







REHABILITATION GUIDELINES FOR AUTOLOLOGOUS CULTURED CHONDROCYTES ON PORCINE COLLAGEN MEMBRANE (MACI) PATELLOFEMORAL JOINT

PHASE I (0-6 WEEKS POST-OP)	DATES:
Appointments	MD appointment at (10-14 days post-op) Begin physical therapy (3-5 days post-op)
Rehabilitation Goals	 Early ROM of knee Pain and Edema control Protect and promote cell adherence and proliferate growth to graft
Precautions	 TTWB x 0-1 weeks, 25%-50% WB x 2-3 weeks, 75%-full WB x 4-6 weeks (WB may change if bipolar lesions exist) Brace locked in extension with gait, unlocked for ROM non-weight bearing, on at all times unless in CPM or in therapy. ROM slow progression to full by 6 weeks (0-2 weeks 0-20°, 2-3 weeks 30-60°, 4-6 weeks 90-130°) No open kinetic chain quad strength x 6 weeks
Suggested Therapeutic Exercises	 CPM day 1 post-op set 0-30 with slow progression of ROM as tolerated Ankle ROM Quad sets, Hamstring sets, Glut sets Passive/active heels slides 4-way hip (once quad activation allows) Clam-shells 4-6 weeks bilateral calf raises Gait training
Cardiovascular Exercises	Stationary Bike (no resistance)
Progression Criteria	 Pain free ROM to 130 Able to do SLR without extension lag

PHASE II (6-12 WEEKS POST-OP) DATES:

Appointments	Continue physical therapy (2x week)
Rehabilitation Goals	 Full pain free AROM Normal gait pattern pain free
Precautions	 Progress to FWB weaning from crutches and brace No impact (running or jumping) x 12 weeks No cutting, pivot motions, or heavy impact x 6 months
Suggested Therapeutic Exercises	 Progress closed kinetic chain exercises from double leg to single leg Balance progressing from double leg to single leg Proprioception work Squats, lunges, slowly initiate lateral motions (weight supported progressing to full body weight) Step up/down Normalize gait training without assistive devices
Cardiovascular Exercises	Stationary Bike with progressive resistanceWalking on level ground
Progression Criteria	 Pain free normal gait pattern Pain free ROM with weight bearing positions

PHASE III (3-6 MONTHS POST-OP) DATES:

Appointments	Continue physical therapy (1-2x week progressing to prn)
Rehabilitation Goals	 Return to pain free strenuous daily activity Pain free stairs Return to work
Precautions	 No cutting, pivot motions, or heavy impact x 6 months No return to sport unless pass a return to sport test at 9 months No running outside on uneven surfaces x 9 months
Suggested Therapeutic Exercises	 Continue with Phase II strength progression Agility drills Single leg balance and strength progression Balance and proprioception progression on uneven surfaces
Cardiovascular Exercises	Bike outside Walking

	Running progression on controlled surfaces
Progression Criteria	 Pass a return to sport test prior to sport specific recreational activities at 9 months post-op Able to walk pain free > 3 miles on all terrain

References: MACI Rehabilitation Manual, Jay Ebert, PHD, AEP ESSAM, Hollywood Functional Rehabilitation Clinic, School of Sport Science (Exercise and Health), University of Western Australia

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