Rehabilitation Following ACL PTG/QTG Reconstruction

I. Immediate Post-Operative Phase

A. POD 1:

Brace: EZ Wrap brace locked at zero degrees extension

Weight Bearing: Two crutches as tolerated

Exercises:
- Ankle pumps
- Passive knee extension to zero
- Straight leg raises
- Quad sets, glut sets
- Hamstring stretch

Muscle Stimulation: Muscle stimulation to quads (4 hours per day) during quad sets

Ice and Elevation: Ice 20 minutes out of every hour and elevate with knee in extension

B. POD 2 to 3:

Brace: EZ Wrap brace locked at zero degrees extension for ambulation, etc.

Weight Bearing: Two crutches, weight bearing as tolerated

Range of Motion: Patient out of brace 4-5 times daily to perform self ROM

Exercises:
- Knee Extension 90-40 degrees
- Intermittent ROM exercises continued
- Patellar mobilization
- Ankle pumps
- Straight leg raises (multi-plane)
- Standing weight shifts and mini squats [(0-30) ROM]
- Hamstring curls
- Continue quad sets/glut sets

Muscle Stimulation: Electrical muscle stimulation to quads (6 hours per day)

Ice and Elevation: Ice 20 minutes out of every hour and elevate with knee in extension
C. **POD 4 to 7:**

**Brace:** EZ Wrap brace locked at zero degrees extension for ambulation and unlocked for sitting

**Weight Bearing:** Two crutches weight bearing as tolerated

**POD 4 to 7 - Continued:**

**Range of Motion:** Patient out of brace to perform ROM 4-5 times daily

**Exercises:**
- Knee extension 90-40 degrees
- Intermittent PROM exercises
- Patellar mobilization
- Ankle pumps
- Straight leg raises (multi-plane)
- Standing weight shift and mini squats (0-30)
- Passive knee extension to 0 degrees
- Hamstring curls
- Proprioceptive and balance activities

**Muscle Stimulation:** Electrical muscle stimulation (continue 6 hours daily)

II. **Maximum Protection Phase (Week 2-3)**

**Criteria to Enter Phase II:**
1) Quad control (ability to perform good quad set and SLR)
2) Full passive knee extension
3) PROM 0-90 degrees
4) Good patellar mobility
5) Minimal effusion
6) Independent ambulation with one or two crutches

**Goals:**
1) Absolute control of external forces and protect graft
2) Nourish articular cartilage
3) Decrease fibrosis
4) Stimulate collagen healing
5) Decrease swelling
6) Prevent quad atrophy

A. **Week 2**

**Goals:** Prepare patient for ambulation without crutches
Brace: EZ Wrap locked at zero degrees for ambulation only, unlocked for self ROM (4-5 times daily)

Weight Bearing: As tolerated (goals to discontinue crutches 7-10 days post op)

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

Exercises:
- Muscle stimulation to quadriceps during quadriceps exercises
- Leg raises (4 planes)
- Hamstring curls

Week 2 Exercises - Continued
- Knee extension 90-40 degrees
- Mini squats (0-40) and weight shifts
- PROM 0-105 degrees
- Patellar mobilization
- Hamstring and calf stretching
- Proprioception training
- Well leg exercises
- PRE Program - start with 1 lb, progress 1 lb per week

Swelling Control: Ice, compression, elevation

B. Week 3

Brace: Discontinue locked brace. Brace opened 0-125 degrees for ambulation.

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

Full Weight Bearing: No crutches

Exercises:
- Same as week two
- PROM 0-115 degrees
- Bicycle for ROM stimulus and endurance
- Pool walking program (If incision closed)
- Initiate eccentric quads 40-100 (isotonic only)
- Leg press (0-60)
- Stairmaster
- Nordic Track

III. Controlled Ambulation Phase (Week 4-7)

Criteria to Enter Phase III:
1) AROM 0-115 degrees
2) Unchanged KT Test (+1 or less)
3) Minimal effusion

**Goals:** Control Forces during walking

**Brace:** Discontinue brace

**Range of Motion:** Self ROM (4-5 times daily), emphasis on maintaining 0° passive extension

**Exercises:**
- Same as week three
- PROM 0-130 degrees
- Initiate swimming program
- Initiate step ups (start with 2” and gradually increase)
- Increase closed kinetic chain rehab
- Increase proprioception training

**IV. Moderate Protection Phase (Week 7-12)**

**Criteria to Enter Phase IV:**
1) AROM 0-125 degrees
2) No change in KT Test (+2 or less)
3) Minimal effusion
4) No patellofemoral complaints
5) Satisfactory clinical exam

**Goals:**
1) Protect patellofemoral joint’s articular cartilage
2) Maximal strengthening for quads, lower extremity

**Isokinetic Test:** (Week 10)

**Exercises:**
- Emphasize eccentric quad work
- Continue closed chain exercises, step ups, mini squats, leg press
- Continue knee extension 90-40 degrees
- Hip abduction/adduction
- Hamstring curls and stretches
- Calf raises
- Bicycle for endurance
- Pool running (forward/backward)
- Walking program
- Stairmaster
- Initiate isokinetic work 100-40 degrees

**V. Light Activity Phase (Month 2 ½ - 3 ½)**
Criteria to Enter Phase IV:
1) AROM 0-125 degrees >
2) No change in KT scores (2+ or less)
3) Minimal/no effusion
4) Satisfactory clinical exam

Goals:
1) Development of strength, power, and endurance
2) Begin to prepare for return to functional activities

Tests: Isokinetic test (week 10-12 and 16-18)

Exercises:
• Continue strengthening exercises
• Initiate plyometric program
• Initiate running program
• Initiate agility drills
• Sport specific training and drills

Light Activity Phase (Month 2 ½ - 3 ½) - Continued:

Criteria to initiate running program:
• Satisfactory isokinetic test
• Unchanged KT results
• Functional test 70%>contralateral leg
• Satisfactory clinical exam

VI. Return to Activity Phase (Month 3 ½ - 4 ½)

Criteria to Enter Phase VI:
1) Isokinetic test that fulfills criteria
2) KT 2000 Test unchanged
3) Functional test 85%> contralateral leg
4) Proprioceptive test 100% of contralateral leg
5) Satisfactory clinical exam

Goals: Achieve maximal strength and further enhance neuromuscular coordination and endurance

Tests: Isokinetic test prior to return, KT 2000 test, functional test

Exercises:
• Continue strengthening program
• Continue closed chain strengthening program
• Continue plyometric program
• Continue running and agility program
• Accelerate sport specific training and drills