

**Rehabilitation Protocol:
Autologous Chondrocyte Implantation (ACI) – Patellofemoral Joint
– Large Lesion Patella OR Trochlea WITH Tibial Tubercle
Transfer**

Phase I (Weeks 0-2)

Bracing:

- Hinged knee brace locked in extension for a total of 6 weeks (including during sleeping).
- Remove for rehab with PT and for CPM

Weight bearing:

- Non-weight bearing x 6 weeks

Range of Motion:

- Start Passive ROM up to 30 degrees of flexion
- Continuous passive motion machine 0-30 starting approximately 6-8 hours after surgery for 8-12 hours per day
- Approximate goals of 45 degrees of flexion by day 5
- 60 degrees by week 1
- 75 degrees by week 4
- 90 degrees by week 5-6
- 115-125 degrees by week 8
- 125-135 degrees by week 10-12

Therapeutic Exercises

- Quad/Hamstring/Adductor/Gluteal sets – Straight leg raises/Ankle pumps
- DO NOT overload graft. Avoid twisting, rotational and shearing forces.
- AVOID open chained exercises between 40-70 degrees of flexion!
- Only passive knee extension during first 6 weeks

Modalities:

- Ice, elevation, compression
- Scar massage
- Others at discretion of therapist

Phase II (Weeks 2-6)

Bracing:

- Continue hinged knee brace locked in extension up to 6 weeks post op. Remove for rehab with PT and for CPM

Weight bearing:

- Continue non weight bearing

Range of Motion:

- 75 degrees by week 4
- 90 degrees by week 5-6
- 115-125 degrees by week 8
- 125-135 degrees by week 10-12

Therapeutic Exercises

- Continue with Quad/Hamstring/Core strengthening.
- DO NOT overload graft. Avoid twisting, rotational and shearing forces.
- AVOID open chained exercises between 40-70 degrees of flexion!
- Only passive knee extension during first 6 weeks

Modalities:

- Ice, elevation, compression
- Scar massage
- Gentle patellar mobilizations
- Others at discretion of therapist

Phase III (Weeks 6-12)

Bracing: May discontinue brace (usually at week 6)

Weight bearing:

- Gradually return to full weight bearing

Range of Motion:

- May increase range of motion as tolerated

Therapeutic Exercises

- Begin closed chain exercises - wall sits/shuttle/mini-squats/toe raises
- Gait training
- Continue with Quad/Hamstring/Core strengthening
- Begin unilateral stance activities
- May introduce stationary bicycle with no resistance as tolerated
- AVOID open chained exercises between 40-70 degrees of flexion!
- Heavy resisted open kinetic chain exercises should be avoided for at least 9-12 months postoperatively!
- May use pool therapy

Phase IV (Months 3-6)

Weight bearing:

- Full weight bearing with a normal gait pattern

Therapeutic exercise

- Advance closed chain strengthening exercises, proprioception activities
- May start light nonimpact activities at 6 months
- Heavy resisted open kinetic chain exercises should be avoided for at least 9-12 months postoperatively!

Phase V (Months 6-18)

Continue strengthening

Sport specific training

Full return to sports / activities usually NOT until 12-18 months