

# **Meniscus Allograft/CMI**

## **Rehabilitation Protocol**

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for Sports Medicine  
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### **Introduction:**

- This rehabilitation protocol has been developed for the patient with a meniscal allograft or collagen meniscal implant (CMI) procedure. It is extremely important to protect this patient against excessive weight bearing forces during the early postoperative period to avoid shearing or disruption of the graft tissues. Early passive range of motion is highly beneficial to enhance the cartilage and the remodeling process.

### **Goals of rehabilitation are to:**

- Control joint pain, swelling, hemarthrosis
- Regain normal knee range of motion
- Regain a normal gait pattern
- Regain normal lower extremity strength
- Regain normal proprioception, balance, and coordination

The physical therapy is to begin post-op day #3-5. It is extremely important for the supervised rehabilitation to be supplemented by a home fitness program.

### **Important post-op signs to monitor:**

- Swelling of the knee or surrounding soft tissue
- Abnormal pain response, hypersensitive
- Abnormal gait pattern, with or without assistive device
- Limited range of motion
- Weakness in the lower extremity musculature

### **Return to activity:**

- It requires both time and regular clinic evaluation to safely and efficiently return to functional activity.
- Adequate strength, flexibility, and endurance are all necessary to return to high level function, all of which are addressed in this program.
- Isokinetic testing and functional evaluation are required to assess a patient's readiness to return to sport.
- Return to intense activities following a meniscal transplant may increase the risk of repeat injury or the potential of compounding the original injury. Symptoms such as pain, swelling, or instability should be closely monitored by the patient.

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### Phase 1: Week 1-2

#### **Range of Motion:**

- Passive, 0-90°
- Patella mobs
- Ankle pumps
- Gastoc/Soleus/Hamstring stretch
- Heel/Wall slides to reach goal

#### **Strength:**

- Quad sets with e-stim/biofeedback
- SLR in (flex, abd, add) as tolerated
- Multi-angle isometrics (0-60°)
- Hamstring/Gluteal isometric sets
- Knee extension (90-30°) (active assisted)

#### **Weight Bearing:**

- TDWB TO PWB
- Crutches post-op

#### **Brace:**

- Bracing with 0-90° range of motion
- Removed during range of motion exercise

#### **Modalities:**

- E-stim/biofeedback as needed
- Ice 15-20 minutes

#### **Goals for Phase 1:**

- ROM 0-90°
- Adequate quad/VMO contraction
- Independent in HEP
- Control pain, inflammation, and effusion
- TDWB to PWB as noted by Dr. Adickes

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### Phase 2: Week 4-12

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#### **Range of Motion:**

- Passive, 0-135°
- Patella mobs
- Gastoc/Soleus/Hamstring stretch
- ITB/Quad stretch
- Heel/Wall slides to reach goal
- Prone hang to reach goal

#### **Strength:**

- Progression of isometric exercises
- SLR in 4 planes with ankle wt/tubing
- Knee extension (90-30°) with light weight
- Hamstring curl with light weight
- Leg press (0-60°)/Total Gym
- Heel raise/Toe raise
- Multi-hip in 4 directions
- Mini-squats (0-30°)
- Initiate 3-6" lateral/forward step-up/down

#### **Balance Training:**

- Weight shift (side-to-side, fwd/bkwd)
- Initiate single leg balance work
- ½ Foam roller work
- Wobble board work
- Sportscored balance/agility work

#### **Weight Bearing:**

- PWB to FWB with quad control

#### **Brace:**

- Discharge at week 4

#### **Aerobic Conditioning:**

- Bicycle when flexion is 110°
- EFX
- Walking program
- Swimming

#### **Modalities:**

- Ice 15-20 minutes

#### **Goals for Phase 2:**

- PWB to FWB
- ROM 0-135°
- Control pain, inflammation, and effusion
- Increase lower extremity strength
- Enhance proprioception, balance, and coordination

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### **Phase 3: Week 12-16**

#### **Range of Motion:**

- Gastroc/Soleus/Hamstring stretch
- ITB/Quad stretch

#### **Strength:**

- Continue all strengthening exercises from
- previous phases
- Progress with all single leg activity

#### **Balance Training:**

- Advanced proprioception/balance activity
- Single leg work with plyotoss
- Dynamic balance work on advanced surfaces

#### **Running Program:**

- Initiate jump rope for endurance and impact
- Initiate running on minitramp, progress to treadmill as tolerated

#### **Functional Training**

- Lateral movements (slide board, shuffles)
- Initiate light plyometric training

#### **Modalities:**

- Ice 15-20 minutes as needed

#### **Goals for Phase 3:**

- Maintain full range of motion
- Increase lower extremity strength and endurance
- Initiate functional activity
- Initiate sport specific activity

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### **Phase 4: Week 16-24**

#### **Range of Motion:**

- Continue with all stretching activities

#### **Strength:**

- Continue with all strengthening activities from previous phases increasing weight and repetition

#### **Running/ Conditioning Program:**

- Bicycle with resistance for endurance
- EFX/StairMaster for endurance
- Increase running program
- Increase walking program
- Swimming for endurance
- Backward running

#### **Cutting/ Agility Program:**

- Lateral shuffle/slide board
- Carioca
- Figure 8's

#### **Functional Training:**

- Advance plyometric program
- Advance sport specific drills

#### **Modalities:**

- Ice 15-20 minutes as needed

#### **Goals for Phase 4:**

- Enhance lower extremity strength and endurance
- Return to previous activity level
- Return to sport specific functional level