Stage 1: Maximum Protection (0-2 weeks)

1. Lateral buttress in post-op dressing to stabilize patella
2. Ice and modalities to reduce pain and inflammation
3. Use crutches for 5-7 days to reduce swelling. The patient may discontinue crutches when they can walk without pain and without gait deviations.
4. Elevate the leg above the heart for the first 3-5 days.
5. Initiate patellar mobility exercises in all planes, emphasis on lateral tilt
6. Begin full passive/active knee ROM
7. Quad sets
8. Multi-plane open chain SLR
9. Gait re-education

Stage 2: Progressive Stretching and Early Strengthening (2-6 weeks):

1. Maintain program as per week 0-2
2. Continue with patella mobility exercises
3. Continue with modalities to control inflammation
4. Initiate global lower extremity stretching
5. Begin stationary bike, treadmill, and/or elliptical trainer as strength and swelling permit, avoiding impact activity.
6. Begin bilateral closed kinetic chain strengthening progressing to unilateral as tolerated.
7. Promote normal arthrokinematics with all closed chain exercises.
8. Implement reintegration exercises emphasizing core stability.
9. Begin closed chain multi-plane hip strengthening
10. Manual lower extremity PNF patterns
11. Proprioceptive drills emphasizing neuromuscular control

Stage 3: Advanced Strengthening and Proprioception Phase (6-10 weeks)

1. Modalities as needed
2. Continue with Stage 2 exercises as indicated
3. Advance time and intensity on cardiovascular program – no running
4. Begin functional cord resistance program
5. Initiate gym strengthening – bilateral progressing to unilateral as tolerated. Leg press, squats, lunges (protected range), hamstring curls, ab/adduction, calf raises
6. Begin pool running at weeks 8-10
Stage 4: Advanced Strengthening and Early Plyometric Drills (10-12 weeks)

1. Begin running program at week 10-12, this is based on quadriceps function, strength, swelling, and endurance
2. Begin light bilateral plyometric drills.

Stage 5: Return to Sport functional Program (12-16 weeks)

1. Sport-specific functional drills
2. Continue with aggressive lower extremity strengthening, cardiovascular training, and flexibility
3. Progress plyometric exercises to unilateral as tolerated
4. Return to sport strength and functional tests (Biodex as needed, single leg balance reach and single leg hop all 85% of uninvolved leg)