

## Medial Patellofemoral Ligament Reconstruction Rehabilitation Protocol

Time	Goals	Precautions/Restrictions	Treatment
Weeks 0 – 2	<ul style="list-style-type: none"> <li>Protect surgical site</li> <li>Reduce pain and swelling</li> <li>Active ROM: 0-90 degree</li> <li>Full passive extension</li> <li>Active quadriceps control</li> <li>Reduce muscle atrophy</li> <li>Safe use of assistive device</li> </ul>	<ul style="list-style-type: none"> <li>WBAT with crutches</li> <li>Avoid knee valgus</li> <li><b>Brace must be on at all times during the day and while sleeping, off for hygiene</b></li> </ul>	<ul style="list-style-type: none"> <li>ROM (as tolerated)               <ul style="list-style-type: none"> <li>PROM – AAROM -AROM</li> </ul> </li> <li>Quadriceps recruitment/NMES</li> <li>Global LE/hip strengthening</li> <li>Gait training with crutches</li> <li>Modalities as indicated               <ul style="list-style-type: none"> <li>Cryotherapy: 5-7 times per day</li> </ul> </li> <li>Initial Visit: FOTO, LEFS, PSFS</li> </ul>
Weeks 2 – 6	<ul style="list-style-type: none"> <li>Full, symmetric and pain-free AROM               <ul style="list-style-type: none"> <li>2-4 wks: 0-120 deg</li> <li>4-6 wks: full ROM</li> </ul> </li> <li>SLR without extensor lag</li> <li>Normalized gait mechanics</li> <li>DL squat with good mechanics</li> <li>Progression of quadriceps strength/endurance</li> <li>Increase functional activities</li> </ul>	<ul style="list-style-type: none"> <li>Open kinetic chain is limited to bodyweight leg extensions (weeks 2-6)</li> <li>Closed kinetic chain strength 0-45 degrees flexion</li> <li>No resisted open kinetic chain exercises</li> <li>No running, jumping, cutting, pivoting, or twisting</li> <li>Avoid painful activities/exercises</li> <li><b>discontinue brace at 6 weeks if able to obtain full extension without lag</b></li> </ul>	<ul style="list-style-type: none"> <li>AAROM - AROM</li> <li>Gait training progressing once adequate quad strength demonstrated</li> <li>Core stabilization exercises</li> <li>Closed kinetic chain strengthening within protected range of motion</li> <li>Global LE strengthening               <ul style="list-style-type: none"> <li>Begin functional strengthening exercises (bridge, mini-squat, step up, etc)</li> <li>Stationary bike</li> </ul> </li> <li>Optional therapies (if available/as indicated):               <ul style="list-style-type: none"> <li>BFR therapy</li> <li>Anti-gravity treadmill for walking gait</li> <li>Aquatic therapy once incision is healed and cleared by surgeon (2-4 weeks)</li> <li>NMES</li> </ul> </li> <li>Modalities as indicated</li> <li>Week 6: FOTO, LEFS</li> </ul>

This protocol is not meant to be prescriptive but a recommendation to guide the rehabilitation process.  
 Each patient's progress may vary based on specifics to their injury and procedure.



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## Weeks 6 – 12

- Full, symmetric and pain-free 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
  - 90-45° at 6 weeks
  - 90-30° at 8 weeks
  - 90-0° at 10 weeks
  - 90-0° with progressive loading at 12 weeks
- No running, jumping, cutting, pivoting, or twisting
- Avoid painful activities/exercises
- Avoid patellofemoral pain
- 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
  - No effusion
  - Full AROM
  - >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/anti-gravity 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:
  - Core Stability
  - Strength
  - Endurance
  - 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 + | <ul style="list-style-type: none"><li>• Continue to progress functional strengthening</li><li>• Sport-specific training</li><li>• Begin gradual return to sport</li><li>• Pass return to play criteria</li></ul> | <ul style="list-style-type: none"><li>• No participation in sports unless specified by care team</li><li>• Avoid painful activities</li><li>• Gradual return to full participation in sports</li></ul> | <ul style="list-style-type: none"><li>• Progress as tolerated:<ul style="list-style-type: none"><li>○ Core Stability</li><li>○ Strength</li><li>○ Endurance</li></ul></li><li>• Begin sport-specific training<ul style="list-style-type: none"><li>○ Proprioception/Balance</li><li>○ Plyometric training</li><li>○ Agility drills</li><li>○ Sport-specific activities</li><li>○ Single-to multi-task</li><li>○ Reactionary drills</li><li>○ Perturbation training</li><li>○ Closed to open environment</li></ul></li><li>• Gradual return to sport progression<br/>Functional assessment as needed per MD</li><li>• Final visit: FOTO, LEFS, PSFS</li></ul> |
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