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## **PCL Reconstruction protocol:**

PCL reconstruction protocol: The patient underwent Ax assisted PCL reconstruction. They will be wearing a Rebound PCL brace (Ossur or Donjoy) at all times for at least 5 months, except when showering. A return to regular activities and sports can be anticipated at 9-12 months post injury. If any additional collateral ligament or posterior lateral corner injury occurred and nonoperative treatment was decided upon then the duration of brace use is extended to at least 6 months.

### **Time following injury**

### **Specific protocol**

#### **Phase I**

#### **0-6 weeks after surgery**

#### **Precautions PRICE (Protect, Rest, Ice, Compress, Elevate)**

- Avoid hyperextension (12 weeks)
- Prevent posterior tibial translation (12 weeks)
- Isolated hamstring exercises should be avoided for 4 months
- Weight bearing
  - Non-weight bearing with crutches (6 weeks)
- Range of motion (ROM)
  - Prone passive ROM from 0 to 90 for the first 2 weeks, and then progress to full ROM as tolerated
- Brace
  - T scope hinged knee brace (for 3 days) locked in extension until patient can transition into Rebound brace
  - PCL Rebound brace to be worn at all times, including rehabilitation and sleep (minimum of 24 weeks)

#### **Goals**

- PCL ligament graft protection
- Edema reduction to improve passive ROM and quadriceps activation
- Address gait mechanics
- Patient education

#### **Therapeutic exercise**

- Patellar mobilizations
- Prone passive ROM

- Quadriceps activation
  - Quadriceps sets
  - Straight leg raises (SLR) once the quadriceps are able to lock joint in terminal extension and no lag is present
- Gastrocnemius stretching
- Hip abduction/adduction
- Upper body and core strength as appropriate

## Phase II

### 6-12 weeks after surgery

#### Precautions

- Continued avoidance of hyperextension and isolated hamstring activation
- Prevent posterior tibial translation
- Weight bearing
  - Progress to weight bearing as tolerated (WBAT)
- Range of motion
  - Full ROM, supine and prone ROM after 6 weeks
  - Caution to not be over-aggressive with flexion creating stress on the repair
- Brace
  - PCL Rebound brace to be worn at all times

#### Goals

- PCL ligament protection
- Continue ROM as tolerated
- Address gait mechanics during crutch weaning
- Double leg strength through ROM (no greater than 70 knee flexion) and single leg static strength exercises
- Reps and set structure to emphasize muscular endurance development (3 sets of 20 reps)

#### Therapeutic exercise

- Continue PRICE protocol
- Continue exercises as weeks 1-4
- Gastrocnemius and light hamstring stretching
- Weight shifts to prepare for crutch weaning
- Pool walking to assist with crutch weaning
- Squat progression (squat → squat with calf raise → squat with weight shift)
- Double leg press (0-70 knee flexion)
- Hamstring bridges on ball with the knees extended
- Stationary bike with zero resistance when ROM > 115
- Light kicking in pool

**Phase III****13–18 weeks after surgery****Precautions**

- Patient to remain in Rebound PCL brace for all activities
- Full weight bearing in brace
- Full passive ROM
- Avoid isolated hamstring exercise until week 16

**Goals**

- Joint protection
- Address gait mechanics
- Progressive weight-bearing strength, including progressive hamstring strengthening
- Can progress leg press and knee bends past 70° knee flexion after 16 weeks

**Therapeutic exercise**

- Continue as in previous stages
- Double leg press 0–70 with progression to single leg
- Balance squats
- Squat progression
- Single leg bridges starting during week 16
- Proprioceptive and balance exercises
- Progress stationary bike resistance and duration

**Phase IV****19–24 weeks after surgery****Precautions**

- Patient to remain in Rebound PCL brace for all activities

**Goals**

- Continue to build strength, and single leg endurance for all lower extremity musculature with increasing emphasis to developing power

**Therapeutic exercise**

- Continue OKC and CKC strength and endurance work with progressive weight. Initiate initial sport-specific drills near end of this phase
- Clinical examination and/or PCL stress radiographs to objectively verify healing of PCL after week 24

**Phase V****25–36 weeks after surgery****Goals**

- Patient education and return to activity progressions

-Patients can be weaned out of the Rebound brace starting at 24 weeks if they are ready

***Therapeutic exercise***

- Initiate absorption activities
- Continue strength and endurance exercises, and OKC for quadriceps and hamstrings
- Straight line jogging progression:  
Outline:  
Week 1: 4 min walk; 1 min jog for 15–20 min  
Week 2: 3 min walk; 2 min jog for 20 min  
Week 3: 2 min walk; 3 min jog for 20 min  
Week 4: 1 min walk; 4 min jog for 20 min
- Once running progression is completed, continue single plane agility with progression to multi-planar agility
- Sport-specific drills

**Phase VI**  
**37+ weeks after surgery**

- Continue exercises and protocol from weeks 25–36
- Set and reps structure to emphasize muscular power development (3 sets of 4–8 reps)
- Sport-specific agility exercises
- Non-contact return to play following clearance by physician at 9 months
- Full contact return to play** when specific return to sports criterion met and 9 months since surgery:
  1. Full active ROM Greater than 85–90 % normal quadriceps strength
  2. No evidence of instability or giving way
  3. Greater than 90 % function on return to sports testing
  4. Athlete is mentally ready to return to sport and not timid or fearful of re-injury