



Christopher Kim, MD

The Iowa Clinic Orthopaedics Department

Knee PCL/ACL Reconstruction Rehab Protocol

Week 1-2 (Brace locked in extension, TTWB brace locked in extension)

- Ankle pumps every hour
- Post-op brace to maintain full extension
- Quad sets and SLR (brace on) with no lag
- TTWB with crutches
- Ice or Cyrocuff Unit on knee for 2-30 minutes every hour
- Passive ROM exercises: Limits: 0 to 40 degrees
- No active knee flexion or open chain knee flexion
- No hamstring workouts

Week 3-6 (ROM 0-90 deg, TTWB with brace locked in extension)

- Supervised PT : 2- 3 times a week (may need to adjust based on insurance)
- Continue SLR's in brace with foot straight up, quad isometric sets, ankle pumps, heel slides
- No active hamstring workouts or active Knee flexion
- No weight bearing with knee in flexed position, TTWB with brace locked in full extension
- Patellar mobilization exercises
- Brace locked in full extension for ambulation and sleeping, and may unlock for sitting with limit 0-90 deg.
- May not remove brace for HEP

Week 7 (ROM as tolerated, TTWB with brace locked in extension)

- Continue with above exercises/ice treatments
- Advance ROM as tolerated with no limits with brace on
- Stationary bike for range of motion (short crank or high seat, no resistance) Ok to remove brace for bike here
- No weight bearing with knee in flexed position, continue TTWB with brace locked in full extension
- Perform scar message aggressively



- Progressive SLR program for quad strength with brace on - start with 1 lb, progress 1 -2 lbs per week
- Hamstring active knee flexion OK
- Seated leg extension (90 to 40 degrees) against gravity with no weight
- Hip adductor, flexor strengthening

Week 8 (TTWB as above)

- Continue all exercises
- No weight bearing with knee in flexed position, TTWB with brace locked in full extension
- Flexion exercises seated AAROM
- AAROM (using good leg to assist) exercises (4-5x/ day) with brace on
- Continue ROM stretching and overpressure into extension
- SLR's - with brace on
- Leg press 0-70° arc of motion

Week 9 (WBAT)

- Continue above exercises
- Start WBAT with brace on in full extension and D/C crutches when stable
- Hamstring and calf stretching
- Self ROM 4-5x/day using other leg to provide ROM
- Advance ROM as tolerated - no limits, may remove brace for ROM
- Regular stationary bike if flexion > 115°
- Heel raises with brace on
- Hip strengthening

Week 10

- Continue above exercises
- Unlock brace for ambulation when quad control adequate
- Mini squats (0-60 degrees) and quad strengthening
- 4 inch step ups
- Isotonic leg press (0 - 90 degrees)
- Lateral step out with TheraBands
- Hip strengthening

Week 11

- D/C brace if quad control adequate
Advance ROM, Goal: 0 to 115 degrees, walking with no limp
- Add ball squats
- Initiate retro treadmill with 3% incline (for quad control)
- Increase resistance on stationary bike

- Mini-squats and weight shifts
- Sport cord (bungee) walking
- 8-inch step ups
- 4-inch step downs

Week 12

- Begin resistance for open chain knee extension
- Swimming allowed, flutter kick only
- Bike outdoors, level surfaces only
- Progress balance and board throws
- Plyometric leg press
- 6-8 inch step downs
- Start slide board
- Jump down's (double stance landing)
- Progress to light running program and light sport specific drills if:
 - Quad strength > 75% contralateral side
 - Active ROM 0 to > 125 degrees
 - Functional hop test >70% contralateral side
 - Swelling < 1cm at joint line
 - No pain
 - Demonstrates good control on step down

Week 12-22

- Stairmaster machine
- If full ROM, quad strength > 80% contralateral side, functional hop test >85% contralateral side, satisfactory clinical exam:
 - Progress to home program for running. Progress to hops, jumps, cuts and sports specific drills. Begin to wean from supervised therapy.

6-12 months

- Criteria to return to sports
 - Full Active ROM
 - Quadriceps >90% contralateral side
 - Satisfactory clinical exam
 - Functional hop test > 90% contralateral side