

## **PCL Reconstruction +/- MCL or Posterolateral Corner Repair or Reconstruction**

### **DETAILED BRACE AND PHYSIOTHERAPY PRESCRIPTION:**

#### **PHASE 1: Immediate Post-operative Phase** (Approximate timeframe: 6-8 weeks)

- Full knee extension ROM
- Emphasize quads recovery > hamstring recovery (opposite of ACL recon)
- Hinge knee brace 0-45 for weeks 3-4, 0-70 weeks 5-6, 0-90 weeks 7-8
- Good quadriceps control ( $\geq 20$  no lag SLR)
- Minimize pain
- Minimize swelling
- Normal gait pattern
- Knee brace: Patient will use hinge knee brace first 6 weeks minimum
- Exercise Suggestions:
  - Prone passive terminal extension ( $40^\circ - 0^\circ$ )
  - Quadriceps re-education (electrical stim, biofeedback).
  - Extension: Low load, long duration (~5 minutes) stretching (e.g., heel prop, prone hang minimizing co-contraction and nociceptor response)
  - Flexion: Wall slides, heel slides, seated assisted knee flexion, bike: rocking-for-range
  - Patellar mobilization (medial/lateral mobilization initially followed by superior/inferior direction while monitoring reaction to effusion and ROM)
  - Quadriceps sets emphasizing vastus lateralis and vastus medialis activation
  - SLR emphasizing no lag
  - Standing resistance band terminal knee extension
  - Quad/ham co-contraction supine
  - Prone Hip Extension
  - Ankle pumps with resistance band
  - Heel raises (calf press)
- CRITERIA FOR PROGRESSION TO PHASE 2
  - no lag SLR
  - Normal gait
  - Crutch D/C
  - ROM: no greater than  $5^\circ$  active extension lag,  $90^\circ$  active flexion

#### **PHASE 2: Early Rehabilitation Phase** (Approximate timeframe: weeks 8 to 15)

- Full ROM
- No brace for physio, continue to wear brace on uneven ground
- May move into custom PCL brace
- Improve muscle strength
- Progress neuromuscular retraining
- Exercise Suggestions:

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- ROM
- Low load, long duration (assisted prn)
- Heel slides/wall slides
- Heel prop/prone hang (minimize co-contraction / nociceptor response)
- Bike (rocking-for-range → riding with low seat height)
- Flexibility stretching all major groups
- Quad sets
- Mini-squats/wall-squats
- Steps-ups
- Knee extension from 90° to 40°
- Leg press from 90° to 40°
- Hamstring and hip progressive resistance
- Isometrics at 60°
- Resistive SLR with resistance band
- Standing heel raises: progress from double to single leg support
- Seated calf press against resistance
- Bike
- Elliptical trainer
- Stairs
- Walking on treadmill
- CRITERIA FOR PROGRESSION TO PHASE 3
  - Full ROM
  - Minimal effusion/pain
  - Functional strength and control in daily activities

**PHASE 3: Strengthening & Control Phase** (Approximate timeframe: weeks 16 through 20)

- Maintain full ROM
- May DC brace (unless has PCL custom brace)
- Light jogging straight forward without pain or swelling
- Exercise Suggestions:
  - Squats
  - Leg press
  - Hamstring curl
  - Knee extension 90° to 0°
  - Step-ups/down
  - Lunges
  - Wall squats
  - Wobble board / rocker board / roller board
  - Perturbation training
  - Varied surfaces
  - Straight line light jogging on treadmill or in a protected environment (NO cutting or pivoting)
  - Bike
  - Elliptical trainer
  - stairs
- CRITERIA FOR PROGRESSION TO PHASE 4

- Light jogging without pain or swelling
- Neuromuscular and strength training exercises without difficulty

**PHASE 4: Advanced Training Phase** (Approximate timeframe: weeks 21 to 28)

- Running straight forward at 75% speed without difficulty
- Jumping without difficulty
- Hop tests at 75% contralateral values
- Aggressive Strengthening
- Exercise Suggestions:
  - Squats
  - Lunges
  - Plyometrics
  - Agility Drills
  - Shuffling
  - Hopping
  - Vertical jumps
  - Wobble board / rocker board / roller board
  - Perturbation training
  - Varied surfaces
  - Jogging
  - Other cardiopulmonary exercises as mentioned previously
- CRITERIA FOR PROGRESSION TO PHASE 5
  - Maximum vertical jump without pain or instability
  - 75% of contralateral on hop tests

**PHASE 5: Return-to-Sport Phase** (Approximate timeframe: weeks 29 to 40)

- 75% speed patterns/change of direction
- 85% contralateral strength
- 85% contralateral on hop tests
- Sport specific training without pain, swelling or difficulty
- Exercise Suggestions:
  - Aggressive Strengthening
  - Squats
  - Lunges
  - Plyometrics
  - Sport Specific Activities
  - Interval training programs
  - Full skating, non contact drills
  - Running patterns in football
  - Sprinting
  - Change of direction
  - Pivot and drive in basketball
  - Kicking in soccer
  - Spiking in volleyball
  - Skill / biomechanical analysis with coaches and trainers
- RETURN-TO-SPORT EVALUATION RECOMMENDATIONS: >40 weeks

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- Hop tests (single-leg hop, triple hop, cross-over hop, 6 meter timed-hop)
- Isokinetic strength test
- Vertical jump
- Deceleration shuttle test
- RETURN-TO-SPORT CRITERIA:
  - No functional complaints
  - Confidence when running, cutting, jumping at full speed
  - 85% contralateral values on hop tests