

**I. MAXIMAL PROTECTION PHASE**

Goals: Early protected ROM  
Prevent quadriceps atrophy  
Decrease effusion/pain

**A. Time of Injury: Day One**

- Ice, compression, elevation
- Knee hinge brace non-painful ROM; if needed
- Crutches, weight bearing as tolerated
- Passive Range of Motion/Active Assistive Range of Motion to maintain ROM
- Electrical muscle stim to quads (8 hours a day)
- Isometrics Quads: Quad Sets, Straight Leg Raises (Flex)

**B. Day Two**

- Continue above exercises
- Quadriceps Sets
- Straight Leg Raises (Flexion, Abduction)
- Adduction isometrics
- Hamstring Isometric Sets
- Well Leg Exercises
- Whirlpool for ROM (Cold for first 3-4 days, then warm)
- High Voltage Stimulation to control swelling

**C. Day Three - Seven**

- Continue above exercises
- Crutches - weight bearing as tolerated
- ROM as tolerated
- Eccentric Quad work
- Bicycle for ROM stimulus
- Resisted Knee Extension with electrical muscle stim
- Initiate Hip Add, Ext
- Initiate Mini-squats
- Initiate Leg Press Isotonics
- Brace worn at night, brace during day as needed

## **II. MODERATE PROTECTION PHASE**

### Criteria for Progression:

1. No increase in instability
2. No increase in swelling
3. Minimal tenderness
4. PROM at least 10-100°

Goals: Full painless ROM  
Restore strength  
Ambulation without crutches

### **A. Week Two**

- Continue strengthening program with PRE's
- Continue electric muscle stim to quads during isotonic strengthening
- Continue ROM exercise
- Emphasize closed kinetic chain exercises; lunges, squats, lateral lunges, wall squats, lateral step-ups
- Bicycle for endurance
- Water exercises, running in water forward and backward
- Full ROM exercises
- Flexibility exercises, hamstrings, quads, IT Band, etc.
- Proprioception training (balance drills)
  - Weight shifts
  - Tilt board squats
- Stairmaster endurance work

### **B. Days Eleven - Fourteen**

- Continue all exercises in week two
- PRE's emphasis quads, medial hamstrings, hip abduction
- May Initiate Isokinetics, sub-maximal → maximal fast contractile velocities
- Begin running program if full painless extension and flexion are present

## **III. MINIMAL PROTECTION PHASE**

### Criteria for Progression:

1. No instability
2. No swelling/tenderness
3. Full painless ROM

Goals: Increase strength and power

**Phase III - Continued:**

**A. Week Three**

- Continue Strengthening Program
  - Wall Squats
  - Vertical squats
  - Lunges
  - Lateral Lunges
  - Step ups
  - Leg Press
  - Knee Extension
  - Hip ABD/ADDuction
  - Hamstring Curls
  - Emphasis:
    - Functional Exercise Drills
      - Sport cord lunges, cone drills
    - Fast Speed Isokinetics
    - Eccentric Quads
    - Isotonic Hip ADD, Medial Hamstrings
- Isokinetic Test
- Proprioception Training
- Endurance Exercise
- Stationary Bike 30-40 minutes
- Nordic Trac, Swimming, etc.
- Initiate Agility Program, Sport Specific Activities