



## ANTERIOR CRUCIATE LIGAMENT SUBSTITUTION SURGERY

### **PRE-OP**

- Perform preoperative evaluation
- Begin preoperative rehabilitation program to regain range of motion, strength, and normal gait pattern
- Explain pre- and post-surgery goals
- Patient and family education regarding surgical procedures and current pathology
- Demonstrate post-op rehabilitation program which patient will initiate day 1-3

### **1-4 DAYS POST-OP**

#### *Restrictions*

- Wear immobilizer or LROM brace locked at 0° while sleeping or walking, otherwise it may be removed for exercises as needed
- Emphasize terminal knee extension, unless posterior-lateral complex injury
- Cryotherapy as often as tolerated without direct contact to the skin
- Ambulate WBAT with crutches and knee immobilized (unless otherwise instructed by MD)
- Elevate lower extremity with knee straight (no pillows underneath the knee)
- Notify physician if fever of 100° or more

#### *Rehabilitation*

- Began postop program day 1
- Passive knee extension but towel roll under heel or prone leg hangs for 10-15 minutes, 3 times a day
- Active or active-assistive heel slides, 10 minutes per hour
- Quad sets, 10 second contractions, 20 per hour
- Straight leg raises, 2x10-15 repetitions, 2-3 times per day, if less than 15-20° of knee extension lag (otherwise needs assistance)
- Patella mobilization as tolerated
- Gravity assisted knee flexion off of the table or chair (ie. for meals)
- AROM of the ankle/ankle pumps
- Gastrocnemius and soleus stretches

### **4-14 DAYS POST-OP**

#### *Restrictions*

- Continue weight-bearing, as tolerated with crutches and brace locked at 0°
- Continue elevation and cryotherapy
- Continue sleeping with the brace locked at 0°

- May shower after all the postoperative dressing is removed (usually day 3) and adequate leg control returns
- Monitor incision for appropriate healing, but notify physician if increased redness or drainage continues

### *Rehabilitation*

- Goal: > 90° of flexion with at least 0° extension
- Continue all exercises from phase I
- Hamstring isometrics (may need to wait if hamstring autograft)
- 4 – way SLR when adequate leg control returns
- Side-lying hip ER strengthening
- Begin weight-shift exercises as weight-bearing restrictions allow
- Once full weight-bearing, initiate bilateral calf raises
- Gait training, in-line walking, cones forwards and lateral
- Modalities as needed for pain/effusion

## **14-28 DAYS POST-OP**

### *Restrictions*

- Continue cryotherapy
- Decrease crutches from 2 to 1 to none as proper leg control is achieved
- Emphasize normal walking pattern
- May stop sleeping in brace if full extension is achieved

### *Rehabilitation*

- Advance previous exercises as tolerated with ankle weights starting above the knee working towards below the knee
- Increase range of motion to within normal limits as tolerated
- Begin partial squats, bilateral>> resisted>> unilateral
- Begin forward step ups: Start at 4 inches>> 6 inches>> 8 inches
- Begin stationary bicycle for ROM
- Begin active hamstring curls, progress to resistive as tolerated
- Began single leg stance exercises for proprioception/balance, static>> dynamic
- Active knee extension in a SAQ ROM only 45° - 0° if no patellofemoral pain
- Scar massage/mobilization as needed

## **4-8 WEEKS POST-OP**

### *Restrictions*

- Must enforce a normal gait pattern
- Must regain normal range of motion
- No running, jumping, or plyometric activities yet

### *Rehabilitation*

- ***Protect patellofemoral joint and adjust exercises accordingly***
- May begin aquatic therapy once incision is completely healed
- Advanced CKC exercises to leg press, bilateral>> unilateral, eccentrically focused
- Advanced balance and proprioceptive retraining
- Advanced to 4 way hip machine, Stairmaster, elliptical trainer, hamstring curl machine as tolerated
- Advanced stationary cycling to endurance training>> interval training

## **8-12 WEEKS POST-OP**

- Advance CKC strengthening, focusing on sport specific routine
- Advance proprioception and balance routine, BOSU, Therapad, Rebounder, SportKat, etc.
- Measure for functional knee brace

## **12-16 WEEKS POST-OP**

- If muscle tone, strength and proprioception are sufficient, start light jogging program (no cutting or pivoting)
- Begin light agility drills, advancing from to leg activities to single leg
- Begin plyometrics, advance from to leg activities to single leg
- Began light sport specific drills

## **4-6 MONTHS POST-OP**

- Continue strengthening, plyometrics, proprioception, agility training, sport running program
- Advance sport specific drills
- Return to normal activity would release by physician.