



Cartilage Repair Center

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

Autologous Chondrocyte Transplantation
Stage 2 – Transitional Phase (7-12 weeks)

PRIMARY GOALS

DO NOT OVERLOAD GRAFT

INCREASE TIBIAL-FEMORAL AND PATELLA-FEMORAL MOBILITY

RESTORE QUADRICEPS CONTROL

BRACE	♦Hinged knee brace discontinued once independent SLR achieved
GAIT	♦Use bathroom scale to progress as follows(if HTO performed): Weeks 7 & 8 PWB 1/3 Body Weight Weeks 9 & 10 PWB 2/3 Body Weight Weeks 11 & 12 FWB with crutches Week 13+ Single crutch, cane, as tolerated *Progress per guidelines above as pain allows.
ROM	♦Gentle AAROM/ AROM flexion as tolerated. Only PROM extension allowed. No open-chain long-arc or short-arc quadricep exercises permitted ♦CPM may be discontinued
THEREX	♦Quad sets, SLR, leg curls/heel slides, hip abduction/extension with ankle weights and/or band resistance as tolerated ♦Stationary bicycle without resistance as tolerated ♦Pool exercise using kickboard – flutter/straight leg, scissor kick only (no frog kick) ♦Gentle closed-chain terminal knee extension 0-40 degrees (TKE) permitted starting at 9-10 weeks as tolerated per weight bearing restriction ♦Permitted to begin blood flow restriction (BFR) therapy
THERAPY	♦Multi-directional patella mobilization as needed ♦Cryotherapy and ACE wrap for edema control ♦Pool therapy as available to enhance ROM and quadricep/hamstring muscle 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 regions
COMMENTS	♦No resistance permitted with stationary bicycle until cleared by MD ♦ NO active open-chain (long arc or short arc) due to increased patellofemoral contact forces ♦ NO leg press or squatting ♦ Activity level should be modified if increased pain, catching, or swelling occurs

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