

**POST-OPERATIVE MENISCAL REPAIR PROTOCOL**  
**Mr Mathias Nagy, Specialist Knee Surgeon**  
**Scarborough & Bridlington**

**PHASE 1: Post meniscal repair surgery. Day 1 to 6 weeks post-op**

<b>Goal</b>	<b>Treatment</b>	<b>Milestone to Progress</b>
Minimise swelling and pain	<ul style="list-style-type: none"> <li>• Use of ice</li> <li>• Ensure adequate pain relief</li> <li>• Elevate leg</li> <li>• Use of crutches – <b>must remain PWB for full 6 weeks</b></li> </ul>	<ul style="list-style-type: none"> <li>• Minimal or no effusion</li> <li>• Full extension/hyperextension</li> <li>• 90° knee flexion</li> <li>• SLR with no lag (10 reps)</li> <li>• Normal, symmetrical gait pattern with crutches</li> </ul>
Regain full range of extension/hyperextension (compare to non-operative knee)	<ul style="list-style-type: none"> <li>• Extension exercises: static quads, heel props, prone hanging</li> <li>• Passive stretching</li> </ul>	
Increase knee flexion as pain allows to 90° (unless otherwise stated by surgeon)	<ul style="list-style-type: none"> <li>• Active flexion exercises</li> <li>• Passive flexion over edge of bed</li> <li>• Patella mobilisations</li> <li>• <b>Ensure no flexion past 90° for full 6 weeks</b></li> </ul>	
Improve quads control and lower limb strength	<ul style="list-style-type: none"> <li>• Static quads, SLRs. <b>Ensure patient can SLR with no lag</b></li> <li>• Co-contraction quads and hams</li> <li>• Hamstring curls (no weight &amp; under 90°)</li> <li>• Gluteal strengthening</li> </ul>	
Ensure flexibility	<ul style="list-style-type: none"> <li>• Hamstring and calf stretches</li> </ul>	
Restoration of normal gait pattern	<ul style="list-style-type: none"> <li>• Gait re-education with elbow crutches, PWB</li> </ul>	

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**PHASE 2: Must have achieved phase 1 milestones. Weeks 6-12 post-op.**

Goal	Treatment	Milestone to Progress
Minimise swelling and pain (ensure no swelling before progression) Prevent anterior knee pain	<ul style="list-style-type: none"> <li>Continue as above, as necessary</li> </ul>	<ul style="list-style-type: none"> <li>No effusion</li> <li>Full range of extension</li> <li>Normal gait pattern without crutches</li> <li>Full range of NWB flexion</li> <li>Single leg stand eyes shut at least 5 seconds</li> <li>Bilateral squat with even, symmetrical weight bearing</li> <li>10 x single leg squats to 60° with good biomechanical alignment and control (i.e. no valgus and good hip/knee/ankle alignment)</li> </ul>
Regain/maintain full range of extension/hyperextension (compare to non-operative knee)	<ul style="list-style-type: none"> <li>Extension exercises as above</li> <li>Passive stretching</li> </ul>	
Restoration of normal gait pattern	<ul style="list-style-type: none"> <li>Ensure FWB, wean off crutches</li> </ul>	
Regain full range of flexion	<ul style="list-style-type: none"> <li>Active flexion exercises past 90° non-weight bearing</li> <li>Progress to full quads stretch</li> <li><b>No WB flexion past 90°</b></li> </ul>	
Improve quads, hamstring and general lower limb strength	<ul style="list-style-type: none"> <li>CKC – wall slide squats with gym ball, squats, leg press, single leg small knee bends etc. <b>Ensure no flexion past 90°</b></li> <li>Hamstring curls, bridging</li> <li>Calf raises, gluteal strengthening</li> </ul>	
Increase aerobic capacity	<ul style="list-style-type: none"> <li>Exs bike</li> <li>Treadmill walking</li> <li>Step ups</li> <li>Cross trainer</li> <li>Rower</li> <li>Pool exercise</li> </ul>	
Improve proprioception	<ul style="list-style-type: none"> <li>Single leg stand eyes open/eyes closed</li> <li>Wobble board</li> <li>BOSU</li> <li>Sitfit</li> <li>Trampoline</li> </ul>	
Neuromuscular control	<ul style="list-style-type: none"> <li>Core stability work</li> <li>Knee alignment/prevent valgus – squats, lunges, step ups, single leg squats (ensure good hip/knee/ankle alignment)</li> </ul>	

