

**AUTOLOGOUS CHONDROCYTES REPAIR
REHABILITATION PROTOCOL**

EARLY PHASE (0 TO 10 WEEKS):

- Weight Bearing:
 - May fully weight bear with leg locked in knee brace
 - Use at least one crutch for 8 weeks

- Range of Motion:
 - CPM 0-30, progress 5 to 10 degrees per day provided that swelling does not increase
 - Rest of ROM. accomplished by hanging over a bed, to increase bending
 - Goal is to achieve 90 degrees by four weeks
 - Work on ROM 8-10 hours a day first 2 weeks in two hour increments
 - DO NOT push into pain
 - no cycling
 - Maintain flexibility of non involved leg

- Strengthening:
 - May begin isometrics static quads, SLR, mutihip machine
 - Work to achieve pain free full knee extension
 - Perform resistive exercises, rubber tubing, weights in pain free ROM

TRANSITIONAL PHASE (8-12 WEEKS) - may overlap with first stage:

- Weight Bearing:
 - Progression to cane (by 4 to 5 months post-operative cane is discarded)
 - May start walking program if independent on treadmill at 12 weeks retro walking or on incline

- Range Of Motion
 - Full ROM is achieved
 - Maintain extension with passive stretching
 - Plan to gain full motion during this phase: moving/mobilizing the soft tissue skin, scars, etc) and the patella

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- Strengthening
 - Gradual return to full weight bearing activities
 - Closed chained activities are implemented isometric holds less than 30 degrees
 - No dynamic repetition training until fourth month
 - Be careful that patello-femoral pain does not increase VMO strengthening, squeezing soccer ball between legs while performing wall slides
 - Pain free exercise

MID PHASE (3 - 6 MONTHS):

- Walking and Weight Bearing
 - Should be full weight bearing by 4th month
 - Treadmill work
- Range of Motion
 - Maintain full ROM active/passive motion, patellar mobility
- Strengthening
 - Increase work loads to knee in sagittal plane
 - Advanced Gym (leg sled, press, curls, mutihip, abductor/adductor)
 - Non gym (squats, wall hold, lunge, hamstring, calf exercises)

FINAL PHASE (5 - 12 MONTHS):

- Weight Bearing And Walking
 - Initiation impact training
 - Fast walking/jogging 2 min walk/2 min jog
- Strengthening
 - Create independent gym program
 - Plyometrics

TIMELINE FOR ACTIVITIES

- 6 MONTHS - Low impact activities (skating, rollerblading, cross country skiing, cycling)
- 8 MONTHS - Repetitive impact activities (jogging, running, aerobic classes)
- 12 MONTHS - High impact activities (Tennis, Basketball)