



ACL Reconstruction Rehabilitation Protocol

Clayton W. Nuelle, M.D.

Diagnosis: Right/Left ACL Reconstruction with BTB Autograft/Allograft, Hamstring or Quadriceps Autograft/Allograft

Date of Surgery: _____

Frequency 2-3 times per week.

- No open chain or isokinetic exercises
- Provide patient with home exercise program per protocol

Weeks 0-2 (Phase I):

- May use crutches immediately postop, but advance to WBAT with brace locked in extension as tolerated
- Straight leg raises 3-4 times/day with brace locked in extension, unlock brace for gentle ROM exercises.
- Patellar mobilization, 5-10 minutes daily

Weeks 2-6 (Phase II): Period of protection

- Weight bearing as tolerated without assist by post-op day 10.
- **BTB Autograft:** Brace unlocked for ambulation when quad control is adequate. Discontinue brace no sooner than 4 – 6 weeks post operative at the discretion of the therapist. Brace locked in extension at night until full terminal extension is attained.
- **BTB/Hamstring/Quadriceps Allograft:** Brace unlocked for ambulation when quad control is adequate. Discontinue brace no sooner than 2 – 4 weeks post operative at the discretion of the therapist. Brace locked in extension at night until full terminal extension is attained.
- **Hamstring/Quadriceps Autograft:** Brace unlocked for ambulation when quad control is adequate. Discontinue brace no sooner than 2 - 4 weeks post operative at the discretion of the therapist. Brace locked in extension at night until full terminal extension is attained.
- ROM – progress through passive, active and resisted ROM as tolerated. Extension board and prone hang with ankle weights (up to 10 lbs), posterior leg stretch (legs up against a wall), seated wall sits (back against wall, legs flat on ground) recommended. Stationary bike with no resistance for knee flexion (alter seat height as ROM increases). Encourage frequent ankle ROM. **ROM Goals – Full extension by 2 wks, 110° of flexion by 2 wks, ≥130° flexion by 6 weeks.
- Patellar mobilization, 5-10 minutes daily.
- Strengthening – quad sets (seated first, progress to standing), SLRs with knee locked in extension. Standing glut sets. Begin closed chain work (mini-squats/weight shifts, gentle leg press 0-90 degree arc) when full weight bearing. Wall sits w/squeezes (progress knee flexion angle and length of time/reps). Progress proprioception training. Initiate Step Up program. No restrictions to ankle/hip strengthening.
- Modalities prn (ie electrical stimulation, ultrasound, etc) per discretion of therapist.
- Heat before therapy sessions.
- Ice after therapy sessions.
- May participate in aquatherapy after week three.

Weeks 6-12 (Phase III):

- ROM – Continue with daily ROM exercises
**Goal – increase ROM as tolerated to full
- Strengthening – Increase closed chain activities as tolerated. Progressive squat program. *Monitor for anterior knee pain symptoms and adjust/slow down accordingly.* Add lunges, side lunges, leg press and/or slideboard. Initiate Step Down program. Isotonic Knee extension (90 to 40 degrees, closed chain preferred). Versaclimber/Nordic Track, retrograde treadmill ambulation, Stairmaster. Add core strengthening exercises. Progress balance/proprioception.
- Continue stationary bike for ROM, strengthening and cardio.
- Continue modalities prn as indicated above.
- Heat before therapy sessions.
- Ice after therapy sessions.

Weeks 12-18 (Phase IV):

- Advance strengthening as tolerated, continue closed chain exercises. Increase resistance on equipment.
- Begin forward treadmill running program when 8” step down is satisfactory (No sooner than 12 weeks).
- Initiate and slowly progress agility training, reciprocal running (figure 8s, smooth cutting drills, start/stop, etc.).
- Begin plyometrics and increase as tolerated.
- Begin to wean patient from formal supervised therapy encouraging independence with home exercise program.
- Continue modalities prn as indicated above.
- Heat before therapy sessions.
- Ice after therapy sessions.

Weeks 18+ (Phase V):

- Continue strengthening/flexibility
- Initiate sport-specific agility drills and functional testing
- Advance plyometric program starting at 22 weeks
- Advance agility program at 22 weeks (Z cuts, backward to forward running, footwork drills, double leg power jumps, alternate single leg jump rope)
- Return to sports approx. 22-30 weeks post-operatively (**MD CLEARANCE REQUIRED**)
- Continue modalities prn as indicated above.
- Heat before therapy sessions.
- Ice after therapy sessions.

For more information please visit: www.tsaog.com/drnuelle