

## RJAH Medial Patellofemoral Ligament (MPFL) Reconstruction Guide

Patient Details:

Co-morbidity:

Note to Therapist:

*\*This is a guide to progression, not an exhaustive list of rehabilitation and does not replace clinical reasoning.*

*\*Treat any soft tissue symptoms on their merit.*

*\*Objective Tests can be used as an indication for progression.*

*\*Special Instruction(s) includes specific post-operative advice for the individual patient based on their surgeon's recommendation (as applicable). This will be completed on discharge or follow-up clinic appointments.*

PHASE OF REHABILITATION	IDEAL CRITERIA	REHABILITATION GUIDE	GOALS	OBJECTIVE TEST	SPECIAL INSTRUCTION
<b>PHASE 1</b>  <b>From Day 1</b>	<ul style="list-style-type: none"> <li>○ Successful operative outcome</li> <li>○ Adequate pain relief</li> <li>○ Understands post-op instructions</li> </ul>	<ul style="list-style-type: none"> <li>• Cryocuff/Ice</li> <li>• CPM if available</li> <li>• Active-assisted and active F and E exercises</li> <li>• EOR E mobilisations</li> <li>• H and calf stretches</li> <li>• Ankle Exercises (e.g. heel raises)</li> <li>• SQ progressing to SLR</li> <li>• IRQ</li> <li>• Co-contraction Q and H</li> <li>• Prone SLR</li> <li>• Weight transferring</li> <li>• Elbow crutches for comfort</li> </ul>	<ol style="list-style-type: none"> <li>1. Reduce inflammation</li> <li>2. Gain terminal E</li> <li>3. Promote distal circulation</li> <li>4. Gradually regain ROM</li> <li>5. Increase confidence</li> <li>6. Promote early mobility</li> </ol>		

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<p><b>PHASE 2</b></p> <p><b>From Week 1</b></p>	<ul style="list-style-type: none"> <li>○ Full active and passive E</li> <li>○ ≥90° F</li> <li>○ Mobilise independently +/- aids</li> </ul>	<ul style="list-style-type: none"> <li>• Mini squats/ small knee bends</li> <li>• Static Bike or Turbotrainer no/low resistance as tolerated (part revolution → full revolution as symptoms dictate). DO NOT use cleats or clips on pedals</li> <li>• Gradually increase weight-bearing</li> <li>• Independent gait re-education</li> <li>• Other muscle groups not to be neglected</li> <li>• Upper body active exercise → resis/reps/sets/speed</li> </ul>	<ol style="list-style-type: none"> <li>1. Promote early function</li> <li>2. Increase ROM</li> <li>3. Encourage FWB</li> <li>4. Improve muscular control</li> </ol>	<p>AROM</p> <p>PROM</p> <p>SLR</p>	

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<p><b>PHASE 3</b></p> <p><b>From Week 2</b></p>	<ul style="list-style-type: none"> <li>○ FWB</li> <li>○ SLR no lag</li> <li>○ AROM = Full E - <math>\geq 100^\circ</math></li> </ul>	<ul style="list-style-type: none"> <li>● Patella mobilisations (avoid lateral glides)</li> <li>● Prone auto-over press F → develop into Q stretch</li> <li>● Gait with predictable changes in direction</li> <li>● Sit → Stand</li> <li>● Low step-touch → step-up → step over</li> <li>● Lunges (aim for ideal alignment and control)</li> <li>● Bridges (aim for ideal alignment and control)</li> <li>● Proprioception → single leg stance/wobble boards/Trampette/crash mats/etc.</li> <li>● Gymball and Theraband work</li> <li>● Lower body active exercise (<b>exception of OKC Q until Month 3</b>) → resis/reps/sets/speed</li> <li>● Muscle balance exercises as appropriate</li> <li>● Core stability exercises as appropriate</li> <li>● Flexibility exercises as appropriate</li> <li>● Rowing → dist./speed/resis</li> <li>● X-Trainer → dist./speed/resis</li> <li>● Hydrotherapy (<b>AVOID breaststroke leg kick until Month 3</b>)</li> </ul>	<ol style="list-style-type: none"> <li>1. Progress functional activities</li> <li>2. Prevent AKP</li> <li>3. Prevent scar adherence</li> <li>4. Prevent joint stiffness</li> <li>5. Restore normal gait pattern</li> <li>6. Promote appropriate muscle strength, power and endurance</li> <li>7. Improve neuromuscular/ proprioception/ sensorimotor performance</li> <li>8. Maintain cardiovascular fitness</li> <li>9. Encourage patient compliance</li> </ol>	<p>AROM</p> <p>PROM</p> <p>Single Leg Stance</p> <p>Clam</p> <p>Planks</p>	

