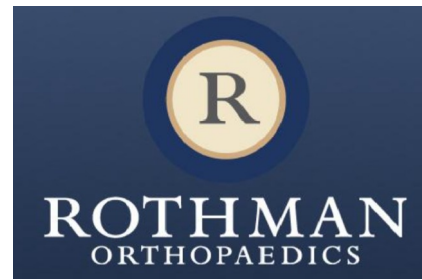


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Medial Patellofemoral Ligament Reconstruction Physical Therapy Protocol

Patient Name: _____ Date: _____

Surgery: s/p MPFL Reconstruction

Date of Surgery: _____

Frequency: 1 2 3 4 times/week Duration: 1 2 3 4 5 6 Weeks

POST-OPERATIVE PHASE I - PROTECTION (WEEKS 0-6)

Critical Aspects of this Phase:

Ambulation w/ brace locked in extension, improve quad contraction, control pain/effusion, compliance w/ icing, CPM, and quad reactivation

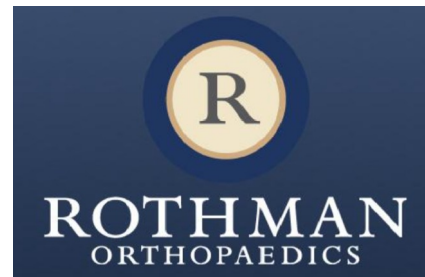
Goals:

- ❖ ROM: 0° - 90° (can go slightly more if tolerating well)
- ❖ Weightbearing:
 - Progressive weight bearing to WBAT with brace locked in extension
 - Ok to use assist device to help normalize gait and minimize knee swelling
- ❖ Control post-operative pain / swelling
- ❖ Prevent quadriceps inhibition
 - Ok to use stim
- ❖ Promote independence in home therapeutic exercise program

← **Treatment Recommendations:**

- ❖ Emphasize patient compliance with Home Exercise Program (HEP)
 - WBAT with knee locked in extension and appropriate assist devices
 - Cryotherapy (home unit)
 - Continuous **Passive Motion** (CPM) 2-3 hours/day; increase to 6-8 hours/day w/ cartilage procedure
 - Electrical stimulation for quadriceps re-education; quad sets w/ towel under knee

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- ❖ Sitting knee ROM exercise (AAROM for knee extension, PROM for knee flexion)
- ❖ Distal strengthening
- ❖ Quad sets w/ towel roll under knee
- ❖ Hip progressive resistance exercise, pain free SLR (use brace if lag is present)
- ❖ Work on flexibility of hamstrings and gastrocnemius (band stretches)

Precautions:

- ❖ Avoid ambulation without the brace
- ❖ Avoid lateralization of the kneecap
- ❖ Avoid symptom provocation as this can lead to an effusion and quad shut down

← **Minimum Criteria for Advancement to Next Phase:**

- ❖ Good quad contraction
- ❖ Good medial patellar mobility
- ❖ ROM: 0° to at least 90°
- ❖ No pain at rest
- ❖ Able to demonstrate unilateral (involved extremity) weightbearing without pain
- ❖ Able to SLR pain free and without a lag

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POST-OPERATIVE PHASE II - GAIT (WEEKS 7-10)

Critical Aspects of this Phase

Symptom control w/ ADLs, Normalize gait, Minimize effusion, Postural stability

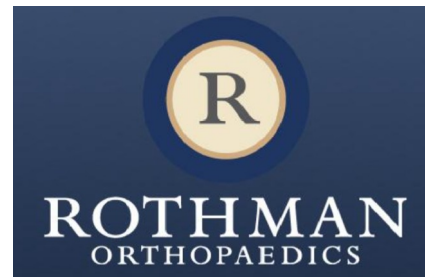
Goals:

- ❖ ROM: 0-110° at 8 weeks, 0-125° at 10 weeks, progressing to full ROM
- ❖ Continue to work on patella mobility and quad contraction
- ❖ Minimal swelling
- ❖ Restore normal gait with assist device and progress to no assist device
 - Patient should have a non-antalgic gait before stopping assist device
- ❖ Postural stability, alignment, and neuromuscular control in single limb stance
- ❖ Promote independence in home therapeutic exercise program

