

Lateral Collateral Ligament Reconstruction

This protocol is intended to be a general outline only. The physician reserves the right to either advance or delay this protocol as deemed necessary. If so, this should be done by direct communication with the therapist, or in writing on the therapy referral form given to the patient on the day of surgery.

Assistive Device Usage / TROM Post-Op Brace Usage:

- Bilateral axillary crutches to be used immediately post-op. Patient will be NWB 6 weeks.
- Maintain NWB with brace locked in extension 6 weeks with possible unloading wedge.
- After Week 6, WBAT with TROM locked in extension, weaning from crutches as able.
- TROM to be worn at all times, even with exercises for 6-8 weeks. Then transition into Playmaker or medial unloader brace.

Precautions

- **Avoid all hyperextension and varus stress of the knee.**
- No closed-chain knee flexion for first 8 weeks.
- No resisted hamstring exercises (open or closed chain) for first 6-8 weeks.
- No squats or lunges past 45 degrees of flexion for 16 weeks.
- Knee flexion ROM may be performed in supine or prone to tolerance.

Guidelines for Wound Care

Place occlusive dressing over steri-strips at wound sites at first visit. Change occlusive dressing every other day, leaving steri-strips on unless they come off easily. Cover old steri-strips with new ones if needed. Keep wound sites covered with occlusive dressing until stitches are removed. After that, cover with standard adhesive bandages until wounds are fully healed (wrap knee in plastic wrap for showers).

Frequency of Physical Therapy Visits: Schedule physical therapy visits 3x/week for the first four-six weeks, then decrease to 2x/week as indicated for a total of ~6 months, tapering as appropriate.

Patient to be seen Day One Post-op.

Graft protection the first 12 weeks is crucial. WB and ROM is restricted to prevent over-stretching. TROM brace to remain on throughout the first six weeks at all times other than bathing and ROM.

- Remove bulky dressings. Follow guidelines for wound care described above.
- Adjust knee immobilizer straps for proper fit once post op dressings are removed.
- Begin PROM 0-90 degrees.
- Patellar mobilization
- Quad sets
- SLR
- No sidelying hip add/abd to protect graft
- Ankle pumps / elastic band ankle exercises
- Use Russian electric stimulation to distal quad for improved muscle recruitment as needed.

- Frequent icing using Cryocuff or other ice machine for first 48 hours
- Issue home NMES unit for open-chain QS and SLR assist to prevent atrophy during NWB'ing period.

Week 1-6 (PROM knee flexion goal: 0-110 degrees by Week 6)

Patient to be seen 2-3/week as needed. If ROM and quad strength are progressing well, consider decreasing to 1-2x/week with daily use of home NMES unit if needed for improving quad recruitment.

No closed chain knee flexion exercises till 8 weeks post-op.

- Continue above exercises
- Seated heel slides
- Gluteal and hamstring isometrics
- Seated hip flexion; multi-hip
- Perform electric stimulation to the quadriceps and/or Blood Flow Restriction to LE for muscle recruitment in open chain per therapist discretion.

Week 6-12 (WBAT with MD approval; ROM 0-120 degrees by Week 8, full ROM by Week 12)

Patient seen 2x/week as needed.

By Week 12, patient should be able to ambulate with normal gait, ascend and descend stairs with good quadriceps control.

Patient can be transitioned from TROM into Playmaker brace or unloader brace once quad control allows.

Closed-chain knee flexion exercises can be added at 8 weeks.

- Continue above exercises
- Work on end-range knee extension if not already available
- At Week 6: start stationary bike slowly and without resistance for ROM passive motion to 110 degrees must be obtained first
- At Week 6-8: Bilateral leg progressing to single leg balance activities on stable surfaces as tolerated
- Hamstring curls
- Add standing weight shifts
- Standing resisted TKEs
- Heel raises, soleus reaches
- SLR - add weights when able
- Progressive SLS drills - reaching activities, ball toss, etc.
- Leg press from 10-45 of flexion, bilateral legs
- After Week 8, when patient has good quad recruitment, add closed-chain exercises: linebacker squats (0-45)
- Progress from bilateral to unilateral leg exercises on stable surfaces as tolerated
- Step-ups (forward only). Avoid motions past 45 degrees of knee flexion and torsional movements

Week 12-16 weeks

Patient seen 2x/week as needed.

PROM goal: Full motion at 12 weeks.

- Step ups - forward and lateral, progressive height
- Lunges forward and reverse to 45 degrees - add weights as tolerable.
- Add lateral lunges to the non-operative side no greater than 45 degrees
- Add side-lying hip abduction, adduction, and extension exercises at 16 Weeks.
- Incorporate total-body strengthening, focusing on core control: unilateral bridges, fire hydrants, RDLs, resisted clamshells, prone and side planks.

Week 16-36

Patient seen on as-needed basis for HEP progression.

- Single leg squats
- Step down and progressive eccentric loading in closed chain.
- Begin jogging and then progress to running drills if patient has good control and endurance with above exercises (see below).
- Add destabilization and uneven surfaces to double and single-leg closed-chain co-contraction exercises
- Add forward and lateral lunges
- Add step-down, step-up with rotation, star squats, and cone pickup from floor.
- Add slide board, foot slider, and Reformer activities
- Begin plyometric lateral shuffles, progressing to karaoke shuffles
- Progress to light running program and light sport specific drills if:
 - Patient can perform 8 step down with good control
 - Active ROM 0 to 125 degrees
 - Functional hop test 70% contralateral side
 - Swelling 1cm at joint line
 - No pain
 - Walking gait without antalgia
- Begin Phase IV Rehab based on criteria below:

Phase IV Rehab:

At therapist and MD discretion after Week 16-20, assess for return to sport-specific training using the ACE program, Y Balance Test, and/or Move2Perform testing, including the Single Leg Hop Test, Triple Hop Test, and Triple Crossover Hop Test (Goal = within 90% of non-operative LE for athletes for all hop tests).

Quad girth should be within one inch of non-operative LE.

- Advance to progressive plyometric activity:
 - Advanced ladder agility drills
 - Begin two-foot jumping (in place, then add distance, height and rotational components)
 - Progress to single leg hopping (in place, then add distance, height, and rotational components)
- Discharge when patient has achieved full ROM, is independent with ongoing HEP for strength/coordination, and has ability to perform all ADLs and work demands.

Contact Sports: See Phase IV guidelines above.

Prior to return to sport, patient should pass standardized testing as outlined above, showing good leg control on both legs and side-to-side symmetry within 90% for athletes. Begin non-

competitive or competitive play at 6-8 months post-op, once physician and therapist are satisfied with sport-specified functional drill performance.

The use of a custom or off-the-shelf sports brace (Defiance, Full Force, etc.) may be recommended by the physician or therapist for improved proprioception.

Updated August 2019.