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<b>PHASE 3</b> <b>From Week 6</b>	<ul style="list-style-type: none"> <li>○ Normal symmetrical gait</li> <li>○ AROM = Full E - <math>\geq 100^\circ</math></li> <li>○ <b>AROM – If <math>90^\circ</math> is not achieved by week 6 inform Consultant</b></li> <li>○ Single leg stance <math>\geq 80\%</math> parity</li> <li>○ Clams 10 reps with 10 sec hold ideal control [L] &amp; [R]</li> <li>○ Directional Planks 30 sec hold ideal control</li> </ul>	<ul style="list-style-type: none"> <li>• Step-ups (for/back/sideways/over) <math>\rightarrow</math> height/reps/speed</li> <li>• PWB (parallel bars) jumps, hops, leaps <math>\rightarrow</math> control technique/speed/reps</li> <li>• Leg Press/Squats <math>\rightarrow</math> resis/reps/sets/speed</li> </ul> <p><i>Sequencing of training:</i></p> <ul style="list-style-type: none"> <li>• Train 3 – 4 x per week</li> <li>• Train strength and endurance on separate days</li> <li>• Have a minimum of 24 hours between strength days</li> <li>• Choose numbers of sets and rest time between sets</li> <li>• Alternate upper/lower body exercises within session</li> <li>• Speed of contraction should be moderate to fast, but controlled.</li> <li>• Vary load/set/rest between sessions</li> <li>• Adjust if necessary based on symptoms</li> <li>• <i>Strength:</i> 10 – 20 min CV warm-up (exception of jogging/running) Choose a load 1 – 12 RM</li> <li>• <i>Endurance:</i> Gradually progress toward <math>\geq 45</math> min continuous CV exercise (exception of jogging/running) Choose a load 15 – 20 RM</li> </ul>	<ol style="list-style-type: none"> <li>1. Promote appropriate strength, power and endurance based on individuals needs</li> <li>2. Improve neuromuscular performance</li> <li>3. Increase confidence</li> </ol>	<p>AROM</p> <p>PROM</p> <p>Single Leg Squat <math>60^\circ</math></p> <p>Effusion</p>	<p>Avoid deep squats and lunges if pre-existing PFJ pain and/ or degenerative articular cartilage lesion.</p> <p>Mild/ moderate pain and swelling is common, and consideration to the progression of exercises is based on clinical reasoning and or Consultant guidance.</p>

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<b>PHASE 4</b> <b>From Week 12</b>	<ul style="list-style-type: none"> <li>○ Single Leg Squat 60° 5 sec hold with good alignment</li> <li>○ No/ minimal effusion</li> <li>○ No/ minimal pain</li> </ul>	<ul style="list-style-type: none"> <li>• Gradually progress from PWB to FWB and double footed to single footed plyometrics as dictated by neuromuscular control, pain and swelling</li> <li>• Introduce OKC Q, progress resis as dictated by symptoms</li> <li>• Introduce jogging → running when Q strength, neuromuscular control, pain and swelling is adequate.</li> </ul>	<ol style="list-style-type: none"> <li>1. Sport specific function</li> </ol>	<p>AROM</p> <p>PROM</p> <p>5 RM</p> <p>Hop for distance</p>	
<b>Phase 5</b> <b>From Week 16</b>	<ul style="list-style-type: none"> <li>○ No/ minimal effusion</li> <li>○ Full pain free AROM</li> <li>○ 5 RM &gt;80% parity</li> <li>○ Hop for distance &gt;80% parity</li> </ul>	<ul style="list-style-type: none"> <li>• Progress from jog → run → sprint</li> <li>• Add agility drills when sufficient control and confidence is achieved e.g. twist/turn/pivot/cut/accelerate/decelerate/direction. Progress from predictable agility to unpredictable</li> <li>• Advance dynamic proprioceptive exercises e.g. volleying football, throwing, catching, racket and ball while balancing on trampette</li> <li>• Perturbation training e.g. therapist randomly nudges patient off balance during a single leg throw-catch drill</li> <li>• Non-contact sport specific training → terrain/volume/periodisation</li> </ul>	<ol style="list-style-type: none"> <li>1. Prepare neuromuscular and psychological ability to return to unrestricted function</li> </ol>	<p>Vertical Jump</p> <p>As indicated for individuals goals</p>	

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<b>PHASE 6</b> <b>From Week 24</b>	<ul style="list-style-type: none"> <li>○ All Tests &gt; 90% parity</li> <li>○ <b>Dependent on Consultant's approval</b></li> </ul>	<ul style="list-style-type: none"> <li>● Earliest return to contact sport training</li> <li>● Progress to full restriction free sports and activities</li> </ul>	<ol style="list-style-type: none"> <li>1. Unrestricted confident function</li> <li>2. Injury prevention</li> </ol>	Full sporting function	

Terminology Key:

E	Extension	PWB	Partial Weight Bear
F	Flexion	FWB	Full Weight Bear
EOR	End of Range	ROM	Range of Movement
IRQ	Inner Range Quadriceps	AROM	Active Range of Movement
SLR	Straight Leg Raise	PROM	Passive Range of Movement
Q	Quadriceps	OKC	Open Kinetic Chain
H	Hamstrings	resis	Resistance
AKP	Anterior Knee Pain	reps	Repetitions
[L]	Left	RM	Repetition Maximum
[R]	Right	CV	Cardiovascular
PFJ	Patellofemoral Joint		