

# Orthopaedic Sports Specialists, P.C.

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## Anterior Cruciate Ligament & Posterior Cruciate Ligament Combined Reconstruction Surgery Rehabilitation

### I. Immediate Postoperative Phase

#### POD 1

Brace - Hinged knee brace - locked at zero degrees extension

Weight bearing - 2 crutches WBAT (weight should be added only as comfort permits)

#### Exercises

- \* ankle pumps
- \* quad sets
- \* straight leg raises (3 way) Hip flexion, abduction, adduction
- \* Knee extensions 60-0 degrees

Muscle stimulation - Muscle stimulation to quads (4 hours a day) during quad sets

CPM - zero to 60 degrees as tolerated (prn)

Ice and elevation - Ice 20 minutes out of every hour and elevate with knee in extension

### II. Maximum Protection (week 2-6)

**GOALS:** Absolute control of external forces to protect graft  
Nourish articular cartilage  
Decrease swelling  
Decrease fibrosis  
Prevent quad atrophy

#### A. Week Two

Brace - Hinged knee brace - locked at zero degrees  
Continue to perform intermittent ROM exercises

Weight bearing as tolerated 50% or greater

KT Test - Performed 15 (lb) max force (at 70 degrees flexion)

Exercise

- \* Multi angle isometrics 60, 40, 20 degrees
- \* quad sets
- \* knee extension 60-0 degrees
- \* Intermittent ROM 0-60 (4-5 times daily)
- \* Patellar Mobilization
- \* Well leg bicycle
- \* Proprioception training squats (0-45 degrees )
- \* Continue electrical stimulation to quads
- \* Leg press (0-60 degrees)
- \* Continue ice and elevation

**B: Week Four**

Brace - Hinged knee brace locked at zero

Full weight bearing - no crutches, one crutch if necessary

KT 1000 Test - performed

Exercises

- \* weight shifts
- \* mini-squats 0-45 degrees
- \* Intermittent ROM 0-90 degrees
- \* Knee extension 80-40 degrees (therapist discretion)
- \* Pool walking
- \* Initiate bike for ROM and endurance

**C: Week Five**

- \* Initiate pool exercises
- \* Fit for functional PCL brace (only if directed by physician - most cases)

**III. Controlled Ambulation Phase (week 6-9)**

**Criteria to Enter Phase III**

- \* AROM 0-115 degrees
- \* Quad strength 60% > contralateral side  
(isometric test) (60 degrees knee flexion angle)
- \* Unchanged KT Test (+1 or less)

**GOALS:** Control forces during ambulation

Brace - Discontinue locked brace, brace opened 0-125 degrees  
KT 1000 Test - (Week 6 & 8, 20 & 30 lb test)

Exercises

- \* same as week four
- \* PROM- 0-130 degrees
- \* Initiate swimming
- \* Initiate step-ups(start with 2' and gradually increase)
- \* Increase proprioception training

**IV. Moderate Protection Phase (Week 9-14)**

**Criteria to Enter Phase IV**

- \* AROM 0-125 degrees
- \* Quad strength 60% of contralateral leg (isokinetic test)
- \* No change in KT scores (+2 or less)
- \* Minimal effusion
- \* No patellofemoral complaints
- \* Satisfactory clinical exam

**GOALS:** Protect patellofemoral joint's articular cartilage  
Maximal strengthening for quads, lower extremity

KT 1000 Test - (Week 12)

Isokinetic Test - (Week 10-12)

Exercises

- \* Emphasis 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

**Light Activity Phase (Month 3-4)**

**Criteria to Enter Phase V-**

- \* AROM 0-125 degrees >
- \* Quad strength 70% of contralateral side, knee flexor/extensor rated 70-79%
- \* No change in KT scores (+2 or less)
- \* Minimal/no effusion
- \* Satisfactory clinical exam

**GOALS:**      Development of strength, power and endurance  
Begin to prepare for return to functional activities

**Test** - 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

**Criteria to initiate running program**

- \* Satisfactory isokinetic test
- \* Unchanged KT results
- \* Functional test 70% > contralateral leg
- \* Satisfactory clinical exam

**VI. RETURN TO ACTIVITY (Month 5-6)**

**Criteria to return to activities**

- \* Isokinetic test that fulfills criteria
- \* KT 1000 Test unchanged
- \* Functional Test 80% > contralateral leg
- \* Satisfactory clinical exam

**GOALS:**      Achieve maximal strength and further enhance neuromuscular coordination  
and endurance

**Test** - Isokinetic test prior to return, KT 2000,  
functional test

Exercises

- \* Continue strengthening programs
- \* Continue closed chain strengthening program
- \* Continue plyometric program
- \* Continue running and agility program
- \* Accelerate sport specific training and drills

**6 MONTH FOLLOW-UP**

- \* KT 2000 Test
- \* Isokinetic Test
- \* Functional Test

**12 MONTH FOLLOW-UP**

- \* KT 2000 Test
- \* Isokinetic Test
- \* Functional Test