



Green Bay • Fox Valley • Marinette

2223 Lime Kiln Road, Green Bay, WI 54311 • Phone: 920-430-8113 • Fax: 920-430-8124

[osmsgb.com](http://osmsgb.com)

## Non-Operative ACL Protocol

### PHASE I, (Acute Phase)

<b>Goals:</b>	<ul style="list-style-type: none"> <li>• Control pain and swelling</li> <li>• Restore pain free ROM</li> <li>• Improve flexibility</li> <li>• Normalize gait mechanics</li> <li>• Establish good quadriceps activation</li> </ul>
<b>Precautions:</b>	<ul style="list-style-type: none"> <li>• WBAT with crutches until demonstrates normal gait mechanics</li> <li>• Alert physician is patient reports episodes of knee buckling</li> </ul>
<b>Recommended Exercises:</b>	<ul style="list-style-type: none"> <li>• Range of Motion <ul style="list-style-type: none"> <li>○ Patella mobilization (medial/lateral, superior/inferior) 2 sets of 20 repetitions</li> <li>○ Belt stretch (calf/hamstring) Hold 30 seconds 3-5 repetitions</li> <li>○ Heel slides 2 sets of 20 repetitions</li> <li>○ Prone quad stretch hold 30 seconds 3-5 repetitions</li> <li>○ Cycle (minimal resistance) 10-15 minutes daily</li> <li>○ Quad sets 2-3 sets of 20 repetitions</li> </ul> </li> <li>• Strength <ul style="list-style-type: none"> <li>○ Add sets 2-3 sets of 20 repetitions</li> <li>○ SLR *(no Lag)* 2-3 sets of 10-20 repetitions</li> <li>○ Hip Abd/Add/Ext/ER (against gravity) 2-3 sets of 10-20 repetitions</li> <li>○ Body weight squats (partial range) 2-3 sets of 10-20 repetitions</li> <li>○ Standing TKE with Theraband/cable column 2-3 sets of 10-20 repetitions</li> <li>○ Standing or prone hamstring curls 2-3 sets of 10-20 repetitions</li> <li>○ Heel raises 2-3 sets of 10-20 repetitions</li> </ul> </li> </ul>
<b>Guidelines:</b>	<ul style="list-style-type: none"> <li>• Swelling and ROM deficits must be resolved before progressing to next phase. Use exercise bike daily if possible for 10-15 minutes. Perform ROM exercises 3-5 times a day. Perform strengthening exercises 1 time a day.</li> </ul>

### PHASE II, (Sub-Acute/Strengthening Phase)

<b>Goals:</b>	<ul style="list-style-type: none"> <li>• Avoid patellofemoral pain</li> <li>• Maintain ROM and flexibility</li> <li>• Restore muscle strength</li> <li>• Improve neuromuscular control</li> </ul>
<b>Precautions:</b>	<ul style="list-style-type: none"> <li>• D/C crutches if have not already</li> <li>• Alert physician if patient reports episodes of knee buckling</li> </ul>



Green Bay • Fox Valley • Marinette

2223 Lime Kiln Road, Green Bay, WI 54311 • Phone: 920-430-8113 • Fax: 920-430-8124

[osmsgb.com](http://osmsgb.com)

<b>Recommended Exercises:</b>	<ul style="list-style-type: none"> <li>• Range of Motion               <ul style="list-style-type: none"> <li>○ Continue ROM and initiate LE flexibility exercises</li> <li>○ Cycle/elliptical 10-15 minutes</li> <li>○ Continue open chain hip and knee strength from phase 1 progress with ankle weights</li> </ul> </li> <li>• Strengthening               <ul style="list-style-type: none"> <li>○ Hamstring strengthening (progress from standing curl, leg curl machine, to curl on pball, single leg dead lift) 2-3 sets of 15-20 repetitions</li> <li>○ Leg press (progress from double-limb to single limb) 2-3 sets of 15-20 repetitions</li> <li>○ Step-up progressions (forward and lateral) 2-3 sets of 15-20 repetitions</li> <li>○ BOSU, *sport specific if applicable</li> <li>○ Plank, side plank, single-limb bridge 2 sets of 30 seconds each (15 seconds each leg with bridge)</li> </ul> </li> <li>• Proprioception               <ul style="list-style-type: none"> <li>○ Static single-limb balance 3 sets of 30-60 seconds (progress eyes open to eyes closed with stance on foam pad)</li> </ul> </li> </ul>
<b>Guidelines</b>	<ul style="list-style-type: none"> <li>• Perform all ROM and flexibility exercises once a day. If possible, cycle daily. Perform strengthening exercises 3-5 times a week (frequency and volume programmed by PT)</li> </ul>

