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<u>Medial Patellofemoral Ligament Reconstruction</u> <u>Rehabilitation Protocol</u>

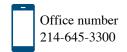
Time	Goals	Precautions/Restrictions	Treatment
Weeks 0 – 2	 Protect surgical site Reduce pain and swelling Active ROM: 0-90 degree Full passive extension Active quadriceps control Reduce muscle atrophy Safe use of assistive device 	 WBAT with crutches Avoid knee valgus Brace must be on at all times during the day and while sleeping, off for hygiene 	 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 painfree 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 discontinue brace at 6 weeks if able to obtain full extension without lag 	 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 Aquatic therapy once incision is healed and cleared by surgeon (2-4 weeks) NMES Modalities as indicated Week 6: FOTO, LEFS

This protocol is not meant to be prescriptive but a recommendation to guide the rehabilitation process.

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Weeks 6 - 12

- Full, symmetric and painfree ROM without assistive device
- Progress quadriceps strength/endurance
- Increase functional activities
- · Total leg strength

- Progress from assistive device as able
- May initiate resisted open kinetic chain exercise
- \circ 90-45° at 6 weeks
- o 90-30° at 8 weeks
- o 90-0° at 10 weeks
- o 90-0° with progressive loading at 12 weeks
- No running, jumping, cutting, pivoting, or twisting
- Avoid painful activities/exercises
- Avoid patellofemoral pain
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- End range flexion and extension
- Aerobic training on stationary bike, elliptical, stair climber, UBE
- Core stabilization exercises
- Progressive double and single limb strengthening
- 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
 - o No effusion
 - o Full AROM
 - o >80% LSI
- No jogging on painful or swollen knee
- Lateral support/buttress brace per MD or patient preference

- Increase loading capacity for lower extremity strengthening exercises
- Continue balance/proprioceptive training
- Week 12: begin return to jogging program
 - If applicable, start with pool/antigravity treadmill
- Begin low level plyometric and agility training at 12 weeks
- 3-4 month follow up with MD (SGYM)

Months 4-6

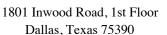
- Continue to progress functional strengthening
- Successful progression of the return to running program
- Initiate higher level plyometric and agility training
- No jogging/running on a painful or swollen knee
- Avoid painful activities/exercises
- Avoid patellofemoral pain
- No participation in sports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

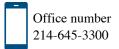
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Months 6 +

- 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
- Progress as tolerated:
 - o Core Stability
 - Strength
 - o Endurance
- Begin sport-specific training
 - o Proprioception/Balance
 - Plyometric training
 - o Agility drills
 - Sport-specific activities
 - $\circ \ Single-to \ multi-task$
 - o Reactionary drills
 - o Perturbation training
 - o Closed to open environment
- Gradual return to sport progression Functional assessment as needed per MD
- Final visit: FOTO, LEFS, PSFS

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