Isolated MPFL Reconstruction Rehabilitation Protocol

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This protocol provides general guidelines for rehabilitation following isolated MPFL reconstruction. Progression should be individualized based on the procedure, healing, and patient response, with modifications as directed by the surgeon.

Phase	Goals	Precautions / Restrictions	Treatment

Weeks 0 – 2	● **Protect surgical site**
	● Reduce pain and swelling
	● Active ROM: 0-90 degree
	● Full passive extension
	● Active quadriceps control
	● Reduce muscle atrophy
	● Safe use of assistive device
		● WBAT with crutches
		● **Avoid knee valgus forces**
			General guidelines
			● ROM (as tolerated)
			  ● PROM – AAROM -AROM
			● Quadriceps recruitment/NMES
			● Global LE/hip strengthening
			● Gait training with crutches
			● Modalities as indicated
			  ● Cryotherapy: 5-7 times per day
			Initial Visit
			● FOTO, LEFS, PSFS

Weeks 2 – 6	● Full, symmetric and pain- free AROM
	  ● 2-4 wks: **0-120 deg**
	  ● 4-6 wks: full ROM
	● SLR without extensor lag
	● **Normalized gait mechanics**
	● DL squat with good mechanics
	● Progression of quadriceps strength/endurance
	● Increase functional activities
		● Open kinetic chain is limited to bodyweight leg extensions (weeks 2-6)
		● Closed kinetic chain strength 0- **45 degrees** flexion
		● **No resisted open kinetic chain exercises**
		● **No running, jumping, cutting, pivoting, or twisting**
		● **Avoid painful activities/exercises**
			General guidelines
			● AAROM - AROM
			● Gait training progressing once adequate quad strength demonstrated
			● Core stabilization exercises
			● Closed kinetic chain strengthening within protected range of motion
			● Global LE strengthening
			  ● Begin functional strengthening exercises (bridge, mini-squat, step up, etc)
			  ● Stationary bike
			● Optional therapies (if available/as indicated):
			  ● BFR therapy
			  ● Anti-gravity treadmill for walking gait
			  ● NMES
			● Modalities as indicated
			Weeks 2–4
			● Optional therapy (if available/as indicated): Aquatic therapy once incision is healed and cleared by surgeon (2-4 weeks)
			Week 6
			● FOTO, LEFS

Weeks 6 – 12	● Full, symmetric and pain- free ROM without assistive device
	● Progress quadriceps strength/endurance
		● Progress from assistive device as able
		● May initiate resisted open kinetic chain exercise
		  ● **90-45°** at 6 weeks
		  ● **90-30°** at 8 weeks
		  ● **90-0°** at 10 weeks
			General guidelines
			● End range flexion and extension
			● Aerobic training on stationary bike, elliptical, stair climber, UBE
			● Core stabilization exercises
			● Progressive double and single limb strengthening

Phase	Goals	Precautions / Restrictions	Treatment
	• Increase functional activities • Total leg strength	• **90-0°** with progressive loading at 12 weeks • **No running, jumping, cutting, pivoting, or twisting** • **Avoid painful activities/exercises** • **Avoid patellofemoral pain**	• Double limb to single limb balance/proprioception • Aerobic training: • Walking program when walking with **normal gait mechanics** • Single to multi-plane exercise • Progression of balance/proprioception • Modalities as indicated **Week 12** • FOTO, LEFS, PSFS

Weeks 12-16	• Full, symmetric ROM
	• **No effusion with increased activity**
	• Increase intensity and duration of functional LE strength
	• Initiate return to jogging program
	• Begin low level plyometric and agility training
		• **Avoid painful activities/exercises**
		• Jogging program initiated at 12 weeks if cleared by surgeon
		  • **No effusion**
		  • Full AROM
		  • **>80%** LSI
		• **No jogging on painful or swollen knee**
		• Lateral support/buttress brace **per MD or patient preference**
			General guidelines
			• Increase loading capacity for lower extremity strengthening exercises
			• Continue balance/proprioceptive training
			Week 12
			• begin return to jogging program
			  • If applicable, start with pool/anti- gravity treadmill
			• Begin low level plyometric and agility training at 12 weeks
			Months 3–4
			• Follow up with MD

Months 4-6	• Continue to progress functional strengthening
	• Successful progression of the return to running program
	• Initiate higher level plyometric and agility training
		• **No jogging/running on a painful or swollen knee**
		• **Avoid painful activities/exercises**
		• **Avoid patellofemoral pain**
		• **No participation in sports unless specified by care team**
			General guidelines
			• Progression of return to jogging program
			• Gradually increase lifting loads focusing on form, control, and tissue tolerance
			• Progress as tolerated:
			  • Core Stability
			  • Strength
			  • Endurance
			  • Proprioception/Balance
			• Increase intensity of plyometric and agility training
			• Foot speed and change of direction
			Month 6
			• FOTO, LEFS, PSFS
			• Functional assessment at 6 months **per MD**

Phase	Goals	Precautions / Restrictions	Treatment

Months 6 +	● Continue to progress functional strengthening
	● Sport-specific training
	● Begin gradual return to sport
	● Pass return to play criteria
		● **No participation in sports unless specified by care team**
		● **Avoid painful activities**
		● Gradual return to full participation in sports
			General guidelines
			● Progress as tolerated:
			  ● Core Stability
			  ● Strength
			  ● Endurance
			● Begin sport-specific training
			  ● Proprioception/Balance
			  ● Plyometric training
			  ● Agility drills
			  ● Sport-specific activities
			  ● Single-to multi-task
			  ● Reactionary drills
			  ● Perturbation training
			  ● Closed to open environment
			● Gradual return to sport progression
			  Functional assessment as needed **per MD**
			Final visit
			● FOTO, LEFS, PSFS