

# Rehabilitation Guidelines: Anterior Cruciate Ligament (ACL) Reconstruction with Bone-Patellar Tendon-Bone Autograft



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## **DAY 1 TO WEEK 2**

- CPM 2 hours twice per day; increase ROM as tolerated, Discontinue when 0 – 110° achieved
- Ice as indicated, no more than 15 minutes each hour
- WBAT with crutches. Discontinue crutches if able to stand on involved leg with brace locked
- Drop lock knee brace in locked position except when exercising. Remove brace for therapeutic exercises and CPM
- PROM per patient tolerance; 0 - 110°; stress full extension
- Supine and prone sustained extension stretching. **Never put anything under the knee**
- Soft tissue mobilization of scar
- Supine wall slide
- Seated hamstring (carpet drags) / prone hamstring curls / sports cord knee flexion
- Stationary bicycle
- Isometric quadriceps contraction in complete / supported extension.
- Biofeedback, NMES, etc.; techniques to overcome quad inhibition
- SLR x 4 directions without extension lag, resistance above the knee. If lag, patient may perform SLRs with brace locked
- Isometric quadriceps contractions at 0° and 65° with/without electric stimulation
- Patella mobilizations
- Modalities to decrease swelling and pain
- Flexibility exercises: hamstrings, quadriceps, gastrocsoleus, ITB, and hip flexors
- Airdyne and UBE aerobic program / Upper body and core strengthening program

## **WEEK 2 - 3**

- Continue with the above program
- PWB balance activities
- Bilateral "mini-squats" (0 - 40°); progress to semi-squats (0-80°)
- Bilateral Leg Press (0-80°), bilateral calf raises
- Unlock brace for sitting (monitor for loss of extension). Continue with locked brace for sleeping
- Unlock brace for ambulation if SLR without lag

## **WEEK 3 - 4**

- Discontinue brace at night if extension is maintained
- Step-ups
- Walking on heels
- FWB balance and proprioception exercises (provided adequate quad control)

#### **WEEK 4 - 5**

- Discontinue brace for ambulation. Monitor for loss of extension
- Short arc quads; isolated quad strengthening
- Wall sits (consider PFP)
- Unilateral eccentric leg press
- Stairmaster as tolerated
- Lateral shuffles
- Double leg hops
- Profitter & slide board

#### **WEEK 6 - 8**

- Full arc quads / Isokinetic program - progress as tolerated (monitor for patellofemoral pain)
- Single-limb hopping on leg press
- Eccentric "star" taps
- Eccentric step downs
- Aquatic program if applicable
- Record Isokinetic test, KT-1000, KOS @ 6 weeks
- Introduce perturbation progression

#### **WEEK 8-12**

- Single leg hops on ground
- Unilateral Eccentric Leg Press
- Progress step height for step ups/down
- Bosu or stability step-ups
- Record Isokinetic test, KT-1000, Hip MMT, KOS @ 12 weeks
- Unilateral "minisquats" (0 - 40°);
- Advance in perturbation training

#### **WEEK 12 to 20**

- Roller-blading and ice-skating as tolerated. (Check with physician, may need ACL orthosis)
- Plyometrics program; box jumps, scissor jumps
- Jogging straight ahead
- Jumping rope
- Lunges sideways / forward

#### **WEEK 20 - 24**

- *Cutting / Agility drills and sports-specific training*
- Reactive jumping
- Record Isokinetic test, KT-1000, Hip MMT, KOS @ DC

#### **WEEK 24 - Return to Sport (36 wks for Allograft)**

Advance to full sports activities if <20% strength deficit. Brace if KT-1000 >5mm and <3mm improvement from pre-op, Single-Limb Hop test ≥80% of uninjured LE.