



# Cartilage Repair Center

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[www.cartilagerepaircenter.org](http://www.cartilagerepaircenter.org)

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## Patellofemoral + Tibial Tubercle Osteotomy (TTO) and/or High Tibial Osteotomy (HTO)

Autologous Chondrocyte Transplantation

Stage 1 – Proliferative Phase (0-6 weeks)

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### **PRIMARY GOALS**

DO NOT OVERLOAD GRAFT

INCREASE TIBIAL-FEMORAL AND PATELLA-FEMORAL MOBILITY

RESTORE QUADRICEPS CONTROL

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- BRACE**
- ♦Hinged knee brace locked in full extension during ambulation until good quad control/independent SLR achieved. May be out of brace for chair and CPM
  - ♦Hinged knee brace discontinued once independent SLR achieved
- PRECAUTIONS**
- ♦**50% WB with crutches if TTO is performed**
  - ♦**Heel to toe TDWB with crutches if HTO is performed**
- ROM**
- ♦Gentle AAROM/ AROM flexion as tolerated. Only PROM extension allowed. No active open-chain long-arc or short-arc quadricep exercises permitted
  - ♦CPM minimum 3 hours daily beginning at 40 degrees of flexion and progressing as tolerated
  - ♦Leg dangle every hour, each day to regain flexion ROM. Begin at 90 degree leg dangle, and use nonoperative leg to assist with increased flexion
  - ♦**Goal: Minimum 90 degrees flexion by 2 weeks, 110 degrees by 4 weeks, and full ROM by 6 weeks post-op**
- THEREX**
- ♦Quad sets, SLR with brace locked in extension, leg curl/heel slides, hip abduction/extension. No ankle weights or band resistance permitted in stage 1
  - ♦Stationary bicycle with no resistance once 90 degrees knee flexion obtained (~3 weeks)
- THERAPY**
- ♦Multi-directional patella mobilization immediately after surgery
  - ♦Continue cryotherapy and ACE wrap for swelling and pain control
  - ♦E-stim for VMO/quadriceps muscle re-education/biofeedback as needed
  - ♦Massage/deep friction to hamstring insertions, suprapatellar quadriceps, medial/lateral gutters and infrapatellar fat regions
  - ♦Pool therapy recommended 3 weeks post-op to enhance motion
- COMMENTS**
- ♦Contact MD if ROM not achieved to within 20 degrees of goal
  - ♦No resistance permitted with stationary bicycle until cleared by MD
  - ♦**NO** leg presses/squats
  - ♦**NO** active open-chain (long arc or short arc) due to increased patellofemoral contact forces
  - ♦**Activity level should be modified if increased pain, catching, or swelling occurs**

Outpatient Physical Therapist:  
2-3x week / 6 weeks