

Autologous Chondrocyte Implantation (MACI) – Knee (Patellofemoral)

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The surgeon may specify on the referral any specific requests or deviations that fall outside the scope of this protocol, including if *deceleration* of these time frames is desired.

Phase I (Weeks 0 – 2)	Phase II (Weeks 3 – 6)	Phase III (Weeks 6 – 12)	Phase IV (Weeks 13 – 28+)
<p>PRECAUTIONS</p> <ul style="list-style-type: none"> PWB (50%) with crutches required Brace locked in extension <p>GOALS</p> <ul style="list-style-type: none"> Protect chondrocytes/graft Protect surgical knee Limit pain and inflammation Restore leg control <p>CLINICAL CARE</p> <ul style="list-style-type: none"> Swelling/Wound management Cryotherapy <p>POSSIBLE EXERCISES</p> <ul style="list-style-type: none"> PROM CPM begin 48 hours after surgery CPM recommended to begin at 0-45° 2-4 hrs/day with progression 15° per week as tolerated Ankle pumps Quad, hamstring, gluteal isometrics <p>ENCOURAGE</p> <ul style="list-style-type: none"> ROM is focus 4 hrs/day for first 6 weeks 	<p>PRECAUTIONS</p> <ul style="list-style-type: none"> WBAT with crutches Brace locked in extension until 6 weeks postop <p>GOALS</p> <ul style="list-style-type: none"> Allow healing of tissue and bone Decrease pain and inflammation Progressively increase ROM <p>CLINICAL CARE</p> <ul style="list-style-type: none"> Swelling management NMES Light scar mobilization when wound closed CPM continued <p>EXERCISES</p> <ul style="list-style-type: none"> PROM for flexion and extension Passive and active heel slides Straight leg raise activities Basic proprioceptive activities NMES to improve quad function <p>CRITERIA to advance...</p> <ul style="list-style-type: none"> 6 weeks from surgery ROM Flexion: > 90° 	<p>PRECAUTIONS</p> <ul style="list-style-type: none"> Watch for patellofemoral pain WBAT with crutches as needed to control effusion Brace discontinued <p>CLINICAL CARE</p> <ul style="list-style-type: none"> Work on normalizing gait May begin pool therapy in chest deep water as indicated Careful patellar mobilization in all directions CPM discontinued <p>EXERCISES</p> <ul style="list-style-type: none"> Stationary biking without resistance beginning recumbent and progress to upright Core exercises <p>CRITERIA to advance...</p> <ul style="list-style-type: none"> Negotiate stairs normally Restore limb confidence Normal gait mechanics Single leg stance control w/o UE support Effusion managed Full ROM 	<p>PRECAUTIONS</p> <ul style="list-style-type: none"> FWB Watch hip/knee alignment with single leg squatting No jumping, cutting, or sprinting until cleared Hold on return to run until 7-9 month and quad limb symmetry index (LSI) is > 80% and no effusion <p>CLINICAL CARE</p> <ul style="list-style-type: none"> Blood Flow Restriction Training for atrophy as needed Exercises based on patient demands and goals <p>EXERCISES</p> <p>13-20 weeks</p> <ul style="list-style-type: none"> Leg press (double progress to single) Advance CKC strengthening single leg without dynamic valgus Step downs Seated knee extension (90-45°) Lunges Begin light hamstring strengthening <p>20+ weeks</p> <ul style="list-style-type: none"> Progress cycling Rowing as tolerated <p>28+ weeks</p> <ul style="list-style-type: none"> Running: initiate walk-jog program when the following criteria are met: <ul style="list-style-type: none"> 80% quad LSI No Effusion Jumping: double progress to single leg High level strengthening: single leg on unstable surfaces Agility drills/plyometrics <p>CRITERIA to advance...</p> <ul style="list-style-type: none"> Return to sport or heavy work cleared by MD > 90% of limb symmetry on Functional Testing