

# Brandon Beamer M.D - *Orthopedic Sports Medicine Specialist*

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## Notes:

*\*This protocol is designed to serve as a guide for the rehabilitation process.*

*It is not intended to supersede clinical judgment and decision making. Progression rough each phase is designed to allow for maximal tissue healing of repaired tissues and is based on scientific evidence and clinical experience*

**Estimated Return to Sport / Work:**

### Criterion for Progression:

- 1) **Minimal to no edema/effusion**
- 2) **Full patellar mobility**
- 3) **Normalized gait pattern**

### **Phase III – Tissue Remodeling/Hypertrophy Phase (weeks 7-20)**

- Goals:
- 1) Full knee AROM
  - 2) Improve eccentric quad control
  - 3) Strength progression

- ROM:** ROM to full
- Exercise:** Progressive Resistance Exercise  
Mini squats/Wall squats to 90  
Closed/Open Chain Hamstring Curls to 90<sup>14</sup>  
Leg press to 90 degrees  
Single leg squats to 90 degrees  
Advanced Single Leg balance/proprioception exercises  
Lateral motion/stepping
- CV Exercise:** Stairmaster/Climber  
Swimming (week 12)

### Criterion for Progression:

- 1) **No pain or edema/effusion**
- 2) **Knee AROM 0-135 degrees**
- 3) **20 reps to 60 degrees single leg squat with eccentric control and good lower extremity alignment**
- 4) **Quad strength >80% of uninvolved LE (10RM single leg press or isokinetically if available)**

### **Phase IV – Sport Specific Training (weeks 20)**

- Goals:
- 1) Begin sport specific drills
  - 2) Begin jogging progression
  - 3) Normalize neuromuscular control
  - 4) Normalize jumping/landing mechanics if indicated
  - 5) Prepare for return to sport

- Exercise:** Begin jogging progression  
Begin agility progression  
Begin plyometric progression  
Begin sport specific strengthening

### Criterion for Return to Sport: (Recommend combination testing of strength, agility, and power according to available resources/clinic setting)<sup>3</sup>

- 1) No pain or swelling
- 2) Quad strength > 90% of uninvolved (10RM leg press or isokinetic testing)<sup>12</sup>
- 3) IKDC (MCID 6.3 @ 6mo; 16.7 @ 12 mo)<sup>2,4,5,16</sup>
- 4) Confidence Question<sup>17</sup>

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## MENISCUS REPAIR: (Small, Stable Peripheral)

### Weight Bearing

- NWB x \_\_\_\_\_ wks
- TDWB x \_\_\_\_\_ wks/days
- PWB \_\_\_\_\_% x \_\_\_\_\_ wks
- WBAT
- Brace Locked in Ext x \_\_\_\_\_ wks

### Brace

Brace : \_\_\_\_\_ weeks

With Sleep: \_\_\_\_\_ weeks

### ROM

- Full ROM
- Locked full ext x \_\_\_\_\_ wks
- Locked at \_\_\_\_\_° x \_\_\_\_\_ wks
- ROM limits
- \_\_\_\_\_° to \_\_\_\_\_° x \_\_\_\_\_ wks
- \_\_\_\_\_° to \_\_\_\_\_° x \_\_\_\_\_ wks
- \_\_\_\_\_° to \_\_\_\_\_° x \_\_\_\_\_ wks
- \_\_\_\_\_° to \_\_\_\_\_° x \_\_\_\_\_ wks

### CPM

- \_\_\_\_\_° to \_\_\_\_\_° x \_\_\_\_\_ wks
- 30-70° ↑ 10°/d @ dir
- None

### Recommended Clinical Guidelines

**WB:** TDWB x 1-2 weeks  
75%-FWB x 3-4 weeks

### Precautions

**No open chain hamstring curls until week 8**

### Phase I – Tissue Protection/Healing Phase (weeks 0-2)

- Goals:** 1) Reduce pain  
2) Reduce effusion  
3) Achieve full knee extension ROM  
4) Facilitate quadriceps activation

**ROM:** PROM/AAROM (0-MD prescribed limit)  
Stretch: Gastroc/soleus, quads, hams, TFL/ITB

**Exercise:** Quad Isometrics<sup>1</sup>  
SLR 4 way  
Clamshells at 30 and 60 degrees<sup>9</sup>

**Manual:** Patella mobilizations  
Soft Tissue Mobilization patellar tendon

**Modalities:** Cryotherapy<sup>5,6,15,20,25</sup>  
Functional Electrical Stimulation<sup>14,22,23</sup>

### Criterion for Progression:

- 1) *Voluntary quad isometric contraction*
- 2) *No extensor lag with SLR*
- 3) *Good patellar mobility*
- 4) *Knee AROM –0-90 degrees*

### Phase II – Tissue Proliferation Phase/Progression Phase (weeks 3-6)

- Goals:** 1) Pain and edema control  
2) Improve knee AROM  
3) Strength progression – develop functional quad control  
4) Normalize gait pattern  
5) Minimize shear forces on knee

**ROM:** PROM/AAROM/AROM (0-MD prescribed limit)  
Stationary Bike

### **Gait Training/Cone walking**

**Exercise:** Standing weight shifting  
Open chain knee extension (90-30)<sup>17</sup>  
Wall/mini squats (0-45)<sup>3</sup>  
Forward/Lateral step ups<sup>4,12</sup>  
Leg Press (60-10)<sup>17</sup>  
Single limb stance  
Calf Raises

Dead Lift/Single Leg dead lift

**Manual:** Continue PRN  
Initiate scar mobilization<sup>2,13</sup>

**Modalities:** Continue PRN