

# Orthopaedic Sports Specialists, P.C.

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## REHABILITATION PROTOCOL: PCL-Double Bundle Reconstruction (with PTG-BTB and Hamstring/Quad Tendon autograft)

### I. Immediate Post-Operative Phase

#### POD-1

**BRACE** - EZ Wrap locked at zero degrees extension

Weight bearing - Two crutches as tolerated (less than 50%)

#### 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

Ice and elevation - Ice 20 minutes q hour and elevate with knee in extension

### II. Maximum Protection Phase (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 - EZ Wrap 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) only if MD orders

## Exercise

- \* Multi angle isometrics 60,40,20 degrees
- \* Quad sets
- \* Knee extension 60-0 degrees
- \* Intermittent ROM 0-60 (4-5 x 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 - EZ wrap locked at zero

Full weight bearing - No crutches; one crutch if necessary

#### Exercises

- \* Weight shifts
- \* Mini-squats 0-45 degrees
- \* Intermittent ROM 0-90 degrees
- \* Knee extension 60-0 degrees
- \* Pool walking
- \* Initiate bike for ROM and endurance

### **C: Week Five**

- \* Initiate pool exercises
- \* Fit for functional PCL brace

## **III. CONTROLLED AMBULATION PHASE (Week 7-12)**

**GOALS:**      Control forces during ambulation  
                      Increase quad strength

### **A. Week Seven**

Brace - Discontinue locked brace, brace opened  
0-125 degrees

### **Criteria for full weight bearing with knee motion:**

- a. AAROM 0-115 degrees
- b. Quad strength 70% of contralateral side (Isometric Test)
- c. No change in KT test
- d. Decrease joint effusion

Ambulation - with functional brace. (If not already ordered, fit and order a custom Functional knee brace at this time. Occasionally there will be too much swelling or quad atrophy in which case we delay ordering the brace for 2 - 4 more weeks.)

#### Exercises

- \* Continue all exercises stated above
- \* Initiate swimming
- \* Initiate vigorous stretching program
- \* Increase closed kinetic chain rehab

### **B. Week Eight**

#### Exercises

- \*Continue all exercises stated above

### **C. Week Twelve**

Ambulation - Discontinue with brace

Brace - Used for strenuous activities

KT 2000 Test - Performed

#### Exercises

- \* Begin Isokinetic 60-0 degrees ROM
- \* Continue mini-squats
- \* Initiate lateral step-ups
- \* Initiate pool running (forward only)
- \* Initiate hamstring curls (0-60, low weight)
- \* Bicycle for endurance (30 minutes)
- \* Begin walking program

#### **IV. LIGHT ACTIVITY PHASE (3-4 MONTHS)**

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

##### Exercises

- \* Begin light running program
- \* Continue isokinetic (light speed, full ROM)
- \* Continue eccentrics
- \* Continue mini-squats/lateral step ups
- \* Continue closed kinetic rehabilitation
- \* Continue endurance exercises

##### Tests

- \* Isokinetic Test (15th Week)
- \* KT 2000 Test (Prior to running program)
- \* Functional Test (Prior to running program)

##### Criteria for Running

1. Isokinetic Test Interpretation satisfactory
2. KT 2000 Test unchanged
3. Functional Test 70% of contralateral leg

#### **V- RETURN TO ACTIVITY (5-6 MONTHS) Advice to rehabilitation to competitive sports**

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

##### Exercises

- \* Closed kinetic rehabilitation
- \* High speed isokinetics
- \* Running program
- \* Agility drills
- \* Balance drills
- \* Plyometrics initiated

##### 6 MONTH FOLLOW-UP

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

##### 12 MONTH FOLLOW-UP

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