# General Considerations:
- Progression should be based on careful monitoring by the Physical Therapist of the patient's functional status.
- Early emphasis on achieving full extension equal to the opposite side (including hyperextension within normal range, 10°).
- Avoid direct palpation and mobilization on incisions/portals for 4 weeks.
- Exercises should focus on proper patella tracking and recruitment of the Vastus Medialis Oblique (VMO).
- Exercises should focus on lumbopelvic stabilization in all planes of motion and all transfers.
- No resisted leg extension machines (isotonic or isokinetic) at any point in the rehab process.
- No cutting or twisting until cleared by Sports Test I.
- Patient should be well aware that healing and tissue maturation continue to take place for 1 year after surgery.
- Patients are given Sports Test I at 3 months, Sports Test II at 6 months, Sports Test III at 1 year.

## PHASE I. (Status-post Weeks 1-2): Max protection phase

| Nurse apt on day 2 for dressing change and review of home program.  
| Ice/elevation every 2 hours for 15 minutes to minimize edema and promote healing (please refer to Icing handout).  

### Manual:
- Continue with soft tissue treatment to quads, posterior musculature, suprapatellar pouch.
- Popliteal fossa, iliotibial band and Hoffa’s fat pad. Extensive patellar mobilization.
- No direct scar mobilization x 4 weeks.

### Exercise:
- Seated edge of bed dangle for knee flexion; prop for knee extension.
- Quad sets/straight leg raises, hip abduction, calf presses, glut sets, and core exercises.

### Goals:
- Range of motion: 0-90 degrees.
- Gait weight-bearing as tolerated; Good quality gait with least amount of Assistive Device.

## PHASE II (Status-post Weeks 2-4): Moderate protection phase

| Nurse apt for suture removal on day 14.  
| Walking for exercise for 15-20 minutes if no limp or swelling present.  

### Manual:
- Continue with soft tissue treatment, effleurage for edema.
- Extensive patellar mobilization.
- No direct scar mobilization x 4 weeks.

### Exercise:
- Range of motion and functional strengthening exercises: Squats/Leg Press, Bridges/Hamstring Curls.
- 2” step up/down, intense core training.
- Aerobic exercises as tolerated (bilateral stationary bike, Elliptical, arm bike).

### Goals:
- Active range of motion equal extension to uninvolved side and flexion to 120 degrees. No edema.
- Full weight-bearing; normal gait without assistive device.
- Single leg balance 60 seconds on level surface.
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**PHASE III. (Status-post Weeks 4-6): Return to function/strengthening phase**

| MD appt at 4 weeks.  
Walk up to 1 hour for exercise.  
**Manual:** -Continue with soft tissue mobilization. Apply direct scar tissue mobilization; can use instruments/tools.  
**Exercise:** -Emphasize self stretching to both lower extremities.  
- Increase intensity of resistance exercises (i.e. standing resisted squats, lunges, etc).  
- Introduce eccentric exercises (4-6” steps).  
- Increase single leg strength, challenge proprioceptive training.  

**Goals:**  
Full Range Of Motion equal to uninvolved leg.  
Perform 4 inch step down.  
Bike with minimal resistance for 20-30 minutes (in saddle), walking for 30 minutes, Elliptical, water-walking.

| **PHASE IV (Status-post Weeks 6-10): Progressive Activity phase**  
**Manual:** -Soft tissue mobilization and joint mobilization as needed.  
**Exercise:** - Add lateral training exercises (lateral step ups, lunges, step overs).  
Initiate tri-planar activities with the exception of closed-chain rotation (pivots).  
-No cutting or pivoting.  

**Goals:**  
Activities should be pain-free:  
Able to descend stairs, double leg squat hold for >1 minute.  
Bike >30 minutes with moderate resistance, Elliptical with interval training, Flutter-style for swimming (no flippers, no breast-stroke kick).

| **PHASE V (10-16 weeks): Training for Sport phase**  
MD visit at 3 months.  
-Complete sports Test I and return to pre-running program at 3 months (see handout for specific details)  
-Fit for functional knee brace if requested by MD.  
-Incorporate bilateral, low level jumping exercises.  
-Continue to increase strength, endurance, and add sport specific training drills.  

**GOALS:**  
Pass Sports Test I.

| **PHASE VI (16 weeks +) Return to Sport phase**  
MD visit at 6 months.  
-Sport test 2 at 6 months. Initiate return to run program.  
-Implementation of jump training, agility training. Education of “at risk sports”.  
- After 6 months add lateral plyometric type drills, agility ladder  

**GOALS:**  
Initiate sagittal plane plyometrics, work towards single leg plyometrics.  
Clearance by MD and pass Sportsmetric training before returning to full athletics.