### PHASE III, (Limited Return to Activity Phase)

<b>Goals:</b>	<ul style="list-style-type: none"> <li>• Avoid patella femoral pain</li> <li>• Maintain ROM and flexibility</li> <li>• Progress with single leg strengthening to maximize strength</li> <li>• Progress dynamic proprioception exercises to maximize neuromuscular control</li> <li>• Initiate plyometrics and light jogging</li> <li>• Gradually begin return to sport activities pending physician's clearance</li> </ul>
<b>Precautions:</b>	<ul style="list-style-type: none"> <li>• Must avoid patella femoral stress</li> <li>• Caution pivoting and lateral movements</li> <li>• Alert physician if patient reports episodes of knee buckling</li> </ul>
<b>Recommended Exercises:</b>	<ul style="list-style-type: none"> <li>• Range of Motion and Flexibility               <ul style="list-style-type: none"> <li>○ Continue ROM and flexibility exercises as needed</li> </ul> </li> <li>• Cardio               <ul style="list-style-type: none"> <li>○ Cycle/elliptical/treadmill with progressive resistance</li> </ul> </li> <li>• Strengthening               <ul style="list-style-type: none"> <li>○ Continue progressing Phase 2 strengthening exercises</li> <li>○ Step-up progressions (increase height of step) 2-3 sets of 15-20 repetitions</li> <li>○ Single-limb dead lift 2-3 sets of 15-20 repetitions</li> </ul> </li> </ul>



Green Bay • Fox Valley • Marinette

2223 Lime Kiln Road, Green Bay, WI 54311 • Phone: 920-430-8113 • Fax: 920-430-8124

[osmsgb.com](http://osmsgb.com)

	<ul style="list-style-type: none"> <li>○ Static lung progressions (forward/backward/lateral) 2 sets of 50 feet</li> <li>• Proprioception               <ul style="list-style-type: none"> <li>○ Single-limb balance with perturbations 3 sets of 30-60 seconds (progress eyes open to eyes closed, foam, BOSU, *sport specific if applicable)</li> </ul> </li> <li>• Plyometrics               <ul style="list-style-type: none"> <li>○ Emphasize eccentric control, avoiding increased trunk flexion, dynamic genu valgum, and femoral internal rotation, must have appropriate strength to progress to plyometric program. Simple double-limb jumps</li> <li>○ Complex double-limb jumps</li> </ul> </li> </ul>
<b>Guidelines:</b>	<ul style="list-style-type: none"> <li>• Perform stretching program daily. Cardio exercise is recommended 3-5 times a week for 20-30 minutes. Perform strengthening/proprioception exercises 3 times a week. Perform plyometric/jumping exercises 2 times a week. Monitor increased swelling with plyometrics. Decrease intensity if swelling persists. Strict attention must be paid to form and to minimize patella femoral pain with exercises.</li> </ul>

#### PHASE IV, (Return to Activity/Sport Phase)

<b>Goals:</b>	<ul style="list-style-type: none"> <li>• Maintain adequate ROM, flexibility and strength</li> <li>• Continue progressive/dynamic strengthening, proprioceptive, plyometric and agility training</li> <li>• Achieve adequate strength to return to sport (pending physician's clearance)</li> </ul>
<b>Precautions:</b>	<ul style="list-style-type: none"> <li>• Limited and controlled lateral movements</li> <li>• Gradual return to sport pending physician's clearance</li> <li>• Work with physician and physical therapist to develop specific return to sport progression</li> </ul>
<b>Recommended Exercises:</b>	<ul style="list-style-type: none"> <li>• Stretching               <ul style="list-style-type: none"> <li>○ Continue daily lower extremity stretching</li> </ul> </li> <li>• Cardio               <ul style="list-style-type: none"> <li>○ Continue cardio program and progress intensity and duration</li> </ul> </li> <li>• Strengthening               <ul style="list-style-type: none"> <li>○ Continue strengthening program from phase 3 (increase load and decrease repetition)</li> <li>○ Progress from static to dynamic lunges</li> </ul> </li> <li>• Proprioception               <ul style="list-style-type: none"> <li>○ Continue advanced proprioceptive training (increase difficulty of drills)</li> </ul> </li> <li>• Plyometrics               <ul style="list-style-type: none"> <li>○ Emphasize eccentric control, avoiding increased trunk flexion, dynamic genu valgum and femoral internal rotation</li> </ul> </li> </ul>



Green Bay • Fox Valley • Marinette

2223 Lime Kiln Road, Green Bay, WI 54311 • Phone: 920-430-8113 • Fax: 920-430-8124

[osmsgb.com](http://osmsgb.com)

	<ul style="list-style-type: none"><li>○ Single-limb jumps</li><li>○ Combination double-limb jumps</li><li>○ Combination single-limb jumps</li><li>• Sport Specific Drills<ul style="list-style-type: none"><li>○ Initiate sports specific drills</li><li>○ Begin speed/agility program</li></ul></li></ul>
<b>Guidelines:</b>	<ul style="list-style-type: none"><li>• Perform stretching program daily. Cardio program is recommended 3-5 times a week for 20-40 minutes. Perform strengthening/proprioception exercises 3 times a week. Perform plyometric/jumping/agility exercises 2 times a week. Perform return to sport activities as directed.</li></ul>