

MEDIAL PATELLOFEMORAL LIGAMENT RECONSTRUCTION ADULTS & PAEDIATRICS

SETTING	Physiotherapy
FOR STAFF	Musculoskeletal Physiotherapists
PATIENTS	Patients who have had a Medial Patellofemoral Ligament Reconstruction (MPFLR) by Nick Howells

PROTOCOL

This protocol is a general guide to rehabilitation. The time scales are an approximate guide and may be altered depending on various factors such as pain, swelling and muscle control. Pain along the graft site is relatively common for up to 4 months post operatively and should not prevent participation in rehabilitation. The patient's management should be tailored to meet individual objectives.

The MPFL is reconstructed using a hamstring graft. It is attached in the medial femoral condyle with a screw, there is a drill hole through the patella, and attached laterally with an endobutton.

The aims of rehabilitation are to protect the reconstruction in the early stages and to maximise range of motion, strength and function

Please check the post-operative notes for any variation in management.

General Points

	Post-operative
0-2 Weeks Inflammatory stage. No initial blood supply to the graft Aims: <ul style="list-style-type: none"> • Decrease / control swelling and pain • Full active and passive extension, flexion • Good quads contraction and ability to SLR • Full weight-bearing as tolerated. 	<u>Day case / 23 hour stay</u> <ul style="list-style-type: none"> • 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 weight-bearing 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. • Port hole / scar management following wound review • Start basic proprioception, balance and co-ordination training • Consider core and hip stability exercises Contraindications: <ul style="list-style-type: none"> • no resisted hamstrings or flicks for 8/52 (hamstring graft)
Week 2 – 6	<ul style="list-style-type: none"> • Swelling management

<p>Graft fixation healing. Avascularisation of the graft which reduces its strength.</p> <p>Aim:</p> <ul style="list-style-type: none"> • Full extension (normal / hyper-extension) and near full flexion • Good activation of quadriceps and straight leg raise with NO lag • Minimal pain • Mild/stable effusion • Normal gait pattern without crutches 	<ul style="list-style-type: none"> • Wean off crutches as pain and quadriceps control allows • Progress closed chain quadriceps exercises with co-contraction- 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 co-ordination 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 <p>Considerations: Quality of movement to ensure maximum contact points</p> <p>Precautions: Avoid overstressing fixation with overpressure into flexion</p> <p>Contraindications: Resisted open chain quads – due to PFJ overload</p>
<p>Week 6- 12 The graft goes through the process of revascularization and ligamentisation. By 8/52 the graft fixation is consolidated</p> <p>Aim: Controlled pain and swelling. Full ROM- must exceed 90 flexion (by 6/52)– if not refer back to clinic as may need manipulation. Increase quadriceps and VMO control for restoration of proper patella tracking. Good proximal alignment and control. Quality of movement to ensure maximum contact points.</p>	<p>Exercises need to be tailored to their functional aim</p> <ul style="list-style-type: none"> • Road cycling – no clips or cleats – “normal pedals only” • CV fitness • Proprioceptive exercises – add controlled rotational exercises • Swimming – freestyle and pool walking <p>Precautions: Avoid impact work and deep squats/lunges especially if pre-existing PFJ pain and/or degenerative articular lesions</p> <p>Contraindications: no breast stroke until 3 months</p> <p>Considerations: Multigym if fully weight bearing with symmetrical gait and Low / moderate pain and or swelling</p> <p>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 6-9/12</p>
<p>Week 12- 16</p> <p>By 3 months the graft fixation is consolidated. At 4 months there is complete revascularization of the graft, laying down of collagen and gradual increase in strength</p> <p>Aim: knee extension strength at least 70% of other knee. Good active patella control with no evidence of lateral tracking or instability.</p>	<ul style="list-style-type: none"> • Increase fitness • Introduction of impact work— ONLY if 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
<p>Week 16+</p> <p>Aim:</p> <ul style="list-style-type: none"> • Full pain free ROM. • Raise fitness targets and set new goals • Increase speed of balance reactions and improve co-ordination • Normal gait in running. Good control 	<ul style="list-style-type: none"> • Initiate running – gradual paced change of terrain / gradient and duration • Progressive introduction of dynamic activity <ul style="list-style-type: none"> – jumping / hopping (start on the trampette, emphasis on alignment of both push off and land) – change of direction; start single direction and progress to cutting, multidirectional and pivoting

<p>of cutting, pivoting, stopping and starting if required</p> <ul style="list-style-type: none"> • Sport specific exercises progressively sequenced to include walking followed by running forwards/ backwards/ sideways; changing directions • Advice on returning to training 	<ul style="list-style-type: none"> - stopping / starting and acceleration / deceleration - backwards running
<p>Months 6+</p> <p>Aim: Non-contact -> contact) sports training Suggest return to sport at 6-9 months</p>	<p>Prior to return to sports training:</p> <ul style="list-style-type: none"> • Satisfactory single limb dynamic control • 85% hop for height, length and cross over • 80% strength of non-involved limb • Confidence in knee • • Return to activity non-contact training initially

Functional Milestones

Activity	Time Scales
Sedentary work	4-6 weeks as tolerated
Driving	4 weeks, once can control car
Active job / on feet all day	2 months
Very heavy manual job / ladders etc	3 months+
Manual work	12 weeks / liaise with consultant

Refer back to clinic:

Signs of infection,
Thrombosis
Dislocation
Persistent stiffness > 8/52

N.B. Always check the post-operative notation for any variant in the rehabilitation
