

MPFL Reconstruction without tibial tuberosity transfer

Patient _____

Date _____

Involved side ☐ L ☐ R**MPFL Treatment Guidelines · PHASE I (Weeks 0–2 Post-Op)**

Clinic/Gym Exercise Program · 2–3 x per week

With tibial tuberosity transfer, there is typically a period of non weightbearing and strengthening restriction. Discuss specific restrictions of more involved procedures with the surgeon. Rehab timeframe will change.

PLEASE NOTE

This document provides guidelines for a typical rehab and does not replace good clinical judgment.

If you are an outside therapist and have questions, please contact us: CompRehab Plaza Sports/Outpatient PT (336) 716-8110.

Goals

- Emphasis on full knee extension
- Good quadriceps contraction

Active range of motion — knee flexion

Post-op week 1	30 deg
Post-op week 2	60 deg
Post-op week 3	90 deg
Post-op week 6	120 deg
Post-op week 10–12	Full

Education

No passive stretching	AROM for flexion. May try some light active assist after week 1
Weight bearing	Avoid pivoting, excessive WB. Use of crutches initially.
Brace locked in extension	At rest: may unlock at 2 weeks, comfortable ROM. Gait: locked at 0 deg.
Sleep	Brace locked x2 weeks, may discontinue brace for sleep at 3 weeks

Strength training

Quad Sets	Use biofeedback and/or NMES (Neuromuscular Electrical Stimulation)
Terminal Knee Extension	Focus on regaining good terminal knee extension. WB and NWB. Quad Sets. Prone quad sets. Standing TKE.
Proximal Strengthening	For example: sidelying/supine hip abd/add, prone hip ext, isometrics
Glute Sets	
Hip Adductor Isometrics	No medial knee pain
Straight Leg Raise	Assisted at first. Do not start until able to perform good quad set. May modify position (ie standing/sitting). NO lag!
Ankle	Theraband exercises — NO knee pain
Standing Weight Shifts	Side/Side, Frwd/Back. Partial weight shift, progressive.

Manual therapy

Patellar mobilizations	As needed (NO lateral glides)
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Stretching / ROM

Heel Slides	Active, Active Assisted
Gastroc stretch with towel	
Sitting Hamstring stretch	

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Clinic/Gym Exercise Program — PHASE II

Weeks 2–4 Post-Op · 2–3 x per week

Goals

- Full passive knee extension
- Decrease swelling
- Good Straight Leg Raises (no quad lag)
- Walk without brace or crutches
- Good weight bearing control of the knee with Single leg balance, CKC exercises (4in frwd step-ups)

Warm up

Bike	May begin week 3/4, start with rocking, within ROM restrictions
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Proprioception / balance

Double and Single Leg Balance	Avoid hyperextension. Avoid trunk/pelvis/LE compensations. Quads engaged. Static and Dynamic. Start with flat, level ground. Progress difficulty.
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Gait training

Look for phases of gait	Good heel strike, loading, push-off, etc. Progress away from A.D. Full terminal knee extension without hyperextension
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Strength training

Regain full active TKE	Quad Sets w/ heel towel roll, SAQ, Stand TKE, prone quad sets, etc.
MINI Squats	Shallow depth, start 0–30deg. Facilitate equal and symmetrical weight bearing, good mechanics. Focus on good quad control. Utilize mirror and cues.
Step Exercises	Avoid compensations (trunk/pelvis/LE), emphasize good use of quads. No more than 2–4 inches initially. Forward Step-Ups, Lateral Step-Ups
Straight Leg Raises	Start AAROM and/or with NMES to quad, unassisted as able, NO lag
Proximal Strengthening	Sidelying/supine hip abd/add, prone hip ext, isometrics. Bridges with knees extended, feet up on couch/ball
Leg Press	Single Leg, Start 0–30deg. Lighter weight, Higher reps.
Seated Leg Curls	Within ROM restrictions
Prone Active Knee Flexion	Pain-free ROM, within ROM restriction
B Heel Raises	
Core Stabilization	

Manual therapy

Patellar / soft tissue	Patellar mobilization, soft tissue mobilization (include quadriceps, peripatellar fascia restrictions)
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Stretching / ROM

Knee Flexion / Heel Slides	AROM, AAROM
Calf Stretch. Others as needed	

MPFL Reconstruction without tibial tuberosity transfer**Clinic/Gym Exercise Program — PHASE III**

Weeks 5–6 Post-Op · 2 x per week

Goals

- Normalize gait
- Perform 6in step-ups with good control, minimal to no pain
- Show good progression with dynamic CKC (Closed Kinetic Chain) exercises

