



REHABILITATION GUIDELINES

MEDIAL PATELLOFEMORAL LIGAMENT RECONSTRUCTION

Edward S. Chang, MD
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CLINICAL NURSE

Eileen Perri, BSN
(703) 797-6918

The intent of this protocol is to provide the therapist with guidelines of the post-operative rehabilitation course after an MPFL Reconstruction. It should not be a substitute for one's clinical decision making regarding the progression of a patient's post-operative course based on their physical exam findings, individual progress, and/or the presence of post-operative complications. The therapist should consult the referring physician with any questions or concerns.

INDIVIDUAL CONSIDERATIONS:

PHASE I (0-4 weeks)

Goals

- Control inflammation and pain
- Protect soft tissue and tubercle fixation
- Full active extension and 90 degrees of flexion
- Achieve quadriceps control

Brace

- Locked in extension for 4 weeks during ambulation
- Discontinue for sleep
- May remove for exercises except straight leg raises

Weight-Bearing Status

- Weight-bearing as tolerated with crutches and brace locked in extension

Therapeutic Exercises

- Straight leg raises in all planes (use brace locked in extension for SLRs)
- Heel slides to 90 degrees, calf pumps, quadriceps sets
- Electrical stimulation and biofeedback to regain quad function
- Patellar mobilization
- Ankle ROM and resistive exercises with sports tubing (Theraband)



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PHASE II (4- 8 weeks)

Criteria

- Good quad set, straight leg raise without extension lag
- 90 degrees of knee flexion
- Full extension

Goals

- Increase ROM
- Establish normal gait with unlocked brace

Brace/Weight-bearing status

- Continue with full weight bearing
- Use crutches and unlock brace for ambulation
- May discontinue crutches and brace when normal gait pattern and quad control is achieved

Therapeutic Exercises

- Increase ROM
- Progress to SLRs without brace
- Mini-squats (0-45 degrees)
- Stationary Bike (high seat, low tension)
- Closed chain extension (leg press:0-45 degrees)
- Pool walking/jogging
- Toe raises
- Hamstring and gastroc/soleus stretches
- Proprioception
 - Mini-tramp standing
 - Stable and unstable platform (BAPS) with eyes open and closed
 - Standing ball throwing and catching

PHASE III (8-12 weeks)

Criteria

- Normal gait
- Full range of motion
- Sufficient strength and proprioception to initiate functional activities

Goals

- Improve confidence in the knee
- Protect the patellofemoral joint
- Progress with strength, power, and proprioception

Brace/Weight-Bearing Status

- Discontinue brace and crutches



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Therapeutic Exercise

- Continue with flexibility exercises
- Hamstring curls
- Mini-squats and leg press to 60 degrees
- StairMaster, elliptical trainer, cross-country ski machine, lap swimming
- Stationary bike, increase resistance
- Step-up, start 2 inches and increase to 8 inches
- Continue to work on proprioception and balance (lateral slide board, ball throwing and catching on unstable surface)
- Treadmill walking

PHASE IV (3 months+)

Criteria

- Full, pain-free range of motion
- No patellofemoral irritation
- Sufficient strength and proprioception to progress to recreational activities

Goals

- Return to unrestricted activity by 5-6 months

Therapeutic Exercises

- Progress with flexibility and strengthening program
- Advance with closed chain exercises
- Begin pool jogging and progress to running on land at 4 months (See below)
- Begin Agility and Plyometric program (Month 5)
- Sports specific drills (start a 25% on speed and advance as tolerated)

Criteria for Return to Sports

- Full range of motion
- No effusion
- Quad and hamstring strength 90% of contralateral side
- No patellofemoral symptoms



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RETURN TO RUNNING PROGRAM

PHASE I – Warm Up Walk 15 Minutes, Cool Down Walk 10 Minutes

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Day	1	2	3	4	5	6	7
Week 1	W5/J1x5*		W5/J1x5		W4/J2x5		W4/J2x5
Week 2		W3/J3x5		W3/J3x5		W2/J4x5	
Week 3	W2/J4x5		W1/J5x5		W1/J5x5		Return to Run

Key: W=walk, J=jog

*W5/J1x5= Walk (5 minutes), Jog (1 minute); repeat 5 times

PHASE II – Warm Up Walk 15 Minutes, Cool Down Walk 10 Minutes

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Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	20 min		20 min		20 min		25 min
2		25 min		25 min		30 min	
3	30 min		30 min		35 min		35 min
4		35 min		40 min		40 min	
5	40 min		45 min		45 min		45 min
6		50 min		50 min		50 min	
7	55 min		55 min		55 min		60 min
8		60 min		60 min			

- Recommendations:
 - Runs should occur on softer surfaces during Phase 1
 - Non-impact activity on off days
 - Goal is to increase mileage and then increase pace; avoid increasing two variables at once



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- 10% rule: no more than 10% increase in mileage per week

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AGILITY AND PLYOMETRICS PROGRAM

This program is designed as a guide for clinicians and patients through a progressive return-to-run program. Patients should demonstrate > 80% on a Functional Assessment and started a running program prior to initiating this program (after lower extremity surgery).

PHASE I: ANTERIOR PROGRESSION

Goals:

- Safely recondition the knee
- Provide a logical sequence of progressive drills for pre-sports conditioning

Agility:

- Forward run
- Backward run
- Forward lean in to a run
- Forward run with 3-step deceleration
- Figure 8 run
- Circle run
- Ladder

Plyometrics:

- Shuttle press: Double leg → alternating leg → single leg jumps
- Double leg:
 - Jumps on to a box → jump off of a box → jumps on/off box
 - Forward jumps, forward jump to broad jump
 - Tuck jumps
 - Backward/forward hops over line/cone
- Single leg (these exercises are challenging and should be considered for more advanced athletes):
 - Progressive single leg jump tasks
 - Bounding run
 - Scissor jumps
 - Backward/forward hops over line/cone

Criteria to Progress:

- No increase in pain or swelling
- Pain-free during loading activities
- Demonstrates proper movement patterns



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PHASE II: LATERAL PROGRESSION

Goals:

- Safely recondition the knee
- Provide a logical sequence of progressive drills for the Level 1 sport athlete

Agility (*Continue with Phase 1 interventions):

- Side shuffle
- Carioca
- Crossover steps
- Shuttle run
- Zig-zag run
- Ladder

Plyometrics:

- Double leg:
 - Lateral jumps over line/cone
 - Lateral tuck jumps over cone
- Single leg (these exercises are challenging and should be considered for the more advanced athletes):
 - Lateral jumps over line/cone
 - Lateral jumps with sport cord

Criteria to Progress:

- No increase in pain or swelling
- Pain-free during loading activities
- Demonstrates proper movement patterns

PHASE III: MULTI-PLANAR PROGRESSION

Goals:

- Challenge athlete in preparation for final clearance for return to sport

Agility:

- Box drill
- Star drill
- Side shuffle with hurdles

Plyometrics:

- Box jumps with quick change of direction
- 90 and 180 degree jumps

Criteria to Progress:

- Clearance from MD
- Functional Assessment
 - $\geq 90\%$ contralateral side
- Return to Sport Index