

# REHABILITATION FOLLOWING ACL-HAMSTRING RECONSTRUCTION

## IMMEDIATE POST-OPERATIVE PHASE

### POD 1

Brace - Brace locked at zero degrees extension for ambulation

Weight Bearing – WBAT with two crutches as tolerated

Range of Motion - Full passive extension (0-90 degrees) Exercises

- \* Ankle pumps
- \* Passive knee extension to zero
- \* Straight leg raise (flexion)
- \* Hip Abd/Adduction
- \* Knee Extension 90-40 degrees (Active and AAROM)
- \* Quad sets
- \* Hamstring stretch

**Cryocuff**-Two hours on and two hours off cycle with knee in extension

### POD 2 to 7

Brace - Brace locked at zero degrees extension for ambulation

Weight Bearing - Two crutches as tolerated

Range of Motion - Patient out of brace 4-5 times daily to perform self ROM 0-90/100 degrees Exercises

- \* Intermittent ROM exercises (0-90 degrees)
- \* Patellar mobilization
- \* Ankle pumps
- \* Straight leg raises (4 directions)
- \* Knee extension 90-40 degrees
- \* Continue quad sets

**Cryocuff**- Two hours on and two hours off cycle with knee in extension

## **II. MAXIMUM PROTECTION PHASE (Week 2-8)**

Goals: Absolute control of external forces and protect graft  
Nourish articular cartilage  
Decrease swelling  
Prevent quad atrophy

### **A: Week Two**

Brace - Brace locked at zero degrees for ambulation only, unlocked for self ROM (4-5 times daily)

Weight Bearing - As tolerated (goal to discontinue crutches 14 days post op)

Range of Motion - Self ROM (4-5 times daily), emphasis on maintaining zero degrees passive extension

### **Exercises**

- \* Multi-angle isometrics at 90, 60, 30 degrees
- \* Leg raises (4 planes)
- \* Hamstring curls (isometrics)
- \* Knee extension 90-40 degrees
- \* Mini squats (0-30) and weight shifts
- \* Leg Press (0-60)
- \* PROM/AAROM 0-105 degrees
- \* Patellar mobilization
- \* Hamstring and calf stretching
- \* Proprioception training
- \* Well leg exercises
- \* Passive Resistive Exercise Program - start with 1 lb., progress 1 lb. per week

**Cryocuff**-Continue use after physical therapy sessions

**D/C Brace at end of week 2**

### **B: Week Four**

Range of Motion - Self ROM (4-5 times daily), emphasis on maintaining zero degrees passive extension

Exercises

- \* Same as week two
- \* PROM 0-125 degrees
- \* Bicycle for ROM stimulus and endurance
- \* Pool walking program, swimming
- \* Initiate eccentric quads 40-100 (isotonic only)
- \* Leg press (0-60)
- \* Emphasize Closed kinetic chain exercises
- \* Stairmaster

## **C: Week Six**

### Exercises

- \* Same as week four
- \* Hamstring Curls (light resistance)
- \* AROM 0-115 degrees
- \* PROM 0-125 degrees
- \* Emphasize closed chain exercises
- \* Bicycle/Stairmaster etc.

Exercises - Continue passive resistive exercise program

## **III. MODERATE PROTECTION PHASE (Week 10-16)**

Goals: Maximal strengthening for quads/lower extremity.

Protect patellofemoral joint

### **Exercises**

- \* Knee extension (90-40 degrees)
- \* Leg press (0-60)
- \* Mini squats (0-45)
- \* Lateral step ups
- \* Hamstring curls
- \* Hip Abd/Add
- \* Toe/calf raises
- \* Bicycle
- \* Stairmaster
- \* Wall Squats
- \* Lunges
- \* Pool running
- \* Proprioceptive training
- \* Continue passive resistive exercise progression (no weight restriction)

#### **IV. LIGHT ACTIVITY PHASE (Month 4-5)**

##### **Criteria to Enter Phase IV**

- \* AROM 0-125 degrees
- \* Minimal/no effusion
- \* Satisfactory clinical exam

##### **Goals:**

Development of strength, power, endurance  
Begin gradual return to functional activities

##### **A: Week 20-21 Exercises**

- \* Emphasize eccentric quad work
  - \* Continue closed chain exercises, step-ups, mini-squats, leg press
  - \* Continue knee extension 90-40 degrees
  - \* Hip abduction/adduction
  - \* Initiate plyometric program
  - \* Initiate outdoor running program
  - \* Initiate agility program
  - \* Sport specific training and drills
  - \* Hamstring curls and stretches
  - \* Calf raises
  - \* Bicycle for endurance
  - \* Pool running (forward/backward)
  - \* Walking program
  - \* Stairmaster
- High speed isokinetics

##### **Criteria for Outdoor Running**

Isokinetic Test - 85% > of opposite leg (quads), 90% > of opposite leg (hamstring)  
No Pain/Swelling  
Satisfactory clinical exam

##### Functional Drills

- \* Straight line running
- \* Jog to run
- \* Walk to run

## **V. RETURN TO ACTIVITY PHASE (Month 6-7)**

Achieve maximal strength & endurance

Return to sport activities

- Continue strengthening program for one year from surgery

### **Quads**

Knee Extensions

Wall Squats

Leg Press

Step Ups

### **Endurance**

Bicycle

Stairmaster

Nordic Trac

Swimming

### **Strength**

Hamstring Curls

Calf Raises

Hip Abduction

Hip Adduction

### **Stability**

High Speed Hamstrings

High Speed Hip Flexion/Extension

Balance Drills

Backward running