



## Indiana University Health

*IU Health Physicians Orthopedics & Sports Medicine*

### **BONE MARROW ASPIRATE CONCENTRATE (BMAC) INJECTION WITH KNEE ARTHROSCOPY**

#### **PHYSICAL THERAPY PROTOCOL**

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**Patient Name:** \_\_\_\_\_ **Date of Surgery:** \_\_\_\_\_

**Procedure(s):**                      **Right/Left Knee Arthroscopy**  
   **Partial Meniscectomy/Debridement**  
   **Fat Pad/Plica Debridement**

**Accessory Procedure (circled if applicable):**

**Lysis of Adhesions (LOA) with Manipulation Under Anesthesia (MUA)**



\_\_ **Evaluate and Treat – no open chain or isokinetic exercises**

\_\_ **Provide patient with home exercise program**

**Frequency:** \_\_\_\_\_x/week    x    \_\_\_\_\_weeks

\_\_ **Phase I (Weeks 1-2)\*\*\*: *Initial recovery.***

◆**Toe-touch weightbearing with crutches for 1 week post-op.**

◆**ROM:** Progress through passive, active and active-assisted ROM as tolerated

- Goal: Full extension by 2 weeks, 130 degrees of flexion by 6 weeks

◆**Patellar mobilization daily.** You may begin to ride a stationary bicycle with low tension 10-12 minutes/day, as well as simple quadriceps and hamstring exercises on a daily basis. **No squats or lunging activities to avoid overloading the joint.**

◆**Strengthening:** quad sets, SLRs, heel slides, etc.. No restrictions to ankle/hip strengthening.

*\*\*\*If a lysis of adhesions (LOA) and manipulation under anesthesia (MUA) was performed at the same time, patient needs to wear a knee immobilizer (or hinged knee brace, locked in extension) at all times except during PT and for hygiene. CPM is usually ordered for 2-4 hrs per day x 6wks.*

\_\_ **Phase II (Weeks 2-6)\*\*\*: *Advance ROM and strengthening.***

◆**ROM:** Continue with daily ROM exercises

- Goal: Increase ROM as tolerated; aggressive end-range stretching as tolerated

◆**Strengthening:** Begin and advance closed chain strengthening to full motion arc.

- Add pulley weights, theraband, and other modalities as per PT discretion.
- Advance to wall sits, lunges, balance ball, leg curls, leg press, plyometrics as tolerated.



- Continue stationary bike and biking outdoors for ROM, strengthening, and cardio. Progress to sport-specific activities as tolerated.
- **Restrictions from squats and lunging activities to avoid overloading the joint until 6 weeks postop. BMAC patients should avoid running, jumping and other impact-loading activities for 3 months postop.**
- Monitor for anterior knee symptoms, modulating exercises as necessary.

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\_\_\_ **Other:**

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

**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.**

\_\_\_\_\_ **Date:** \_\_\_\_\_

**Bryan M. Saltzman, MD**