



CHILDREN'S **KNEE** SPECIALIST

Mr John Jeffery

Medial Patellofemoral Ligament (MPFL) Reconstruction Post Operative Guidelines

INTRODUCTION

This is a general guide to rehabilitation for patients who have undergone an MPFL reconstruction by Mr John Jeffery, Consultant Orthopaedic Surgeon and Children's Knee Specialist.

Please note, when it comes to rehab, one size does not fit all. Rehab is physio led and may differ from these guidelines as a result of therapist preference, patient progress and local practices. Please check the post-operative note for any restrictions or variations from these guidelines.

GUIDANCE

The time scales are an approximate guide and may be altered depending on various factors such as pain, swelling and muscle control. The patient's management should be tailored to meet individual objectives.

PHASE 1: Extension (week 0-2)

Immediate post-operative stage. No initial blood supply to the graft..

Primary aims: Control pain and swelling, achieve full extension and quadriceps activation.

- Active and active-assisted knee flexion
- Static and inner range quadriceps exercises, straight leg raise taught (test rather than exercise)
- Ankle dorsiflexion/plantarflexion exercises, including weightbearing calf stretches
- Mobilise weight-bearing as tolerated with crutches with a quality gait pattern
- Swelling management
- Education regarding rehabilitation, and what to expect at each milestone. Address any fear-avoidance issues—reiterate the importance of the patient taking responsibility for increasing ROM and function.
- Gentle closed chain quadriceps exercises—emphasis on alignment and co-contraction
- Portal/scar management following wound review
- Start basic proprioception, balance and coordination training
- Consider core and hip stability exercises

Precautions:

- No resisted hamstring flexions for 8 weeks (if hamstring graft used)

PHASE 2: Flexion (week 2-6)

Graft fixation healing. The graft undergoes avascularisation which reduces its strength. The graft is at its weakest at 6 weeks.

Primary aims: Maintain full extension and achieve >90 degrees flexion. Normal symmetrical gait pattern without crutches.

- Swelling management
- Wean off crutches as pain and quadriceps control allows
- Progress closed chain quadriceps exercises with cocontraction—double leg wall mini squats, sit to stand, lunges (onto step if PFJ pain problematic)
- Closed chain knee flexion exercises
- Hamstring donor site management—soft tissue techniques, gentle stretching, concentric and eccentric exercises
- Patella mobilizations—no lateral glides
- Proprioception, balance and coordination training
- Core and hip stability exercises
- Once 100° flexion is achieved can start using a stationary bike
- Gait re-education; sit to stand, stair re-education; encourage incorporation into ADL

Precautions:

- Avoid overstressing fixation with overpressure into flexion
- Resisted open-chain quads - due to PFJ overload

PHASE 3: Strength (week 6-12)

Graft revascularization. The graft gains a blood supply and goes through the process of ligamentisation

Primary aims: Achieve full range of motion. Introduce low-impact cardiovascular exercises. Build proximal strength and control.

- Exercises need to be tailored to their functional aim
- Road cycling allowed in flat pedals only
- Cardiovascular fitness
- Proprioceptive exercises—add controlled rotational exercises
- Swimming—freestyle and pool walking
- Multigym if fully weight bearing with symmetrical gait and low/moderate pain and or swelling
- Patient education - if they have had a long-term condition, they may have altered their movement patterns to accommodate. They need to be advised that rehabilitation could take 6–9 months.

Precautions:

- No resisted hamstrings until 8 weeks
- No breaststroke until 3 months

PHASE 4: Sport-specific rehab (>12 weeks)

Graft strengthening. By this stage the graft fixation is consolidated. At 4 months there is complete revascularization of the graft, laying down of collagen and gradual increase in strength.

Primary aims: Introduce high-impact cardiovascular exercises. Increase fitness and work towards normal gait in sprinting and good control of cutting, pivoting, stopping and starting.

- Increase fitness
- Introduction of impact work — only if a full range of extension, eccentric quadriceps control with correct alignment
- Gradual increase in resisted open-chain/closed chain quadriceps (avoid pain)
- Continue with proprioceptive training—increase rotational control

RETURN TO SPORT

Final decision on return to sport is up to the individual physiotherapist after assessment of the patient's progress and milestones. Return to training and non-match play can be expected at about 4 months post op.

We do not recommend returning to competitive/contact pivoting sport (i.e. match play) until 6 months post-surgery and this should be built up to in a graded fashion as with any rehabilitation. We do not have a preferred return-to-play criteria to use but example criteria include:

- >80% hop height, length and cross over
- >80% strength of non-involved limb
- Confidence in knee
- Awareness of safe positioning of limb and cutting/landing technique (see poweruptoplay.org)

FUNCTIONAL MILESTONES SUMMARY

Activity	Time Scale
High-impact exercise (jogging)	3 months
Sport-specific drills	4 months
Non-match sport	5 months
Competitive sports	6 months

RED FLAGS

The following should prompt urgent referral back to clinic:

- Redislocation/rupture of graft
- Signs of infection
- Thrombosis

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