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**PHASE 3: Upon achievement of phase 2 goals. Over 12 weeks post-op.**

<b>Goal</b>	<b>Treatment</b>	<b>Milestone to progress</b>
Control activity related swelling and pain	<ul style="list-style-type: none"> <li>• Use of cryotherapy post exercise if knee swells with increased activity</li> </ul>	<ul style="list-style-type: none"> <li>• No activity related effusion</li> <li>• Full ROM</li> <li>• Normal gait and stair pattern – good alignment and control</li> <li>• 10 x single leg squats to 60° with good biomechanical alignment and control (i.e. no valgus and good hip/knee/ankle alignment)</li> <li>• Normal straight line running pattern</li> <li>• Single leg press &gt;75% body weight</li> </ul>
Regain/maintain full range of movement	<ul style="list-style-type: none"> <li>• Continue stretches</li> </ul>	
Normalise gait and stair pattern	<ul style="list-style-type: none"> <li>• Treadmill walking – forward/backward/incline</li> </ul>	
Improve quads, hamstring, and general lower limb strength	<ul style="list-style-type: none"> <li>• Continue CKC &amp; OKC – double &amp; single leg press, squats, lunges, increase weight</li> <li>• Hamstring curls – double &amp; single leg, increase weight</li> <li>• Calf, gluteals, adductor strengthening</li> </ul>	
Increase aerobic capacity	<ul style="list-style-type: none"> <li>• Exs bike</li> <li>• Treadmill walking</li> <li>• Step ups</li> <li>• Cross trainer</li> <li>• Rower</li> <li>• Pool walking/running</li> <li>• Running (when good control)</li> </ul>	
Improve proprioception	<ul style="list-style-type: none"> <li>• Single leg stand eyes closed</li> <li>• Wobble board</li> <li>• BOSU</li> <li>• Sitfit</li> <li>• Trampette</li> <li>• Progress to dynamic proprioception</li> </ul>	
Neuromuscular control	<ul style="list-style-type: none"> <li>• Core stability work</li> <li>• Knee alignment/prevent valgus as above – add trunk rotation</li> </ul>	
Commence load acceptance/plyometrics	<ul style="list-style-type: none"> <li>• Jumps with symmetrical squat landing</li> <li>• Progress to straight line jogging when good load acceptance</li> <li>• Squat jumps, forward/ back/ rotational</li> <li>• Bilateral plyometric static and multi-plane exs</li> </ul>	

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	<ul style="list-style-type: none"> <li>• Single leg hop with controlled landing</li> <li>• Forward, side hops/ drops from step with controlled single leg landing</li> <li>• Unilateral plyometric static and multi plane activities</li> <li>• Progress above by increasing speed/intensity to fatigue</li> </ul>	
Normal straight line running pattern without pain and in full control	<ul style="list-style-type: none"> <li>• Progress from jogging to running</li> <li>• Increase speed/distance</li> <li>• Change surface/incline</li> <li>• Forward running/backward running</li> </ul>	

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**PHASE 4: Upon achievement of Phase 3 goals.**

Commence sports specific running agility drills	<ul style="list-style-type: none"> <li>• Sprinting</li> <li>• Cutting and pivoting</li> <li>• Acceleration/deceleration</li> </ul>	<p><b>Milestone to progress</b></p> <ul style="list-style-type: none"> <li>• Maximal strength, endurance and control equal to opposite side</li> <li>• Flexibility equal to opposite side</li> </ul>
Commence sports specific skills	<ul style="list-style-type: none"> <li>• Ball skills</li> <li>• Dribbling</li> <li>• Boxing</li> <li>• Kicking</li> <li>• Sports specific activity with controlled opposition e.g. one on one practice drills</li> </ul>	
Neuromuscular control following fatigue	<ul style="list-style-type: none"> <li>• Ensure ability to control alignment under random practice and after fatigue</li> </ul>	
Return to sport	<ul style="list-style-type: none"> <li>• Controlled sport specific activity and progress to unrestricted sporting activity</li> </ul>	

**RETURN TO DRIVING:** Patient must be fully weight bearing and have the ability & strength to perform an emergency stop

**RETURN TO SPORT:** to safely & most efficiently return to normal or high level functional activity, the patient requires adequate strength, flexibility & endurance. Return to intense activities such as impact loading, jogging, deep knee flexion, or pivoting and twisting early post-operatively may increase the overall chance of a repeat meniscal tear. **No deep squats until at least 12 weeks. Instructions may vary for root repairs and RAMP lesions.**

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