

Postoperative Rehabilitation Protocol

Multiple Ligament Injury Reconstruction/Repair (ACL, PCL, +/- MCL, LCL, or PLC)

The goals of this protocol are 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.

Goals:

- Full knee ROM – all ROM exercises must be performed in the prone or side lying position for the first six weeks
 - 50% WB in brace, must use crutches for the first six weeks
 - Pain/edema reduction
 - Begin and enhance normalization of quad recruitment
 - Prevent anterior/posterior translation and tibial rotation

Postoperative weeks 0-6

- Modalities as needed
- Brace locked at 0° for the first two weeks. Can be unlocked only for prone ROM exercises by ATC or PT
- Brace 0° to 90° if able to tolerate from weeks 2-6
- Teach partner to perform home stretching exercise 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 mobilization
- Scar management
- Quad sets/SLR in brace at 0° (assist patient with this exercise until solid quad contraction developed, prevent posterior sag) 10x10 three times daily. May use ankle weights as they will increase anterior translation.
- **NO** hamstring isometrics for seven weeks
- Seated calf exercises
- Time modulated AC (also known as Russian stim) in full extension
- Teach quad exercises for home program
- PT visits at least twice weekly for the first month

2 weeks postoperatively

- Continue as above
- Stationary bike to increase ROM
 - Start with high seat and progress to normal seat height when able, resistance as tolerated

3 weeks postoperatively

- Continue as above
- Leg press with both legs
- Left extension with anti-shear device or cuff weights
 - Progress weight as tolerated, keep resistance proximal

6-8 weeks postoperatively

- Continue as above
- May begin aquatic therapy emphasizing normal gait, marching forward/backward
- Begin weaning crutches, discontinue brace and normalize gait mechanics
- Full WB as tolerated
- ROM – prone flexion 120° or more, advance to full ASAP
- 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

10 weeks postoperatively

- Continue as above
- All exercise should be on affected leg only at this time
- ROM should be progressing; if not contract surgeon
- Stairmaster
- Slide board – start with short distance and progress as tolerated
- Fitter
- Versa climber
- Nordic track and elliptical trainers
- Cable column exercises – retro walking, lateral stepping, NO crossover stepping or shuffling

- Standing leg curls with cuff weights or seated leg curls with NK table at 5 pounds max
- Advance strengthening for quads as tolerated

12 weeks postoperatively

- Continue as above
- Advance hamstring strengthening in prone position
- Assessment of jogging on a treadmill
- Lateral movement supervised by ATC or PT
 - Stepping, shuffling, hopping, cariocas
- Isokinetic exercises 180, 150, 120, 90, 60°/sec 8-10 reps each speed up and down spectrum

16-24 weeks postoperatively

- Continue as above
- Plyometrics – low intensity vertical and lateral hopping to begin, use both feet and move one foot ASAP
 - Volume for plyometrics (this is not a conditioning exercise, but a strengthening one) for rehabilitation
- 40-60 foot contacts/session for beginners
- 60-80 foot contacts/session for intermediate
- 80-100+ foot contacts/session for advanced
- If plyometric exercise intensity is high, the volume must be decreased
- 2-3 sessions per week, preferable on weight lifting days
- Initiate sport specific activities under supervision of ATC or PT
- Ample recovery time between sets

24 weeks postoperatively (6+ months)

- Continue as above
- Emphasize strength and power development
- Running and sport specific drills under ATC or PT supervision
- Isokinetic test for quad strength difference $\leq 15\%$ and unilateral hamstring/quad strength ratio of 65% or better
- Continued strength testing is appropriate for people returning to advanced recreational activities or sports.