



## Indiana University Health

*IU Health Physicians Orthopedics & Sports Medicine*

### **AUTOLOGOUS CHONDROCYTE IMPLANTATION (ACI) OF PATELLOFEMORAL JOINT (PATELLA / TROCHLEA) WITH TIBIAL TUBERCLE OSTEOTOMY**

#### **PHYSICAL THERAPY PROTOCOL**

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**Patient Name:** \_\_\_\_\_ **Date of Surgery:** \_\_\_\_\_

\_\_\_ **Evaluate and Treat**

\_\_\_ **Provide patient with home program**

**Frequency:** \_\_\_\_\_ x/week    x    \_\_\_\_\_ weeks

\_\_\_ **Phase I (0-6 wks): *Period of protection.***



- **Non weight-bearing with brace locked in extension.** Hinged knee brace should be worn at all times except for PT and hygiene. Brace should be locked in extension for first 2 weeks during ambulation, brace should be locked in extension for weeks 0-2, locked to 0-40 degrees for weeks 2-6.
- **ROM**
  - CPM 6-8 hrs/day to 0-30 x 2 weeks, then gradual increase (5/day) to Full ROM by week 6.
  - Gentle passive ROM 0-40; home supine extension stretching with pillow under foot and weight on distal thigh.
  - ***Let knee passively hang over table/bed to 90 degrees 3x/day for a few minutes to prevent stiffness. No active knee extension.***
- **Strengthening:** Gentle quad sets, co-contractions, isometric quad/hamstring strengthening in extension. **No active extension.**

\_\_\_ **Phase II (6-12 wks): *Transition phase.***

- **Transition to full weight-bearing over weeks 6-8 (50% WB/wk x 2 weeks).** Weaning from hinged knee brace once quad control (no limp and no extension lag on SLR). Full weight-bearing and D/C brace by week 8.
- **ROM:** D/C CPM and progress to full active and passive ROM. Goal: Full ROM by 8-10 weeks. Aggressive stretching at end-ranges if FROM not achieved by 10 weeks.
- **Strengthening:** Continue prior exercises, adding in SLRs. Can begin partial wall sits and then advance to other closed-chain strengthening (with knee bent no more than 40 degrees) once full weight-bearing.

\_\_\_ **Phase III (3-18 months): *Maturation phase.***

- **ROM:** Continue active and active-assisted ROM.
- **Strengthening:** Progress closed-chain patellofemoral strengthening without limits. Begin treadmill walking at a slow pace and progress to balance/proprioception.
- Light plyometrics and jogging can be initiated at 6 months, starting with 2 minute walk / 2 minute jog on level surface (no hills).
- For 9 months: begin progressive running (still on hills) and sport-specific drills.
- **High-impact activities (jumping, contact sports) allowed only after 12-16 months if pain free.**



\_\_\_ **Other:**

- \_\_\_ Modalities                      \_\_\_ Electrical Stimulation                      \_\_\_ Ultrasound  
\_\_\_ Heat before/after                      \_\_\_ Ice before/after exercise  
\_\_\_ May participate in aquatherapy after week three, begin aqua-running week 6

**By signing this referral, I certify that I have examined this patient and physical therapy is medically necessary. This patient \_\_\_ would \_\_\_ would not benefit from social services.**

\_\_\_\_\_ **Date:** \_\_\_\_\_

**Bryan M. Saltzman, MD**