

**Orthopedic Associates of Hartford, P.C.**  
**J. Kristopher Ware, M.D/ Nicole Lavette, APRN**  
31 Seymour St #100      Date of Surgery:  
Hartford, CT 06106  
Phone: 860-244-1017, Fax: 860-524-8965  
[www.oahct.com](http://www.oahct.com)

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## **Post-Operative Rehabilitation Protocol:**

### **Posterior Cruciate Ligament Reconstruction**

#### **PHASE I: IMMEDIATE POST-OPERATIVE PHASE (WEEKS 0-2)**

GOALS: Decrease swelling, pain control, prevent quad atrophy.

#### **I. Immediate Post-Operative to Week 2:**

##### **A. General:**

- \* Brace locked in full extension. May remove for shower/bathing.
- \* Elevate knee above heart level often
- \* Cryotherapy unit or ice 20 minutes/hour

##### **B. Weight Bearing:**

- \* Partial weight bearing (50%) with two crutches

##### **C. Range of Motion Goals:**

- \* PROM 0°-60° with anterior drawer applied to tibia. Perform out of brace 4-5 times daily

##### **D. Treatment / Exercises:**

- \* Ankle pumps, Theraband ankle exercises
- \* VMO Quad sets with biofeedback
- \* Gentle patellar mobilization/scar mobilization
- \* Knee extensions 60° to 0°
- \* Multi-angle quad isometrics (60°, 40°, 20°)
- \* EMS especially important if patient unable to initiate quad sets or independent SLR
- \* Straight leg raises – flexion, abduction, adduction
- \* Gastroc/hamstring stretching

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**PHASE II – MAXIMUM PROTECTION PHASE (WEEKS 2-6)**

GOALS: Protect healing tissue, improve motion, decrease swelling, pain control, prevent muscle atrophy.

Enter Phase II if:

- ✓ Active ROM 0°-60°
- ✓ Able to perform SLR
- ✓ Minimal pain/swelling

**II. Weeks 2-4:**

**A. General:**

- \* Brace locked in full extension
- \* Elevate knee above heart level often
- \* Cryotherapy unit or ice 20 minutes/hour

**B. Weight Bearing:**

- \* Progress in WB status as tolerated in brace

**C. Range of Motion Goals:**

- \* Active/passive ROM 0°-60°, 4-5 times daily

**D. Treatment / Exercises:**

- \* Continue all previous treatment
- \* Well leg bicycle
- \* Proprioception training squats (0°-45°)
- \* EMS to quads
- \* Leg press 0°-60°

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**III. Weeks 4-5:**

**A. General:**

- \* Brace in full extension
- \* Ice 20 minutes/hour at patient's discretion

**B. Weight bearing:**

- \* WBAT, one crutch or no assistive devices as tolerated

**C. ROM goals:**

- \* PROM/AROM 0°-90°, 4-5 times per day. Apply anterior drawer to tibia during knee flexion

**D. Treatment / Exercises:**

- \* Continue with previous treatment
- \* Weight shifts
- \* Pool walking
- \* Mini squats 0°-45°
- \* Wall slides 0°-45°
- \* Initiate bike for ROM (0°-90°) and endurance
- \* Patellar mobilization
  - \* Cross friction massage
  - \* Biofeedback for neuromuscular VMO re-education
  - \* ***NO open chain concentric hamstrings***

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**IV. Weeks 5-6:**

**A. General:**

- \* Brace in full extension
- \* Ice 20 minutes/hour at patient's discretion

**B. Weight bearing:**

- \* WBAT

**C. ROM goals:**

- \* PROM/AROM 0°-90°. Apply anterior drawer to tibia during knee flexion

**D. Treatment / Exercises:**

- \* Continue with previous treatment
- \* Initiate pool exercises
- \* Fit for functional PCL brace

**PHASE III: MODERATE PROTECTION PHASE (WEEKS 6-12)**

**GOALS:** Increase strength, improve motion, protect reconstruction.

Enter Phase III if:

- ✓ Minimal pain/swelling
- ✓ ROM of 0°-90°
- ✓ Voluntary quadriceps control

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**V. Weeks 6-12:**

**A. General:**

- \* Discontinue locked brace, brace opened 0°-125°
- \* Ice 20 minutes/hour at patient's discretion

**B. Weight bearing:**

- \* WBAT with functional brace if AAROM 0°-115° and quad strength 70% of uninvolved leg.
- \* Brace ordering may be delayed 2-3 weeks if swelling or quad atrophy

**C. ROM goals:**

- \* PROM/AROM 0°-125°

**D. Treatment / Exercises:**

- \* Continue with previous treatment
- \* Initiate swimming, pool running
- \* Aggressive stretching program
- \* Increase closed kinetic chain rehab
- \* Isotonic squats – Smith Machine bar weight only
- \* Weight shifting forward, sideways, diagonally

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

GOALS: Develop strength, power, and endurance. Begin to prepare for return to functional activities.

Enter Phase IV if:

- ✓ Minimal pain/tenderness
- ✓ Minimal swelling
- ✓ Quad strength at least 75% of uninvolved leg
- ✓ Full or near full ROM

#### **VI. Months 3-4:**

##### **A. General:**

- \* Functional brace for exercise

##### **B. Weight bearing:**

- \* WBAT

##### **C. ROM goals:**

- \* Full PROM, AAROM, AROM

##### **D. Treatment / Exercises:**

- \* Continue with previous treatment
- \* Continue isokinetic program (light speed, full ROM)
- \* Continue eccentrics
- \* Chair squats, lateral step ups
- \* Continue closed kinetic chain program
- \* Improve endurance
- \* Isokinetic test at Week 15
- \* Functional test
- \* KT 2000 test
- \* Begin light running program if:
  - Satisfactory Isokinetic test
  - Satisfactory KT 2000 test
  - Functional test 70% of uninvolved leg

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#### **PHASE V: RETURN TO ACTIVITY PHASE (MONTHS 5-6)**

GOALS: Achieve maximal strength, enhance neuromuscular coordination and endurance.

Enter Phase V if:

- ✓ No pain/swelling
- ✓ Full ROM
- ✓ Strength at least 85% of uninvolved leg

#### **VII. Months 5-6:**

A., B., C. As above

##### **D. Treatment / Exercises:**

- \* Continue with previous treatment
- \* High speed isokinetics
- \* Running program
- \* Balance drills
- \* Plyometrics
- \* Broad jump, Vertical jump
- \* Agility limits

#### **\* Addendum**

This protocol provides general rehabilitation guidelines following Posterior Cruciate Ligament (PCL) reconstruction procedures. It is subject to modification depending on the degree of injury, the type and extent of associated surgical intervention, and your individual progress post-operatively. For any questions, please call my office at 860-244-1017.