

Autologous Chondrocyte Implantation (ACI) Femoral Condyle Only

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Patient Name	Date of Surgery
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Procedure: Right Left Knee Femoral Condyle Autologous Chondrocyte Implantation (ACI)

Location: Anterior Posterior

*****Respect graft location during closed chain activities (see box above)**

- If lesion is anterior, avoid loading in full extension
- If lesion is posterior, avoid loading in flexion > 45 degrees

****If pain or swelling develops with any activities, they must be modified/reduced to eliminate symptoms.**

Evaluate and Treat – no open chain or isokinetic exercises

Provide patient with home exercise program

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

- **Toe-touch weight bearing (20%) with crutches.** A hinged knee brace is worn at all times except during PT, CPM and hygiene. Brace is gradually unlocked as follows:
 - **Weeks 0-2:** locked in extension
 - **Weeks 2-4:** gradually open brace 20 degrees at a time as quad control is gained.
 - **Weeks 4-6:** open brace fully; brace may be discontinued once a SLR can be performed without an extension lag.
- **ROM**
 - **CPM:** use in 2 hour increments for 6-8 hrs/day, 1 cycle/minute, starting at 0-30 degrees and advancing 5-10 degrees daily as tolerated. If CPM is not available at any point during this time, patients are to perform 1500 active-assisted cycles of the knee per day (seated at the edge of a table, with the knee over the edge).
 - **Goal: 90 degrees by week 4, 130 degrees by week 6**
 - Gentle passive, active-assisted and active non-weightbearing (heel slides) ROM as tolerated.
 - **Goal: full ROM by week 6.**
- **Strengthening:**
 - **Weeks 0-2:** quad sets, isometric quad/hamstring strengthening, and SLRs. Perform exercises in brace if quad control inadequate.
 - **Weeks 2-6:** begin progressive closed chain exercises within weight-bearing restrictions and lesion location (see above).

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

- **Gradual return to full weight bearing.** Continue crutch use, but progress weightbearing gradually as tolerated (25% per week). Full weight-bearing without crutches by the end of this phase.
- **ROM:** D/C CPM and progress to full active and passive ROM.
- **Strengthening:** Continue prior exercises with respect to lesion location, advancing closed-chain strengthening as weightbearing is progressed.

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

- **ROM:** Continue active and active-assisted ROM.
- **Strengthening:** Progress closed-chain strengthening as tolerated.
 - **At 3 months:** Begin treadmill walking at a slow pace and progress to balance/proprioceptive exercises
 - **At 6 months:** Begin light plyometrics and jogging, starting with 2 minute walk / 2 minute jog
 - **At 9 months:** Begin progressive running and sport-specific agility program.
- **A full return to high impact activities (basketball, tennis, etc.) is not allowed until after 12-16 months, and only if patient is pain free.**

Other:

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

Frequency: _____ x/week x _____ weeks

**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.**

Physician Signature

Date

Printed Name
