
- 6 weeks
- 3 months
- 6 months
- 1 year

Phase 1: Leaving hospital

First 2 weeks

- Mobilise FWB with no splint if SLR present (otherwise splint required until SLR achieved)
- De-bulk outer dressings Day4-5. Keep adhesive dressings intact.
- Replace with double Tubigrip
- Active knee flexion within pain limits to 90°
- SLR
- Home day of surgery or morning of next day.
- Control swelling
- Limit mobilisation but wean off crutches
- PT OPD appointment 1/52 to progress exercises and wean from crutches

The aim is to go home comfortable and ready for rehabilitation on the first postoperative day. Sometimes it is possible to go on the day of surgery. Instruction on using crutches and the exercises to be performed for the first 2 weeks are provided by the physiotherapist in hospital.

General advice on return to work and driving

- Desk work at 3 – 4 weeks
- Light manual work at 6 weeks
- Heavy manual work (ladder work etc) at 3 – 4 months.
- Driving Advice: return to driving at 3 – 4 weeks depending on knee function.

Phase 2

Initial Post Op Phase – First 2 Weeks

Aim The aim of this phase is to regain the range of joint movement and to allow swelling in the knee to settle. After seeing the physiotherapist on the ward the next appointment is usually one week following surgery to add in extra exercises.

2 Week Review Goals:

Range of movement: full knee extension to 90 flexion
Wound healed
Minimal swelling in knee and around wound
Normal walking pattern
Independent leg control

Phase 3

Proprioception, ROM, VMO activation Phase (Sensory Awareness) WEEKS 3 – 6

Aim:

The aim of this phase is to work on proprioceptive exercises, activation of VMO muscle, gentle patella mobilisation and to develop light endurance and strength training. This stage is also important for developing core stability to help you progress to full active function. By the end of six weeks your knee should feel normal in activities of daily living.

6 Week Review Goals:

Full range of movement including normal hyperextension
Minimal swelling in knee
Minimal discomfort
Activation/understanding of VMO
Normal superior, inferior, medial patella mobility

Phase 4

Strength Phase - Weeks 6 – 12

Aim:

At six weeks the graft will be solidly fixed into bone so that more vigorous strength training can start. High muscle tone and definition (quadriceps / hamstrings) will be hopefully have been maintained during the first post op phase and now the main strength work can begin. Progress is monitored and controlled by the recovery of strength and muscle control. It is important to avoid too rapid progress, as there is a risk of developing overload complications.

3 Month Review Goals:

Full range of movement
No swelling
Confident feeling of stability
Normal patella mobility – all directions

Phase 5

Early Sport Training Phase - Month 3 - 6

Aim:

Light sport training starting with jogging and progressing in intensity. This involves a progressive programme of slow and moderate speed strength training and agility drills. Higher level balance and proprioception activities commence. Manual work should be possible within the restraints of the occupation. The new ligament is still at significant risk of re-injury or of stretching out if progress back to full levels of sport is too fast.

There is no one solution that fits all individual's great emphasis is given on the care in progressing through this phase back to sport. Supervision by a Physio, sports coach or trainer is key, as drill and skill acquisition is dependent on individual muscular control patterning in addition to individual relative strength deficits around the hip, knee and ankle.

6 Month Review Goals

Full Range of movement
Functional and Strength tests: 85% of normal side
Return to non-contact sports training

Phase 6

Return To Sport Phase – Month 6 – 9 And Beyond

Aim

The aim of this phase is to progress sport training and to develop strength and endurance levels to allow return to full sporting activity. This takes time, especially in building up confidence to progress to full contact activities. Return to contact sport is not recommended until strength and functional outcomes are measured at greater than 85% of the normal knee. It should be remembered that the time to regain pre-injury level of skill and performance is very variable but can take 3 – 4 months of training and playing. This confidence can be helped by introducing modified training and specific drills early, often in conjunction with club or team activities. Progress is best achieved in conjunction with a general fitness programme, as this will have reduced over time since the injury and surgery. Full contact sport is, in general, best avoided until able to tolerate a full training session with confidence in full fitness and endurance.

Returning to Sport

Getting an individual back to their previous level takes specific rehabilitation tailored to the particular sport. Whilst the goal is clearly to get back to playing the same sport at the same level as before the injury there are various factors that need to be integrated including expectations, confidence, relearning old skills and learning new skills. These need to be identified and discussed.

Four key factors:

Expectations

There may have been a long downtime between injury and finally undergoing surgery such that other events such as age, business or family commitments may alter the ability to get back to sport at the same intensity.

Confidence

It can take a long time for an individual to regain the confidence in putting their knee and their body in to such a situation where it may be reinjured again. For the footballer, for example, though they may get back playing at nine months, it may not be until a year after surgery before they have fully forgotten their knee. It seems to be a natural human tendency that after a while injuries are forgotten and the confidence seems to return.

Relearning Old Skills

Each sport can be broken down into the specific drills and processes that are needed to perform well and these need to be identified along with the time intervals and goals before proceeding to the next specific skill. The phases follow a progression through regaining strength and then regaining functional knee control.

Learning New Techniques

Sometimes the reason why the MPFL ruptured in the first place was because of a poor technique such as poor landing control after jumping, leading to buckling of the knee. Individuals may need to unlearn some aspects of their sport and relearn new techniques in order to prevent reinjury.

Return to Sport Phases

For every sport the return to activity can be discussed under the following headings:

- Understanding the specific skill of the sport
- Ranking the specific skills by difficulty and risk to the knee
- Drills and techniques to achieve each target
- Understanding other activities that are safe to perform during rehab