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## Knee Patella or Trochlea Cartilage Protocol

Phase/ Goals	Immobilization	ROM	Therapeutic Exercises
<p><b>Phase 1 (0-6 weeks)</b></p> <p>Goals:</p> <ul style="list-style-type: none"> <li>● Decrease swelling</li> <li>● Gain full extension</li> <li>● Quad control</li> </ul>	<p>Hinged knee brace x 6 weeks</p> <p>Touch-down weightbearing x 2 weeks</p> <p>Then progress to WBAT once quad function returned</p> <p><b>Begin CPM machine immediate postop - begin 0-45, then progress 10 degrees per day</b></p> <p>Brace locked at 0 until quad strength returns</p>	<ul style="list-style-type: none"> <li>● Brace 0-90 x 6 weeks</li> <li>● Avoid forced flexion</li> <li>● Full extension important</li> </ul> <p>Modalities:</p> <ul style="list-style-type: none"> <li>● NMES if unable to perform SLR without lag</li> <li>● Cryocuff/Game Ready Compression/ Ice</li> <li>● Scar STM when incision healed</li> <li>● Patellar mobs all directions</li> <li>● Gentle prone quad stretch/knee flex</li> <li>● Manual assist extension/passive stretch</li> </ul>	<ul style="list-style-type: none"> <li>● Quad recruitment, NMES as needed</li> <li>● Terminal knee extension</li> <li>● Prone hangs, heel props</li> <li>● Passive motion</li> <li>● Ankle pumps</li> <li>● Quad sets/SLR in brace locked at 0</li> <li>● SLR in all planes with assist until no lag</li> <li>● Gastric/soleus stretch</li> <li>● Water/aquatic walking, marching in at least waist-deep water</li> <li>● Quad sets/glut sets, clams/mini-hydrants/glut pushes</li> <li>● Calf raises on leg press</li> <li>● Avoid open chain exercises that stress patellofemoral joint</li> </ul>
<p><b>Phase 2 (7-12 weeks)</b></p> <p>Goals:</p> <ul style="list-style-type: none"> <li>● No effusion</li> <li>● Progress to full ROM</li> <li>● Hip, quad, HS, calf strength</li> </ul>	<p>Wean from Brace</p>	<ul style="list-style-type: none"> <li>● Restore full ROM</li> </ul> <p>Modalities:</p>	<ul style="list-style-type: none"> <li>● Bilateral closed chain exercises</li> <li>● Leg press with 50% body weight</li> <li>● Normalize gait pattern</li> <li>● Hamstring curls</li> <li>● Quad rock backs</li> <li>● Lateral band stepping</li> <li>● Progress to unilateral strengthening</li> </ul>

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<p><b>Phase 3 (13-18 weeks)</b></p> <p>Goals:</p> <ul style="list-style-type: none"><li>• Full ROM</li><li>• Full weightbearing</li><li>• Normal gait</li></ul>	<p>Full weightbearing – unrestricted ROM</p>	<ul style="list-style-type: none"><li>• Full A/PROM</li></ul> <p>Manual:</p> <ul style="list-style-type: none"><li>• Joint mobs PRN for full flex and ext ROM</li><li>• Patellar mobs/ Scar STM with extractor</li></ul> <p>Modalities:</p> <ul style="list-style-type: none"><li>• Ice/stim PRN</li></ul>	<ul style="list-style-type: none"><li>• Bike, elliptical, stair master</li><li>• Step ups/lateral step over's- progress to faster pace</li><li>• Single leg press</li><li>• Treadmill walking (forwards and backwards) starting</li><li>• Open chain wall slides,</li><li>• Unilateral step-ups</li><li>• Kettlebell deadlift</li><li>• SLS dynamic surfaces</li><li>• Advance strengthening as tolerated</li></ul>
<p><b>Phase 4 (18+ weeks)</b></p> <p>Goals:</p> <ul style="list-style-type: none"><li>• Introduce jumping/jogging</li></ul>		<ul style="list-style-type: none"><li>• Full A/PROM</li></ul>	<ul style="list-style-type: none"><li>• Continue everything in phase 3</li><li>• Initiate walk-jog progression to easy pace, add incline if tolerates</li><li>• Muscular power – squats, split jumps, sled drags</li><li>• Add plyometrics for speed and power after week 20</li><li>• Sport-related gym program activities</li></ul>