



REHAB PROTOCOL FOR MPFL REPAIR

PHASE I (surgery to 6 weeks after surgery)

Appointments	<ul style="list-style-type: none"> Rehabilitation appointments begin 10 to 14 days after surgery and continue 1 to 2 times per week
Rehabilitation Goals	<ul style="list-style-type: none"> Protection of the post-surgical knee Restore normal knee range of motion Normalize gait Eliminate effusion (swelling) Restore leg control
Precautions	<ul style="list-style-type: none"> Brace locked in extension for gait and activities of daily living Use axillary crutches for gait as needed with brace on Weight-bearing as tolerated with ROM brace locked in extension Range of motion limitations as stated below Brace settings: <ul style="list-style-type: none"> Week 1-2: 0-30 degrees Week 3-4: 0-60 degrees Week 5-6: 0-90 degrees
Suggested Therapeutic Exercise	<ul style="list-style-type: none"> Quadriceps sets Four-way leg lifts with brace on in supine for hip strengthening Ankle pumps Ankle isotonic with exercise band Reactive neuromuscular training (RNT) Proprioception Patella mobilization (no lateral glides) Scar massage, soft tissue mobilization Cryotherapy E-Stim
Cardiovascular Exercise	<ul style="list-style-type: none"> Upper body circuit training or use of an upper body ergometer
Progression Criteria	<ul style="list-style-type: none"> 6 weeks after surgery

PHASE II (6 weeks after surgery, when Phase I criteria met)

Appointments	<ul style="list-style-type: none"> • Rehabilitation appointments are 1 to 2 times per week
Rehabilitation Goals	<ul style="list-style-type: none"> • Single leg stand control • Good control and no pain with short arc functional movements, including steps and partial squats • Good quad control
Precautions	<ul style="list-style-type: none"> • Use of lateral buttress knee sleeve if directed by physician or physical therapist • Avoid over-stressing fixation: begin movement control and gentle strengthening with closed chain movements in a shallow arc of motion and by using un-weighting techniques (such as the pool or double leg support) • Avoid post-activity swelling
Suggested Therapeutic Exercise	<ul style="list-style-type: none"> • Gait drills (begin with pool) • Functional single plane closed chain movements (begin with pool) • Continued gradual progression of range of motion • Gradual progress of lower extremity strengthening with precautions to avoid dynamic valgus or medial knee displacement • Balance and proprioception exercises • Modalities as needed
Cardiovascular Exercise	<ul style="list-style-type: none"> • Upper body circuit training or upper body ergometer
Progression Criteria	<ul style="list-style-type: none"> • Normal gait on level surfaces • Good leg control without extensor lag, pain or apprehension • Single leg balance greater than 15 seconds • At least 12 weeks after surgery

PHASE III (12-14 weeks after surgery, when Phase II criteria met)

Appointments	<ul style="list-style-type: none"> • Rehabilitation appointments are once every 1 to 2 weeks
Rehabilitation Goals	<ul style="list-style-type: none"> • Full range of motion • No effusion (swelling) • Improve quadriceps strength • Improve proximal hip and core strength • Improve balance and proprioception
Precautions	<ul style="list-style-type: none"> • Avoid closed chain exercises on land past 90° of knee flexion to avoid overstressing the repaired tissues and increased patellofemoral forces • Avoid post-activity swelling
Suggested Therapeutic Exercise	<ul style="list-style-type: none"> • Continue range of motion exercises and stationary bike • Closed chain strengthening begin with single plane progress to multi-plane • Single leg press • Balance and proprioception exercises: single leg stand, balance board • Hip and core strengthening • Stretching for patient specific muscle imbalances • Initiate low amplitude agility drill in the sagittal plane – avoid frontal and transverse initially because of the potential for dynamic valgus
Cardiovascular Exercise	<ul style="list-style-type: none"> • Swimming with flutter kick (no breaststroke) or StairMaster • No Running
Progression Criteria	<ul style="list-style-type: none"> • Full range of motion • No effusion (swelling) • No patellar apprehension • Single leg balance with 30° of knee flexion greater than 15 seconds • Good control and no pain with squats and lunges

PHASE IV (16-18 weeks after surgery, when Phase III criteria met)

Appointments	<ul style="list-style-type: none"> Rehabilitation appointments are approximately once every 2 to 3 weeks
Rehabilitation Goals	<ul style="list-style-type: none"> Good eccentric and concentric multi-plane dynamic neuromuscular control (including impact) to allow for return to work/sport
Precautions	<ul style="list-style-type: none"> Post-activity soreness should resolve within 24 hours Avoid post-activity swelling
Suggested Therapeutic Exercise	<ul style="list-style-type: none"> Impact control exercises beginning 2 feet to 2 feet, progressing from 1 foot to the other and then 1 foot to the same foot Movement control exercises beginning with low velocity, single plane activities and progressing to higher velocity, multi-plane activities Progression to multi-planar agility drills with progressive increase in velocity and amplitude Sport/work specific balance and proprioceptive drills Hip and core strengthening Stretching for patient specific muscle imbalance
Cardiovascular Exercise	<ul style="list-style-type: none"> Replicate sport or work specific energy demands
Progression Criteria	<ul style="list-style-type: none"> Return to sport/work criteria: Dynamic neuromuscular control with multi-plane activities and without pain, instability or swelling Approval from the physician and/or sports rehabilitation provider



PHASE V (when Phase IV criteria met)

In addition to ongoing strength, balance, agility, and cardio conditioning, initiate sport-specific plyometric activities as tolerated such as:

Soccer/Football: 2-foot ankle hop, double-leg hop, front barrier hop, lateral barrier hop, single-leg hop, power skip, backward skip, double-arm alternate-leg bound, and cycled split squat jump

Basketball/Volleyball: 2-foot ankle hop, double-leg hop, squat jump, double-leg vertical jump, single-leg hop, single-leg vertical jump, power skip, backward skip, double-arm alternate-leg bound, alternate-leg push off box drill, and side-to-side push-off box drill

Baseball/Softball/Overhead throwing sports: 2-foot ankle hop, double-leg hop, front barrier hop, lateral barrier hop, single-leg hop, power skip, backward skip, double-arm alternate-leg bound, cycled split squat jump, and return to throwing program