← **Treatment Recommendations:**

- ❖ Continue phase I exercises as appropriate, continue HEP
- ❖ Patellar mobilization
- ❖ Gait training: heel to toe with brace unlocked to 90°, or with functional brace and assist device (with good quad control [SLR without a lag, able to achieve full knee extension]). Low grade elevation or retro-walking to promote neuromuscular control with knee flexion during loading response. Hydrotherapy if available
- ❖ Bicycle progression from short crank to standard crank as ROM permits (115° knee flexion in sitting, 80 RPMs)
- ❖ Quad strengthening, progress pain free ROM (closed chain)
 - Continue w/ E-stim, biofeedback, quad sets, sub-maximal multi-angle isometrics
 - Leg press: monitor arc of motion (bilateral, eccentric)
 - Initiate forward step up (FSU) progression 6" step w/ adequate strength
- ❖ Flexibility exercises – based on evaluation (AROM knee flexion w/ hip extension in standing)
- ❖ Advance proximal and core strengthening (side planks, bridge)
- ❖ Hydrotherapy for gait, single limb alignment and stability, proximal strengthening

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- ❖ Initiate balance and proprioceptive training, double limb support on progressively challenging surfaces to single limb support on flat surface only once patient demonstrates good alignment and stability with neuromuscular control
- ❖ Progress/advance patients home exercise program (evaluation based)

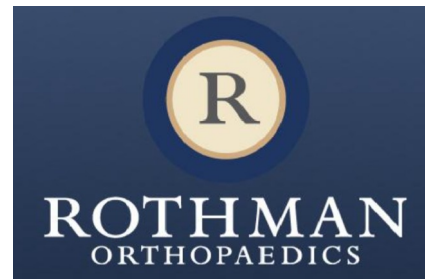
Precautions:

- ❖ Avoid pathologic gait pattern (stiff knee, bent knee, quad avoidance)
- ❖ Avoid lateralization of the kneecap
- ❖ Avoid symptom provocation as this can lead to an effusion and quad shut down

← **Minimum Criteria for Advancement to Next Phase:**

- ❖ ROM 0→115°
- ❖ Normal gait pattern
- ❖ Good patella mobility
- ❖ Postural stability, alignment, and neuromuscular control in single limb stance
- ❖ No pain w/ ADL and therapeutic exercises
- ❖ Independent HEP

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POST – OPERATIVE PHASE III – STRENGTHENING (WEEKS 11-18)

Critical Aspects of this Phase

Normal gait, Identify and correct muscle/tissue imbalance, Neuromuscular control, Quality of movement, Functional progression

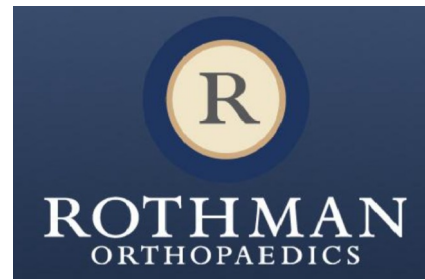
Goals:

- ❖ Restore full ROM
- ❖ Pain free knee with no effusion
- ❖ Normalize gait on level surfaces and stairs
- ❖ Correct any imbalances
- ❖ Core stability: single leg bridge = 30s; Sahrman > level 3
- ❖ Initiate running program, plyometrics
- ❖ Symmetry, quality, alignment during selected movement patterns: squat, jump in place

← **Treatment Recommendations:**

- ❖ Progress quad strengthening as tolerated (closed chain)
 - Progress forward step up to 8”
 - Begin forward step down at 6” and progress to 8”
 - Squat progression: chair squats (assisted with ball if necessary) to free squats
- ❖ ROM exercises
 - AAROM w/ knee extension to AAROM w/ knee flexion in sitting, to supine wall slides, to stair stretch
- ❖ Continue to advance proximal (bridge progression, hip extension w/ knee flexion, clock, windmill, lawn mower), and core (planks, Sahrman) strengthening
- ❖ Progress balance w/ postural alignment and neuromuscular control (static to dynamic, introduce different planes of motion, challenging surfaces)
- ❖ Cross training elliptical initiated w/ good strength/quality of 6” step up, bicycle (80 RPMs), swimming (crawl, back stroke)
- ❖ Begin running progression once patient has good eccentric quad control w/ 8” step up

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- Begin w/ 30 second intervals

