

Multiple Ligament Knee Injury Reconstruction/Repair Post-Operative Rehabilitation Protocol

(ACL,PCL, +/- MCL,LCL, or PLC)

Goals:

To protect the reconstructions while preventing knee stiffness. Early passive ROM exercises are very important, as is preventing excessive anterior and/or posterior tibia translation.

Phase 1 (0-6 weeks Post-Op)

Goals:

- Full knee ROM – all ROM exercises must be performed in the prone or side lying position for the first six weeks
- Pain/edema reduction
- Begin and enhance normalization of quad recruitment
- Prevent anterior/Posterior translation and tibia rotation

Brace/Precautions/Crutch Use

- Weight bearing status: 0-6 weeks: 50% weight bearing
- Brace at 0-2 weeks: locked in extension (0 degrees flexion/extension)
 - Brace may be unlocked for prone ROM exercises under guidance of PT or ATC
- Brace at 2-6 weeks: unlocked 0-90 degrees if able to tolerate
 - Brace may be removed for hygiene and therapy

Range of Motion

- 0-2 weeks post-op: 0 degrees
- 2-6 weeks post-op: 0-90 degrees

Strengthening

- Quad sets for strengthening
- **NO** active strengthening with knee flexion Home Instructions

Wound Care

- Keep surgical dressings clean and dry
- Change surgical bandages on the 2nd day after surgery (keep covered until first clinic visit)
- Avoid getting sutures wet until at least 5 days after surgery (**do not scrub, soak, or submerge the incisions**)
- Note DVT (Blood Clot) prophylaxis medications provided by your surgeon to take following surgery – **follow those instructions carefully**

Suggested Exercises

- Modalities as needed
- Perform home stretching exercises 2-3 times daily

- ROM exercises: in prone position or side lying only, grip the heads of the gastroc/soleus group and maintain neutral pressure proximally to the tibia while flexing the knee
- Advance ROM as tolerated
- Begin patella mobilizations
- Scar management
- Quad sets/SLR in brace at 0 degrees (assist patient with this exercise until solid quad contraction developed, prevent posterior sag) 10x10 3 times daily. May use ankle weights as they will increase anterior translation
- Seated calf exercises
- Time modulated AC (also known as Russian stim) in full extension
- Quad exercises for home program

After 2 weeks Post-Op:

- May add stationary bike to increase ROM. Start with high seat and progress to normal seat height when able, resistance as tolerated

After 3 weeks Post-Op:

- Leg press with both legs
- Leg extensions with anti-shear device or cuff weights. Progress weight as tolerated, keep resistance proximal

Phase 2 (6-10 weeks Post-Op)

Goals:

- Normalize gait mechanics and progress to full weight bearing as tolerated without assistive devices
- Improve ROM
- Completion of exercises without exacerbation of symptoms or reactive effusion

Brace/Precautions/Crutch Use

- Discontinue brace if capable of SLR without extensor lag
- Begin weaning off crutches and progress to full weight bearing as tolerated

Range of Motion

- Prone flexion 120 degrees or more and advance to full ASAP
- Maintain passive knee extension Home Instructions
- Restore normal activities of daily living (within weight-bearing restrictions)

Suggested Exercises

- Continue with Phase 1 exercises as appropriate
- May begin aquatic therapy emphasizing normal gait, marching forward/backward
- Treadmill walking – forward and retro
- Closed and open chain tubing exercises
- Single leg stands for balance/proprioception on Airex pad or trampoline
- Chair/wall squats – keep tibia perpendicular to floor
- Unilateral step ups – start with 2" height and progress to normal step height as able



Phase 3 (10-16 weeks Post-Op)

Goals:

- Progressing to full, pain-free ROM
- Maintain normal gait mechanics

Brace/Precautions/Crutch Use

- NONE

Range of Motion

- Progress to and maintain full ROM

Strengthening

- Advance hamstring strengthening in prone position
- Advance quad strengthening as tolerated

Suggested Exercises

- Continue with Phase 2 exercises as appropriate
- Stairmaster
- Slide board – start with short distance and progress as tolerated
- Elliptical for conditioning
- Cable column exercises – retro walking, lateral stepping, **NO CROSS OVER STEPPING OR SHUFFLING**
- Standing leg curls with cuff weights or seated leg curls with NK table at 5 lbs MAX

Phase 4 (4-6 months Post-Op)

Goals:

- Maintain full, pain-free ROM – symmetrical to uninvolved limb
- Initiate sport specific activities under supervision by ATC or PT
- Begin plyometric exercises

Precautions/Crutch Use

- NONE

Range of Motion

- Maintain full ROM

Strengthening

- Continue and progress strengthening based on individual needs and deficits

Suggested Exercises

- Continue with Phase 3 exercises as appropriate
- Begin walk-jog progression
- Plyometrics – low intensity vertical and lateral hopping to begin, use both feet and move to one foot ASAP

- **When plyometric exercise intensity is high, the volume must be decreased**

Phase 5 (6+ months Post-Op)

Goals:

- Safe return to athletics/work
- Maintenance of strength, power, endurance, proprioception

Precautions/Crutch Use

- NONE

Range of Motion

- Maintain full ROM

Strengthening

- Maintenance and progression of strength pending activity level goals

Home Instructions

- Maintain normal activities of daily living

Suggested Exercises

- Running and sport specific drills:
 - Stepping, shuffling, hopping, cariocas