I. Phase I: Maximum Protection Phase (Weeks 1-6)

Goals:
1) Control inflammation/effusion
2) Allow early healing
3) Full passive knee extension
4) Gradually increase knee flexion
5) Independent quadriceps control

A. Stage 1: Immediate post-surgery days 1 through 10

- Ice, compression, elevation
- Brace locked at 0 degrees for ambulation and sleeping only
  - Brace may be unlocked while sitting, etc.
- ROM (passive 0-90)
- Patellar mobilizations
- Stretch hamstrings and calf
- Strengthening exercises:
  - Quad sets
  - SLR flexion
  - Hip Abd/Adduction
- Weight bearing: Toe touch with two crutches
- Avoid active knee flexion

B. Stage 2: Weeks 2 through 4

- Continue use of ice and compression
- Brace locked for ambulation and sleeping
- ROM guidelines:
  - Gradually increase PROM as tolerated
  - Week 2: 0-100 degrees
  - Week 3: 0-110 degrees
  - Week 4: 0-120 degrees
- Weight bearing guidelines (Continue to lock brace)
  - Week 2: 25-50% WB
  - Week 3: 50-75% WB
  - Week 4: FWB as toleration
- Continue PROM exercises and stretching
- Strengthening exercises:

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C. Stage 3: Weeks 5 through 6

- Weight bearing: as tolerated
- Initiate CKC exercise such as:
  - ½ squat 0-45 degrees
  - Leg press 0-60 degrees
  - Wall squat 0-60 degrees
- Initiate proprioception training
  - Tilt board squats
  - Biodex stability
- Continue CKC exercise
- Initiate hip abd/adduction and hip flexion/extension on multi-hip machine

II. Phase II: Moderate Protection Phase (Weeks 7-12)

  Goals:
  1) Establish full PROM
  2) Diminish swelling/inflammation
  3) Re-establish muscle control
  4) Promote proper gait pattern

A. Weeks 7-10

- Continue use of ice and compression as needed
- Continue ROM and stretching
  - Week 7: PROM 0-125/130 degrees
- Continue use of brace for 8 weeks
- Progress strengthening exercises
  - Leg press 0-70 degrees
  - Knee extension 90-40 degrees
  - Hip abd/adduction
  - Wall squats 0-70 degrees
  - Vertical squats 0-60 degrees
  - Lateral step-ups
  - Front step downs
- Balance/proproprioeception training
  - Biodex stability
I. Prehabilitation Phase (Weeks 1-9)
   
   o Squats rocker board
   o Cup walking
   • Bicycle (if ROM permits)
   • Pool program

   *Avoid twisting, pivoting, running and deep squatting

B. Weeks 10-12
   
   • Continue all exercises listed above
   • Initiate “light” hamstring curls
   • Initiate toe calf raises

III. Phase II: Controlled Activity Phase (Weeks 13-18)

   Goals:
   1) Improve strength and endurance
   2) Maintain full ROM
   3) Gradually increase applied stress

A. Week 13:
   
   • Continue all strengthening exercises listed above
   • Initiate stair stepper
   • Toe calf raises
   • Progress balance training
   • Progress to isotonic strengthening program
   • Initiate front lunges
   • Initiate pool running (forward and backward)
   • Initiate walking program

B. Week 16:
   
   • Continue strengthening and stretching program
   • Progress walking program
   • Initiate running and cutting in pool

IV. Phase IV: Return to Activity Phase (Months 6-8)

   Goals:
   1) Improve strength and endurance
   2) Prepare for unrestricted activities
   3) Progress to agility and cutting drills

   Criteria to Progress to Phase IV:
   1) Full non-painful ROM
   2) No pain or tenderness
   3) Satisfactory clinical exam
4) Satisfactory isokinetic test

**Exercises:**
- Continue and progress all strengthening exercises and stretching drills
  - Progress isotonic program
  - Wall squats
  - Leg press
  - Lateral step-ups
  - Knee extensions 90-40 degrees
  - Hamstring curls
  - Hip abduction/adduction
  - Bicycle, stair stepper, elliptical machine
- Deep squatting permitted at 5 ½ months
- Initiate straight line running at 6 months
- Initiate pivoting, cutting, and agility training at 7 months
- Gradually return to sports