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**ACL Reconstruction Rehabilitation Framework**

**Preoperative Phase**

- \*KT-1000, CA-4000.
- \*Isokinetic test (chronic).
- \* Brace fitting.
- \* Cryo/Cuff instruction
- \* Crutch ambulation training.
- \* Post Op exercise instruction.
  - Quad sets
  - Leg lifts
  - Active flexion/passive extension
  - Patella mobilization
  - Quadriceps/Hamstrings isometrics at 90°
- \* Quadriceps re-education.
- \* Restoration/Improvement of ROM.
- \* Reduction of edema/inflammation.
- \* Instruction in brace routine.

**Post Op Phases**

**Hospital Phase**

- \* CPM 0-60° during day progress to 90°.
- \* Locked at 0° in brace overnight.
- \* Ambulate PWB with crutches (patellar tendon), TTWB with crutches (STG), and brace locked.
- \* Instruct/Review home exercises.
- \* Dressing change.
- \* Cryo/Cuff PRN.

**Discharge Criteria:**

PROM to 90°  
Independent in ambulation/transfers  
Independent in exercise and brace routine  
Pain controlled

### **1-4 Weeks Post-Op**

- \* Progressive weight bearing, PWB-WBAT (PTG).
- \* Progressive weight bearing, TTWB-PWB (STG).
- \* Progress ROM 0-120°
- \* Hip and hamstring PRE's
- \* Quadriceps re-education (electrical stim, biofeedback).
- \* Leg press in 90-40° arc, start with eccentrics and light weight.
- \* LIDO exercises: CPM, isometrics at 90°, active flexion/passive extension.
- \* Emphasize patellar mobilization.
- \* Cardiovascular exercises as tolerated.
- \* short crank bicycle ergometry.
- \* Cryotherapy.
- \* Continue with home exercise program.

### **4-6 Weeks Post-Op**

- \* Progress to FWB with brace set 0-50° and crutches
- \* Ambulation training in Aquatrex.
- \* Progress ROM as tolerated.
- \* Leg press in 90-30° arc.
- \* Calf raises.
- \* Bicycle ergometer.
- \* LIDO exercises: isometrics, active flexion/passive extension, concentric/eccentric hamstrings.
- \* KT-1000 at 6 weeks.
- \* Brace change at 6 weeks.

### **6-12 Weeks Post Op**

- \* Restore normal gait, discontinue crutches when gait is not antalgic.
- \* Begin squat/step program.
- \* Begin proprioception program.
- \* Quadriceps isotonic (knee extension) allowed with distal pad in 90-40° arc (Closed chain activities preferred, i.e.. leg press, partial squats, wall slides, etc.).
- \* Begin Retro program.

### **6-12 Weeks Post Op (Cont.)**

- \* Continue with endurance activities.
- \* LIDO exercises: isotonic, quadriceps eccentrics with proximal pad, hamstring concentrics/eccentrics.
- \* Nordic track.

### **12-20 Weeks Post Op**

- \* Continue with lower extremity PRE's.
- \* Quadriceps isotonic (knee extension) in 90-30° arc.
- \* Begin functional exercise program.
- \* Progress endurance activities.
- \* Maintain/Improve flexibility in lower extremities.
- \* LIDO exercises: Isokinetics in 90-30° arc with distal pad, quadriceps eccentrics in 20-80° arc, test at 120°/s and 240°/s prior to onset of running program.
- \* Begin running program (PWB-FWB).
- \* KT-1000 at 3 months post-op.

### **20-28 Weeks Post-Op**

- \* Advance to full arc PRE's to restore strength, emphasizing quadriceps.
- \* Agility exercises.
- \* Advanced functional exercises.
- \* Continue/Progress running program.
- \* LIDO exercises: Isokinetic test at 20 weeks (60, 180, 240°/s), full arc isokinetics in velocity spectrum.
- \* Functional test assessment at 24 weeks.
- \* KT-1000 test at 24 weeks.
- \* Return to limited sporting activities.

### **28-40 Weeks Post-Op**

- \* Restore strength, function, endurance, and agility of lower extremity.
- \* Functional test assessment.
- \* Isokinetic test.
- \* Return to full activity.