- ❖ Begin plyometric program once patient has good quad control

- Begin w/ jump up and progress to jump in place

- ❖ Emphasize patient compliance to both home and gym exercise program

Precautions:

- ❖ Don't overdo it too quickly and ensure patient's gait has normalized

- ❖ Avoid symptom provocation

- ❖ Be careful not to disregard the quality of movement

- ← **Minimum Criteria for Advancement to Next Phase:**

- ❖ Normal ROM, no pain/swelling, normal gait

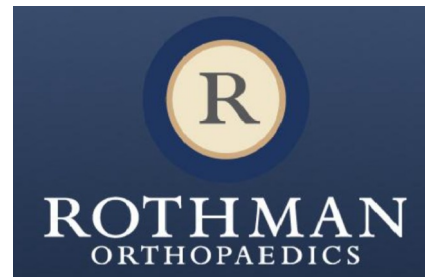
- ❖ Ability to demonstrate alignment, control, stability in single leg stance during dynamic activities

- ❖ Core stability: single leg bridge = 30s; Sahrmann > level 3

- ❖ Able to ascend/descend 6"/8" step w/ good control and alignment

- ❖ Functional progression pending functional assessment

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POST – OPERATIVE PHASE IV – ADVANCED STRENGTHENING AND FUNCTION (WEEKS 19-24)

Goals:

- ❖ No pain or instability w/ sport specific activities/movements
- ❖ Maximize strength and flexibility to meet demands of sports
- ❖ Demonstrate strategy, symmetry, quality, control and alignment during selected movements (squat, jump (vertical and horizontal), single leg squat)
- ❖ Maximize strength and flexibility as to meet demands of ADLS
- ❖ Cardiovascular endurance to meet demands of sport
- ❖ Hop Test > 75% limb symmetry

← **Treatment Recommendations:**

- ❖ Advance lower extremity strengthening, flexibility, and agility (single and double leg)
- ❖ Correct any muscle imbalances
- ❖ Advance core stability
- ❖ Cross training
- ❖ Advance plyometric program with evidence of good quad control
 - Vertical jump progression (jump down)
 - Horizontal jump progression (broad jump, single leg landings)
 - Progress running program
 - Cutting, deceleration, change of direction, and dynamic single limb stability

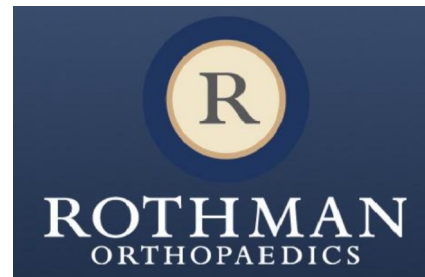
Precautions:

- ❖ Avoid pain with therapeutic exercise & functional activities
- ❖ Avoid inadequate strength, ROM, stability, fitness, and flexibility when RTS

← **Minimum Criteria for Advancement to Next Phase:**

- ❖ Has excellent symmetry, quality, and alignment during sporting activity movements
- ❖ No apprehension w/ sport specific movements, 85% limb symmetry index (LSI)

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POST – OPERATIVE PHASE V – RETURN TO PLAY (WEEKS 25-30)

Goals:

- ❖ No pain or apprehension w/ sport specific activities/movements
- ❖ Maximize strength and flexibility to meet demands of sports
- ❖ Demonstrate excellent ability to decelerate under control
- ❖ Cardiovascular endurance to meet demands of sport
- ❖ Hop Test > 85% limb symmetry

← **Treatment Recommendations:**

- ❖ Advance cutting and deceleration training
- ❖ Advance plyometric program with evidence of good quad control
 - Horizontal jumping progression: Broad jump to hop to opposite to single leg hop

Precautions:

- ❖ Avoid pain with therapeutic exercise & functional activities
- ❖ Avoid inadequate strength, ROM, stability, fitness, and flexibility when RTS

← **Minimum Criteria for Discharge:**

- ❖ Ability to decelerate with good control and alignment on single limb
- ❖ Has excellent symmetry, quality, and alignment during sporting activity movements
- ❖ No apprehension w/ sport specific movements, 85% limb symmetry index (LSI)
- ❖ Independence w/ gym program for maintenance and progression of program
- ❖ Has quality movements with sport specific activity
- ❖ Hop Test > 85% limb symmetry