

## NON-OPERATIVE TREATMENT OF ACUTE GRADE III MEDIAL KNEE INJURIES

<p><b>Goals for all Phases</b></p>	<ul style="list-style-type: none"> <li>• Early, pain-free full range of motion of the knee.</li> <li>• Minimal loss of quadriceps strength.</li> <li>• Healing of injured ligament complex with little to no residual instability.</li> </ul>
<p><b>Phase 1: 1 to 2 weeks</b></p>	<p>Ice:</p> <ul style="list-style-type: none"> <li>• Ice knee as tolerated and as needed based on symptoms.</li> </ul> <p>Weight bearing:</p> <ul style="list-style-type: none"> <li>• Use crutches and apply touchdown to partial weight bearing and progress as tolerated.</li> <li>• Progress to 1 crutch (on opposite side), then discontinue crutches only when normal gait is possible.</li> </ul> <p>Brace:</p> <ul style="list-style-type: none"> <li>• Hinged knee brace set from 0° to 90° of knee flexion.</li> </ul> <p>Range of motion:</p> <ul style="list-style-type: none"> <li>• Emphasise full extension.</li> <li>• Progress flexion as tolerated.</li> </ul> <p>Therapeutic exercises:</p> <ul style="list-style-type: none"> <li>• Quadriceps sets: 30 repetitions, 10 times a day.</li> <li>• Straight leg raises. No weights. The knee must be held in full extension (no sag). If not, exercise is performed with brace locked in full extension.</li> <li>• Range-of-motion exercises as tolerated.</li> <li>• Sitting hip flexion, 10 sets of 10 repetitions daily.</li> <li>• Side lying hip abduction, 10 sets of 10 repetitions daily.</li> <li>• Standing hip extension, 10 sets of 10 repetitions daily.</li> <li>• Standing hamstring curls, as tolerated; if painful, discontinue.</li> <li>• Bike, as comfortable, 10 to 20 minutes, low resistance, start as soon as possible.</li> <li>• No limits on upper extremity workouts that do not affect the injured knee.</li> </ul>
<p><b>Phase 2: 3 to 4 weeks</b></p>	<p>Weight bearing:</p> <ul style="list-style-type: none"> <li>• As tolerated with hinged brace.</li> </ul> <p>Range of motion:</p> <ul style="list-style-type: none"> <li>• Full extension.</li> <li>• Progressive flexion as tolerated.</li> </ul> <p>Therapeutic exercises:</p> <ul style="list-style-type: none"> <li>• Progress above exercises as tolerated to 2 to 4 kgs.</li> <li>• Progress to 20 minutes of exercise biking daily; increase resistance as tolerated.</li> <li>• This is the key exercise to promote healing, rebuild strength, and maintain aerobic conditioning.</li> <li>• Progress to weight-room exercises.</li> <li>• Limit the injured knee's range of motion to between 0° and 90° of knee flexion when lifting weights (in the brace).</li> </ul>



	<ul style="list-style-type: none"> <li>• Hamstring curls.</li> <li>• Leg presses: double-leg press and single-leg press on injured side.</li> <li>• Progress isokinetics.</li> <li>• Step-ups.</li> </ul> <p>Precaution:</p> <ul style="list-style-type: none"> <li>• Examination by Dr Barrow is necessary at approximately 3 weeks to verify ligament healing.</li> </ul>
<b>Phase 3: 5 weeks</b>	<p>Weight bearing:</p> <ul style="list-style-type: none"> <li>• Gait in hinged knee brace through 6 weeks, as comfortable.</li> </ul> <p>Brace:</p> <ul style="list-style-type: none"> <li>• Gradually open full per quadriceps control.</li> <li>• Discontinue use when ambulating with full weight bearing and no gait deviation.</li> </ul> <p>Range of motion:</p> <ul style="list-style-type: none"> <li>• Full, symmetrical.</li> </ul> <p>Therapeutic exercises:</p> <ul style="list-style-type: none"> <li>• Continue at least 20 minutes of daily exercise bike program.</li> <li>• Resistance should be progressively increased at each session.</li> <li>• Progress to weight-room exercises.</li> <li>• Limit motion to 30° to 90° of knee flexion while performing leg presses, squats.</li> <li>• Hamstring curls.</li> <li>• Leg presses: double-leg press and single-leg press.</li> <li>• Progress isokinetics.</li> <li>• Step-ups.</li> <li>• Progress walk-to-run, as tolerated, once cleared by Dr Barrow.</li> <li>• Progress agilities from balanced to unilateral exercises (single-leg hop-scotch jumps).</li> </ul> <p>Precautions:</p> <ul style="list-style-type: none"> <li>• Verify healing by Dr Barrow at 5 to 6 weeks to progress to next level.</li> <li>• Verify with stress radiographs as needed.</li> </ul>
<b>Phase 4: 6 weeks</b>	<p>Brace:</p> <ul style="list-style-type: none"> <li>• Discontinue brace with gait, wear for contact sport for at least 3 months.</li> <li>• Protective use when out of home, hinged brace open per quadriceps control.</li> </ul> <p>Range of motion:</p> <ul style="list-style-type: none"> <li>• Full, symmetrical.</li> </ul> <p>Therapeutic exercises:</p> <ul style="list-style-type: none"> <li>• Continue daily exercise bike use through 12 weeks after injury (at least 20 minutes per day).</li> <li>• Progress sport-specific exercises.</li> </ul> <p>Precaution:</p> <ul style="list-style-type: none"> <li>• Return to competition once full motion and strength return and the patient passes a sport functional test and is cleared by the Physiotherapist.</li> </ul>