Warm up

Bike	May progress to Elliptical, walking on Treadmill as able
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Proprioception / balance

Double and Single Leg Balance	Avoid hyperextension, trunk/pelvis/LE compensations. Quads engaged. Static and Dynamic. Progress difficulty. Incorporate into CKC exercises. BOSU, Rocker Board, other proprioception devices
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Gait training

Focus on normalizing gait	Focus on Terminal Knee Extension, use of ROM, proprioception motor pattern
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Strength training

Good use of knee extension	Quad Sets w/ heel towel roll, SAQ, Stand TKE, prone quad sets, etc. Incorporate into other exercises
Squats	Progressive depth, avoid deep squatting. Facilitate equal and symmetrical weight bearing, good mechanics. BOSU, Rocker Board
Step Exercises	Avoid compensations (trunk/pelvis/LE), emphasize good use of quads. Progressive height. Forward Step-Ups, Lateral Step-Ups
Mini Lunges	Good pelvis control, knee posterior to toes, start 30deg
Proximal Strengthening	Continue previous, incorporate into functional CKC exercises. Bridges with knees flexed. Sidestepping with theraband. Others.
Leg Press	Single Leg, < 90deg, no patellofemoral pain
Long Arc Quads	Active; start with no resistance, pain-free ROM
Hamstring Strengthening	
Heel Raises	
Core Stabilization	

Manual therapy

Patellar / soft tissue	Patellar mobs, soft tissue mobilization (include quadriceps, peripatellar fascia restrictions)
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Stretching / ROM

Continue to progress knee flexion, maintain good use of knee extension
Others as needed

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Clinic/Gym Exercise Program — PHASE IV

Weeks 7–12 Post-Op · 2 x per week

Goals

- Able to perform sit to stand from standard chair (18in) without pain or compensation
- Perform 15 8in forward step-ups without pain or compensation
- Perform 15 4in step downs with heel tap control
- Hold dynamic single leg stance ≥ 30 sec

Warm up

Bike, Elliptical. Treadmill walking	Forward, Retro. At week 10–12 may consider Stairmaster.
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Proprioception / balance

Continue	Incorporate into functional strengthening exercises. May incorporate sport/activity specific elements.
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Strength training

Squats	Progressive depth, work toward 60–90deg squats.
Step Exercises	Avoid compensations (trunk/pelvis/LE), emphasize good use of quads. Frwd Step-Ups, Lateral Step-Ups, Step Downs, Resisted Step-Ups
Lunges	Good pelvis control, knee posterior to toes, avoid deep lunges
Leg Press	Single Leg, < 90deg, no patellofemoral pain. Progressive weight, Fewer reps. May consider eccentrics week 10–12.
Leg Extension	Resisted, OKC. Start 90–40deg. NO patellofemoral pain.
Hamstring strengthening	
Heel Raises	
Core Stabilization	
Assisted Hopping	Consider starting week 10–12; 0–1 cord (ie Shuttle Machine)
Others as needed	

Manual therapy

Patellar / soft tissue	Patellar mobs, soft tissue mobilization (include quadriceps, peripatellar fascia restrictions)
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Stretching / ROM

Quads, Hamstrings, Calves, Adductors

* A strong emphasis should be placed on quad control and looking for quad avoidance.

* Work on technique and avoiding trunk/pelvis/LE compensations.

* Caution with quadriceps strengthening and watch for anterior knee pain.

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Clinic/Gym Exercise Program — PHASE V

Months 4–6 Post-Op · 1–2 x per week, taper as indicated

Goals

- Perform 90deg squat with good biomechanics, no pain
- Descend a flight of stairs with reciprocal pattern, with good control, with minimal to no pain
- < 15% deficit with single leg hop testing for distance and/or time
- Perform sport/activity specific drills with good LE mechanics, good control, minimal to no pain

Warm up

Bike, Elliptical, Stairmaster

Proprioception / balance

Continue

Incorporate into functional strengthening exercises. Incorporate sport/activity specific elements.

Strength training

Progressive strengthening

Core Stabilization

Incorporate into functional exercises

Shuttle Hopping

Isokinetic Knee Training

If available. Be aware of patellofemoral symptoms. Goal: <15% deficit vs. contralateral knee

Sport specific exercise

Hopping Drills

Jogging/Running

Agility Drills

Return to Sport Progression

Stretching / ROM

Quads, Hamstrings, Calves, Adductors

* Work on technique and avoiding trunk/pelvis/LE compensations.

* Caution with quadriceps strengthening and watch for anterior knee pain.