

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 through 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:

Criterion for Progression:

- 1)No effusion**
- 2)Knee AROM 0-135**
- 3)Full patellar mobility**
- 4)Normalized gait pattern**

Phase III – Tissue Remodeling/Hypertrophy Phase (weeks 10-24)

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

- ROM:** ROM to full
- Exercise:** Progressive Resistance Exercise
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)Full knee AROM**
- 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 24+)

- 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)³

- 1)Lower Extremity Functional Test (LEFT)¹³**
- 2)Hop Tests – Single Hop, X-Hop, Triple Hop, Timed Hop >=85% uninvolved^{1,6,8-11}**
- 3)Single leg squat to 60 degrees knee flexion with good control for 3 minutes^{7,8,10}**
- 4)Quad strength > 90% of uninvolved (10RM leg press or isokinetic testing)¹²**
- 5)IKDC (MCID 6.3@ 6mo; 16.7 @ 12 mo)^{2,4,5}**

MENISCUS REPAIR (Complex/Radial/Large Peripheral)

Phase I – Tissue Protection/Healing Phase (weeks 0-6)

- 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 Isometrics¹
SLR 4 way
Clamshells at 30 and 60 degrees⁹
Open chain knee extension (week 5)(90-30)^{14,17}

Manual: Patella mobilizations
Soft Tissue Mobilization patellar tendon
Scar tissue mobilization^{2,13}

Modalities: Cryotherapy^{5,6,15,20,25}
Functional Electrical Stimulation^{14,22,23}

Criterion for Progression:

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

Phase II – Tissue Proliferation Phase/Progression Phase (weeks 7-9)

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

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

Gait Training/Cone walking

Exercise: Standing weight shifting
Wall/mini squats (0-45)³
Leg Press (60-10)¹⁷
Calf Raises
Forward/Lateral step ups^{4,12}
Single limb stance
Single limb deadlifts
Open/Closed chain hams curls to 90 (week 8)¹⁴

Manual: Continue PRN

Modalities: Continue PRN

Weight Bearing

- NWB x _____ wks
- TDWB x _____ wks
- 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 4-6 weeks

ROM: 0-90 deg by week 6

Precautions

No open chain hamstring curls until week 8