

REHAB PROTOCOL: MPFL RECONSTRUCTION WITHOUT TTO/AMZ

I. Immediate Postoperative Phase (Day 0-7)

Brace: Bledsoe brace locked in extension for 2 weeks

Weight bearing: Two crutch weight bearing as tolerated

Exercises: Ankle pumps

Ice and Elevation: Ice 24/7 for the first week and elevate leg with knee in full extension as much as possible

II. Early Motion Phase (Week 1-4)

1st Post op appointment within 1 week of surgery

Goals:

- Start immediate range of motion to 90 degrees flexion
- Full passive knee extension
- Diminish swelling and pain
- Quadriceps activation (straight leg raises, quad set)
- Electrical stimulation
- Exercise bike

Brace: Bledsoe brace locked in extension or 30 degree flexion stop. May transition into lateral stabilization brace at 3 weeks when quadriceps activation is appropriate.

Weight bearing: Without crutches as tolerated with brace on at all times.

Range of motion: Self-ROM (4-5 times daily using the other leg to provide ROM), emphasis on maintaining zero degrees passive extension
- PROM 0-90 degrees until 4th week

III. PROGRESSIVE STRENGTHENING/NEUROMUSCULAR CONTROL PHASE (Week 4-14)

2nd post op appointment 4 weeks after surgery

- X-rays

Week 4:

Goals: Start strengthening as soon as tolerated
Gait training
Hip strengthening
Single leg squats

Exercises:

- Progress isometric strengthening program
- Leg Press (0-100 degrees)
- Knee extension 90 to 40 degrees
- Hip Abduction and Adduction
- Hip Flexion and Extension
- Wall Squats
- Vertical Squats
- Standing Toe Calf Raises
- Seated Toe Calf Raises
- Biodex Stability System (Balance, Squats, etc)

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Bicycle
Stair Stepper Machine
Pool Program (Backward Running, Hip and Leg Exercises)

Week 6

Exercises:

Continue all exercises
Pool running (forward) and agility drills
Balance on tilt boards
Progress to balance and ball throws
Wall slides/squats

3rd post op appointment 8 weeks post op

- Kujala score

Week 8

Exercises:

Continue all exercises listed in Weeks 4-6
Leg Press Sets (single leg) 0-100 degrees and 40-100 degrees
Plyometric Leg Press
Perturbation Training
Isokinetic exercises (90 to 40 degrees) (120 to 240 degrees/second)
Walking Program
Bicycle for endurance
Stair Stepper Machine for endurance
Biodex stability system
Training on tilt board

Week 10

Isokinetic Test – Concentric Knee Extension/Flexion at 180 and 300 degrees/second

Exercises:

Continue all exercises listed in Weeks 6, 8 and 10
Continue Stretching Drills
Progress strengthening exercises and neuromuscular training

IV. ADVANCED ACTIVITY PHASE (Week 10-16)

Criteria to Enter Phase IV

- 1) AROM 0-125 degrees or greater
- 2) Quad strength 75% of contralateral side, knee extension flexor: extensor ratio 70% to 75%
- 3) No pain or effusion
- 4) Satisfactory clinical exam by Dr. Coyner
- 5) Satisfactory isokinetic test (values at 180 degrees)
 - Quadriceps bilateral comparison 75%

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- Hamstrings equal bilateral
 - Quadriceps peak torque/body weight 65% at 180°/s (males) 55% at 180°/s (females)
 - Hamstrings/quadriceps ratio 66% to 75%
- 6) Subjective knee scoring (modified Noyes System) 80 points or better

Goals: Normalize lower extremity strength
Enhance muscular power and endurance
Improve neuromuscular control
Perform selected sport-specific drills

- Exercises:
- *May initiate running program (weeks 10-12) (Physician Decision) with brace
 - *May initiate light sport program (golf) (Physician Decision) with brace
 - *Continue all strengthening drills
 - Leg press
 - Wall squats
 - Hip Abd/Adduction
 - Hip Flex/Ext
 - Knee Extension 90-40
 - Hamstring curls
 - Standing toe calf
 - Seated toe calf
 - Step down
 - Lateral step ups
 - Lateral lunges
 - Plyometric leg press
 - *Neuromuscular training
 - Lateral step-overs cones
 - Lateral lunges
 - Tilt board drills

Week 14-16

Progress program
Continue all drills above
May initiate lateral agility drills
Backward running

V. RETURN TO ACTIVITY PHASE (Month 16-22)

Criteria to Enter Phase V

- 1) Full Range of Motion
- 2) Isokinetic Test that fulfills criteria
- 3) Quadriceps bilateral comparison (80% or greater)
- 4) Hamstring bilateral comparison (110% or greater)
- 5) Quadriceps torque/body weight ratio (55% or greater)
- 6) Hamstrings/Quadriceps ratio (70% or greater)
- 7) Proprioceptive Test (100% of contralateral leg)
- 8) Functional Test (85% or greater of contralateral side)

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- 9) Satisfactory clinical exam
- 10) Subjective knee scoring (modified Noyes System) (90 points or better)

Goals: Gradual return to full-unrestricted sports
Achieve maximal strength and endurance
Normalize neuromuscular control
Progress skill training

Tests – KT 2000, Isokinetic, and Functional Tests before return

Exercises

- *Continue strengthening exercises
- *Continue neuromuscular control drills
- *Continue plyometrics drills
- *Progress running and agility program
- *Progress sport specific training
 - Running/cutting/agility drills
 - Gradual return to sport drills

6 Month Follow Up

X-ray
Kujala core and girth measurements

1 Year follow up

X-ray
Kujala core and girth measurements