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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 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 / Work:

3) Full patellar mobility

4) Non-antalgic gait

Phase III – Tissue Remodeling/Hypertrophy Phase (weeks 8-20)

- Goals:**
- 1) Full knee AROM
 - 2) Improve eccentric quad control
 - 3) Strength progression
 - 4) Normalize gait without assistive device

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

Exercise: Partial Wall Slides (0-50)^{4,5,6,17}
Squats (0-50)^{7,8}
Step Ups^{10,14,17}
Static Forward Lunges (0-40)¹³
Step Downs^{14,17}
Single Limb Stance with perturbation^{9,10}
Balance Board
Begin resisted prone knee flexion at 4 months^{7,10}

CV Exercise: Pool Walking
Stationary Bike¹⁸
Treadmill Walking
Elliptical
Stairclimber
Pool Jogging
Swimming

Criterion for Progression:

- 1) No pain or edema/effusion
- 2) Full knee ROM
- 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 (week 20)
Begin agility progression (week 20)
Begin plyometric progression (week 20)
Progress on sport-specific training

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

- 1) No pain or swelling
- 2) Quad strength > 90% of uninvolved (10RM leg press or isokinetic testing)¹²
- 3) IKDC (MCID 6.3 @ 6mo; 16.7 @ 12 mo)^{2,4,5,16}
- 4) Confidence Question¹⁷

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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

CPM

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

Recommended Clinical Guidelines

WB: NWB x 2 weeks
TDWB x 2 weeks
PWB weeks 5-7
WBAT week 8

ROM: 0-60 deg (by week 6)
0-90 deg (by week 8)
0-120 deg (by week 12)
0-130 deg (by week 16)

Brace: Locked in ext x 2 weeks

Precautions

Avoid posterior sagging of tibia
No open chain resisted hamstrings
until 4 months

Isolated PCL Repair/Reconstruction

Phase I – Tissue Protection/Healing Phase (weeks 0-3)

Goals: 1)Reduce pain and effusion

- 3)Minimize scar adhesion formation
- 4)Achieve full knee extension ROM
- 5)Facilitate quadriceps activation
- 6)Protect against posterior translation of tibia
- 7)Maximize prone exercise; minimize supine exercises (*place rolled towel under proximal tibia during supine exercise*)

ROM: PROM/AAROM/AROM (0-MD prescribed limit)
Gastroc/Soleus/Hams stretch

Exercise: Quad Isometrics^{1,11}
Standing SLR flex/abd/ext (only in brace)^{2,3,11}
Open chain knee extension 30-0 (*prone or sidelying*)^{11,12}

Manual: Patella Mobilizations
Soft Tissue Mobilization
Scar Mobilization^{25,26}

Modalities: Cryotherapy²⁰⁻²⁴
Functional Electrical Stimulation

Criterion for Progression:

- 1)Voluntary quadriceps isometric contraction
- 2)Full knee extension AROM
- 3)No extensor lag with standing SLR
- 4)Good patellar mobility

Phase II- Tissue Proliferation Phase/Progression Phase (weeks 4-8)

Goals: 1)Pain and edema control

- 2)Progress towards WBAT gait
- 3)Improve knee ROM
- 4)Strength progression – develop functional quad control
- 5)Normalize gait pattern
- 6)Protect against posterior translation of tibia (until week 6)

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

Gait Training/Cone Walking

Exercise: Standing weight shifting^{4,5,6,9}
Calf Press (per WB restriction)
Shuttle/Leg Press (0-50)(per WB restriction)^{7,10}
Prone Knee Flexion (No resistance)^{7,10}

Manual: Continue PRN

Modalities: Continue PRN

Criterion for Progression:

- 1)Minimal to no edema/effusion
- 2)Knee ROM 0-90 degrees