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

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 90º, 60º, 30º
· Knee extension 90-40º
· Hamstring curls
· Patellar mobilization
· Proprioception training
· PRE Program – start with 1 lb per week

SWELLING CONTROL – Ice, compression, elevation

B. WEEK THREE

RANGE OF MOTION – Self ROM (4-5 times daily) emphasis on maintaining 0º 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 0-115º
· 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 0-115º
Quad strength 60% > contralateral side (ISOMETRIC TEST) [60º 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 0º passive extension

EXERCISES:
· SAME AS Week Three
· Initiate swimming program
· Initiate step-ups (start with 2” & gradually increase)
· PROM 0-130º
· 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 0-125º
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 90-40º
· Hamstring curls and stretches
· Bicycle for endurance
· Walking program
· Initiate isokinetic work 100-40º

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 0-125º >
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