



Accelerated Rehabilitation Program for:

## **ACL - PTG Reconstruction** [Knee Reconstruction surgery]

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### **I. IMMEDIATE POST-OPERATIVE PHASE**

#### **GOALS:**

Quad control (ability to perform good quad sets & SLR)

PROM 0-90°

Full passive knee extension

Good patellar mobility

Minimal effusion

Ambulation with crutches

#### **● POD 1**

**WEIGHT BEARING** – Two crutches as tolerated (less 50%) with brace locked 0°. Can get off crutches day 1 if tolerated.

#### **EXERCISES:**

- Ankle Pumps
- Straight leg raises
- Hamstring stretch

**MUSCLE STIMULATION** – Muscle stimulation to quads (4 hours per day) during quad sets

**CPM** – Zero to 90° as tolerated

**ICE AND ELEVATION** – Ice 20 minutes out of every hour and elevate with knee in extension

#### **● POD 2 to 4**

**SURGICAL SITE CARE**

**DAILY DRESSINGS**

**BRACE**

**WEIGHT BEARING** – Two crutches as tolerated

**RANGE OF MOTION**

## EXERCISES:

- Multi-angle isometrics at 90°, 60°, 30° (for quads) · Straight leg raises (all 4 directions)
- Intermittent ROM exercises continued · Patellar mobilization
- Standing weight shifts & mini squats (0-30) ROM · Hamstring curls
- Ankle Pumps · Continued quad sets/glut sets

**MUSCLE STIMULATION** – electrical muscle stimulation to quads (6 hours per day) during quad sets, multi-angle isometrics and SLR's

**CPM** – Zero to 90°

**ICE AND EVALUATION** – Ice 20 minutes out of every hour and elevate with knee in extension

## • **POD 5-7**

### BRACE

### WEIGHT BEARING

**RANGE OF MOTION** – Patients out of brace to perform ROM 4-5 times daily

### EXERCISES:

- Multi-angle isometrics at 90°, 60°, 30°
- Intermittent ROM exercises
- Standing weight shifts & mini squats (0-30)
- Ankle Pumps
- Active knee extension 90° to 40°
- Straight leg raises (all 4 directions)
- Patellar mobilization
- Hamstring curls
- Passive knee extension to 0°

**MUSCLE STIMULATION** – Electrical muscle stimulation (continued 6 hours daily)

**CPM** – Zero to 90°

## II. **MAXIMUM PROTECTION PHASE (Week 2-3)**

### GOALS:

- Absolute control of external forces and protect graft
- Nourish articular cartilage
- Decrease fibrosis
- Stimulate collagen healing
- Decrease swelling
- Prevent quad atrophy

### A. **WEEK TWO**

#### GOALS –

**BRACE** – Discontinue brace/immobilizer if MD indicates

(Patients of Dr. Marushack –brace locked at 0° when ambulating)

**WEIGHT BEARING** – As tolerated (goal to discontinue crutches 7-10 days post-op)

**RANGE OF MOTION** – Self ROM (4-5 times daily) emphasis on maintaining 0° passive extension

## EXERCISES:

- Multi-angle isometrics at 90°, 60°, 30°
- Knee extension 90-40°
- Hamstring curls
- Patellar mobilization
- Proprioception training
- PRE Program – start with 1 lb per week
- Leg raises (4 planes)
- Mini squats (0-40) and weight shifts
- PROM 0-105
- Hamstring and calf stretching
- Well leg exercises

**SWELLING CONTROL** – Ice, compression, elevation

## B. WEEK THREE

**RANGE OF MOTION** – Self ROM (4-5 times daily) emphasis on maintaining 0° passive extension

**FULL WEIGHT BEARING** – No crutches

### EXERCISES:

- Same as Week Two
- Bicycle for ROM stimulus and endurance
- Initiate eccentric quads 40-100 (isotonic only)
- Stair machine
- PROM 0-115°
- Pool walking program
- Leg press (0-60)
- Nordic Track

## III. CONTROLLED AMBULATION PHASE (WEEK 4-7)

### GOALS

**Control Forces during walking**

### CRITERIA TO ENTER PHASE III:

**AROM 0-115°**

**Quad strength 60% > contralateral side (ISOMETRIC TEST) [60° knee flexion angle]**

**Minimal effusion**

**If patient demonstrates adequate quad control can ambulate is knee**

**RANGE OF MOTION** – Self ROM (4-5 times daily) emphasis on maintaining 0° passive extension

### EXERCISES:

- SAME AS Week Three
- Initiate swimming program
- Initiate step-ups (start with 2" & gradually increase)
- PROM 0-130°
- Increase closed kinetic chain rehab
- Increase proprioception training

## IV. MODERATE PROTECTION PHASE (Week 7-12)

### GOALS:

**Protect patellofemoral joint's articular cartilage**

**Maximal strengthening for quads, lower extremity**

### **CRITERIA TO ENTER PHASE III:**

#### **AROM 0-125°**

Quad strength 60% of contralateral leg (isokinetic test)

Minimal effusion

No patellofemoral complaints

Satisfactory clinical exam

### **ISOKINETIC TEST – Week 10**

#### **EXERCISES:**

- Continue closed chain exercises, step-ups, mini-squats, leg press
- Emphasize eccentric quad work
- Hip abduction/adduction
- Calf raises
- Pool running (if accessible to pool)
- Stair machine
- Continue knee extension 90-40°
- Hamstring curls and stretches
- Bicycle for endurance
- Walking program
- Initiate isokinetic work 100-40°

## **V. LIGHT ACTIVITY PHASE (Month 2-3)**

### **GOALS:**

Development of strength, power, and endurance

Begin to prepare for return to functional activities

### **CRITERIA TO ENTER PHASE III:**

#### **AROM 0-125° >**

Quad strength 70% of contralateral side, knee flexor/extender rated 70-79%

Minimal effusion

Satisfactory clinical exam

**TESTS** – Isokinetic Tests: Week 10-12 and 16-18

#### **EXERCISES:**

- Continued strengthening exercises
- Initiate running program
- Sport-specific training and drills
- Initiate plyometric program
- Initiate agility drills

## **VI. RETURN TO ACTIVITY PHASE (Month 3-4)**

### **GOALS:**

Achieve maximal strength and further enhance neuromuscular coordination and endurance

### **CRITERIA TO ENTER PHASE III:**

Isokinetic test that fulfills criteria

Functional test 80% > contralateral leg

Satisfactory clinical exam

**TESTS** – (1) Isokinetic Test prior to return and (2) Functional Test

**EXERCISES:**

- Continue strengthening program
- Continue closed chain strengthening program
- Accelerated sport-specific training and drills
- Continue plyometric program
- Continue running & agility program

• **SIX-MONTH FOLLOW-UP**

ISOKINETIC TEST

FUNCTIONAL TEST

• **TWELVE-MONTH FOLLOW-UP**

ISOKINETIC TEST

FUNCTIONAL TEST