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Mr Gilbert and Mr Coupe Sports Knee Clinic Wrightington Hospital

#### POST-OPERATIVE MEDIAL PATELLOFEMORAL LIGAMENT RECONSTRUCTION PROTOCOL

- Ensure patient achieves milestone prior to progression
- \* Timings are a guideline only and progression should be individual to the patient
- No return to contact sports prior to 3 months post-op return to sport dictated by particular sport, ability, fitness, confidence, and completion of Phase 4 of the protocol
- Any problems during rehabilitation please contact Jo Armstrong, Wrightington Physiotherapy Department, 01257 256533

#### PHASE 1 EARLY POST-OPERATIVE PHASE (day 1 - 2 weeks)

Goal	Treatment	Milestone to Progress to Phase 2
Minimise swelling and pain	<ul> <li>Use of ice</li> <li>Ensure adequate pain relief</li> <li>Elevate leg</li> <li>Use of crutches</li> <li>Cricket pad splint for mobilizing for 48 hours</li> </ul>	<ul> <li>Minimal or no effusion</li> <li>Pain levels managed to enable exercise progression</li> <li>Full or nearing full extension</li> <li>Knee flexion 70°- 90°</li> </ul>
Regain full range of extension/hyperextension	<ul> <li>Extension exercises: static quads, heel props, prone hanging</li> <li>Passive stretching</li> </ul>	<ul><li>Ability to activate quads</li><li>Symmetrical gait pattern with crutches</li></ul>
Increase knee flexion as pain allows	Passive, active assisted and active flexion exercises	
Activate quadriceps	<ul><li>Static quads hourly</li><li>Use of EMS if available</li><li>VMO</li><li>SLR if possible</li></ul>	
Early hip/gluteal strengthening	Hip abduction/extension/ER strengthening	
Restoration of normal gait pattern	Gait re-ed with elbow crutches, WB as pain and control allows	



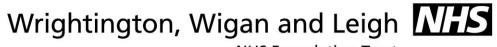
# PHASE 2 - QUADS ACTIVATION AND CORE STRENGTH (approximately 2 weeks - 6 weeks)

Goal	Treatment	Milestone to Progress to Phase 3
Minimise swelling and pain	Continue as above	Minimal/no effusion     Full range extension
Regain full range of extension/hyperextension	<ul><li>Extension exercises as above</li><li>Passive stretching</li></ul>	<ul> <li>Full or nearing full range flexion</li> <li>SLR with no lag</li> <li>Bilateral squat to 60° with even, symmetrical WB</li> <li>FWB</li> <li>Single leg stand for at least 5 seconds</li> </ul>
Increase knee flexion as pain allows	Active flexion exercises     Progress to quads stretch	
Improve quads strength	<ul><li>Static quads</li><li>SLRs - ensure no lag</li><li>VMO</li></ul>	
Improve gluteal strength and general lower limb strength	<ul> <li>Continue hip abduction/extension/ER/bridging</li> <li>Hamstring curls and calf raises</li> <li>Exs bike</li> <li>Begin mini squats once adequate strength and control</li> </ul>	
Restoration of normal gait pattern	Ensure FWB without crutches once adequate quads control	
Commence proprioceptive work/balance work	<ul> <li>Weight transfer</li> <li>Progress to single leg stands once adequate quads control</li> <li>Wobble board/sit fit</li> </ul>	
Improve core strength	Core stability strengthening	



# PHASE 3 - STRENGTH AND CONTROL (approximately 6 weeks - 12 weeks)

Goal	Treatment	Milestone to Progress to Phase 4
Minimise swelling and pain	Continue cryotherapy and elevation as necessary	Minimal/no activity related effusion     Full ROM
Regain/maintain full range of flexion and extension	Continue stretching regime	<ul> <li>No instability/patellar apprehension</li> <li>Normal, symmetrical gait/jogging pattern</li> <li>10 x single leg squats to 60° with good alignment and control (i.e. no valgus &amp; good hip/knee/ankle alignment)</li> <li>Single leg stand with eyes shut over 80% of unaffected leg</li> </ul>
Improve quads, hamstrings, gluteal and general lower limb strength	<ul> <li>Squats to 90°, lunges, leg press, VMO</li> <li>Hamstring curls</li> <li>Continue hip abduction/extension/ER with increased resistance</li> <li>Exs bike, step ups, cross trainer</li> </ul>	
Improve neuromuscular control	Knee alignment/prevent valgus - single leg squats, lunges (+/- trunk rotation), step ups/downs (ensure good hip/knee/ankle alignment)	
Restoration of normal gait pattern	<ul> <li>Treadmill walking - forwards/backwards/incline</li> <li>Progress to straight line jogging only when good load acceptance and neuromuscular control</li> </ul>	
Improve proprioception	<ul><li>Single leg stands eyes shut</li><li>Wobble board/sitfit/BOSU/trampette</li></ul>	
Improve core strength	Progress core stability strengthening	
Commence bilateral load acceptance/early plyometrics if returning to sport	Bilateral drop jumps     Jumps with symmetrical squat landing	



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# PHASE 4 - RETURN TO SPORTS PREPARATION (from 12 weeks approximately)

Goal	Treatment	Milestone to Progress to Return to Sport
Minimise activity related swelling and pain	Continue cryotherapy and elevation as necessary post exercising	Dynamic neuromuscular control with multi-plane activities – without instability or pain
Increase lower limb muscle strength and endurance	<ul> <li>Continue strengthening all muscle groups using increased loads for resistance</li> <li>Continue core stability strengthening</li> </ul>	
Improve neuromuscular control following fatigue	Ensure ability to control alignment after fatigue and during sports specific drills	
Normal straight line running pattern in full control	<ul> <li>Progress jogging to running</li> <li>Increase speed/distance</li> <li>Change surface/incline</li> <li>Forward running/backward running</li> </ul>	
Improve proprioception	Progress to dynamic proprioception exercises	
Progress bilateral load acceptance to unilateral load acceptance/plyometrics and work to fatigue	<ul> <li>Tuck jumps</li> <li>Squat jumps - forward/back/rotational</li> <li>Bilateral plyometric static and multi-plane exs</li> <li>Single leg hop</li> <li>Forward, side hops/drop from step with controlled single leg landing</li> <li>Unilateral plyometric static and multi-plane activities</li> <li>Increasing speed and intensity to fatigue</li> </ul>	
Commence sports specific running agility drills	<ul><li>Sprinting</li><li>Cutting and pivoting</li><li>Acceleration and deceleration</li></ul>	
Commence sports specific skills	One on one practice drills, ball skills, kicking, boxing, racquet sports	



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