



PHYSICAL THERAPY SECTION

AUTOLOGOUS CULTURED CHONDROCYTES FOR IMPLANTATION CARTICEL®

*Revised November 2016
Adapted from William Beaumont Army Medical Center*

Post-op Days 1 – 14

Dressing – POD 1: Debulk dressing, TED Hose in place
– POD 2: Change dressing, keep wound covered, continue TED Hose
– POD 7-10: Sutures out, D/C TED Hose when effusion resolved

Brace – Locked in extension
Crutches – non weight bearing (NWB)
CPM – 0-30 degrees (2-hour increments for 8-10 hours/day)
AAROM 0-30 degrees within pain limits
Patellar mobilization (teach patient)
Calf pumping
Passive extension with heel on bolster or prone hangs
Electrical stimulation in full extension with quad sets and SLR
Quad sets, Co-contractions quads / HS in extension
Straight leg raise (SLR) x 4 on mat (in brace) – parallel bars if poor quad control
Gentle Hamstring, ITB stretching
Ice pack with knee in full extension after exercise

Goals

Pain / effusion control
Good quad control

Weeks 2 – 4

Brace – Locked in extension
Crutches – Flat foot weight bearing (FFWB)
Avoid twisting/pivoting on involved leg
Continue appropriate previous exercises
Scar massage when incision healed
CPM – 0-40 degrees
AAROM, AROM 0-40 degrees
SLR x 4 on mat (no brace) – Add light weight above knee if good quad control
Pool therapy – Chest deep walking with aqua-jogger floatation device

Goals

ROM 0-40 degrees
No extensor lag

Weeks 4 – 6

Brace – 0-30 degrees, continue to open to available range
Crutches – Partial weight bearing (PWB)
Continue appropriate previous exercises
CPM – Add 5 degrees per day up to 90 degrees
AAROM, AROM 0-90 degrees
Pool therapy – Kickboard with gentle flutter kick from hip, knee in extension

Goal – ROM 0-90 degrees

Weeks 6 – 8

Brace – 0-90 degrees, continue to open to available range
Crutches – PWB
Continue appropriate previous exercises
CPM – D/C
AAROM, AROM 0-120 degrees
Isometric co-contractions at 0, 30, 60, 90 degrees
Stationary bike for ROM
Pool therapy – Chest deep running

Goals

ROM 0-120 degrees
No effusion

Weeks 8 – 10

Brace – D/C when good quad control
Crutches – Weight bearing as tolerated (WBAT) (D/C when gait is normal)
– **Avoid twisting/pivoting on involved leg**
Continue appropriate previous exercises
PROM, AAROM, AROM to regain full motion
SLR x 4 with weight below the knee if quad control adequate
Weight shifts in full extension
Stationary bike for progressive resistance and endurance
Pool therapy – Unrestricted

Goal – Full ROM

Weeks 10 – 12

Continue appropriate previous exercises
Avoid twisting/pivoting on involved leg
Isometric open chain co-contractions at varying angle
Total Gym – Mini squats (level 3-5) – No flexion > 45 degrees
– Passive flexion to 90 degrees (push up with opposite leg)
Leg press with light resistance 0-30 degrees
Hamstring curls – Carpet drags or rolling stool (closed chain)
Heel raises – Double leg, progress to single leg
Proprioceptive training – Double leg BAPS for weight shift
– Progress to single leg BAPS, ball toss and body blade
Elliptical trainer

Goal – Normal gait

Months 3 – 6

Continue appropriate previous exercises
Standing SLR x 4 with Theraband bilaterally
Partial wall squats – No knee flexion past 45 degrees
Forward, lateral, and retro step downs in parallel bars
– No knee flexion past 45 degrees (small step)
Leg press with progressive resistance – No knee flexion past 45 degrees
HS curl weight machine
Fitter
Slide board
Treadmill – Forwards and backwards walking

Swimming
Quad stretches

Goal – Thigh girth equal bilaterally

Months 6 – 9

Continue appropriate previous exercises with increased resistance
– Progress to 90 degrees of knee flexion
– Increase resistance as tolerated

Hip weight machine x 4 bilaterally
Step downs with medium to large steps
Sit-up progression
Treadmill – Walking progression program

Goal – Walk 2 miles at 15 min/mile pace

Months 9 – 12

Continue appropriate previous exercises with progressive resistance
Agility drills / Plyometrics
Progressive weight training
Treadmill – Running progression program
Low impact activities such as skating, roller blading, cross country skiing, cycling

Goal – Run 2 miles on treadmill at comfortable pace

Months 12 – 18

Continue appropriate previous exercises
Knee extension weight machine
Agility drills – Slow “S”, figure 8, zigzags, progress to sharper cutting motions
Plyometrics – Advanced
Running progression to track
Repetitive impact activities such as aerobic classes
Transition to home / gym program

Goals

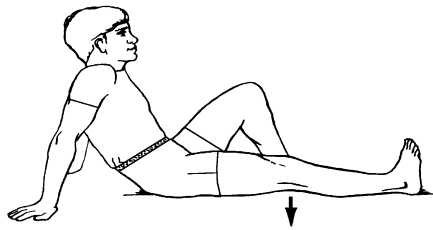
Resume all activities
Pass APFT at 6 months post-op

No contact sports until 18 months post-op

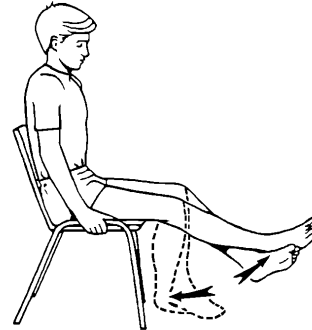
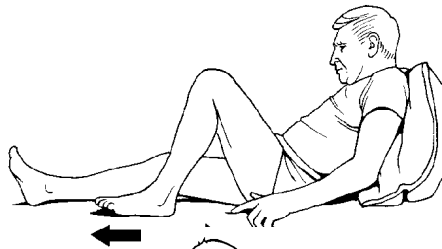
Knee Post Op Phase 1

Perform exercises below frequently: 30 reps 3-5x a day

Quad Isometrics



Heel Slides



Active Assisted Motion

Ice Position 15 minutes 2-3 x per day

