

# Hays Medical Center

## PCL Injury – Non-Operative

### General Principles:

This protocol was designed to provide the rehabilitation professional with a guideline of care. It should be stressed that this is only a protocol and should not be a substitute for clinical decision making regarding a patient's progression. Actual progression should be individualized based upon your patient's physical examination, progress, and presence of any complications.

The non-operative protocol will also be used also for pre-operative treatment of PCL injuries.

**NOTE: Protocol may need to be modified if multiple ligaments are involved.**

**Ligament testing should only be performed by the physician throughout the protocol.**

### PHASE I (Immediate)

#### Week 1 - 6

##### Orthotics-

1. Knee immobilizer only as needed
2. Hinged PCL brace for exercises and daily activity

##### Weight Bearing-

1. Progress as tolerated with normal gait

##### Modalities (PRN)-

1. Ice, Electrical Stimulation
2. Compression and elevation as needed for control of pain and swelling
3. Ice for 20 minutes follow exercises throughout protocol
4. May use electrical stimulation if needed for neuromuscular re-education
5. Moist heat or pulsed ultrasound after 48 hours

##### ROM-

1. Wk 1-2: 0-90 degrees – ROM to be performed prone ONLY  
Wk 3-6: Progress gradually as tolerated
2. Take special care to support the tibia to avoid stressing the ligament

##### Exercises-

1. Quad sets
2. Knee extension stretch in prone – Avoid hyperextension
3. Straight Leg raises
  - a. All planes (be aware if other ligaments are involved w/ PCL injury)
4. Hip abduction / adduction exercises
5. Isometric Quads at 60, 40, and 20° of flexion
6. Stationary bike when ROM allows
7. Core muscle training as indicated
8. NO isolated hamstring exercises

# PCL Injury – Non-Operative

## PHASE II (Intermediate)

### Week 7 - 12

#### Orthotics-

1. Continue use of hinged PCL brace at all times

#### Weight Bearing-

1. Should be progressing to full weight bearing as tolerated

#### Modalities (PRN)-

1. Continues Phase I modalities only as needed

#### ROM-

1. Full ROM, avoid hyperextension

#### Exercises-

1. Stationary bike when ROM allows
2. Shuttle / Leg Press (limited 0-70 degrees)
  - a. Bilateral only
  - b. Progress resistance as tolerated
3. Resisted Calf Raises
4. Closed Chain strengthening
  - a. Bilateral squat progression (limited 0-70)
  - b. Unilateral exercises (limited 0-30)
  - c. Closed chain hip strengthening as tolerated
  - d. Step ups / Step downs progression
5. Balance / Proprioception
  - a. Bilateral progressing to unilateral
  - b. Progress to eyes closed, unstable surface
6. Single leg deadlift with knee extended
7. Incline treadmill walking
8. Aquatics

# PCL Injury – Non-Operative

## PHASE III (Strengthening)

### Week 13 – 18

#### Orthotics-

1. Continue use of hinged PCL brace for rehab and functional activities only
2. Discontinue use of brace for daily activity

#### Weight Bearing-

1. Full weight bearing as tolerated

#### ROM-

1. Maintain full active and passive ROM

#### Exercises-

1. Continue Phase II exercises as tolerated progressing resistance and repetitions
2. Begin isolated hamstring exercise, progress slowly
3. Lunge progressions (Split squat, forward, backward, walking)
4. Unilateral Leg Press / Shuttle
  - a. Progress resistance as tolerated
5. Resisted Calf Raises
6. Closed Chain strengthening
  - a. Bilateral weighted progressions can progress past 0-70
7. Single leg bridges
8. May begin jogging progression when good quad control

## PHASE IV (Advanced Strengthening)

### Week 19+

#### Orthotics-

1. Continue use of PCL brace for high risk activity and exercise until notified by physician

#### Exercises-

1. Progress Phase III exercises as tolerated
2. Initiation of sports activity
  - a. Plyometrics
  - b. Shuttle Bounding
  - c. Sport-specific agility
  - d. See Interval sport and Running programs
  - e. DIME warmup
3. Criteria to be released for return to sport
  - a. Isokinetic Test at 180, 240, and 300 degrees per second for physician review and full release to sport activity (Goal: 90% strength or better)
  - b. Lower extremity functional tests at 90% or better (See Lower extremity functional test protocol and form)

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