



Lisa Kaplin, DO

MULTILIGAMENT KNEE RECONSTRUCTION REHABILITATION

Precautions

1. No testing of repaired or reconstructed ligaments (Lachman, Anterior Drawer, Valgus Stress) prior to 12 WEEKS
2. No isotonic resisted hamstring exercises for 8 weeks with hamstring autograft
3. No loaded open kinetic chain knee extension beyond 45 degrees for 8 WEEKS
4. Meniscus Repair:
 - a. No weight-bearing (WB) therapeutic exercise >90° x 8 WEEKS
 - b. No forced flexion beyond 90° x4 WEEKS

FOR PROXIMAL MCL/MID SUBSTANCE REPAIRS: Accelerated knee flexion ROM to prevent scar formation and loss of functional ROM.

0-2 WEEKS:

- No weight bearing, keep brace locked at 0 degrees (full extension) at all other times except physical therapy. Emphasis on maintaining full extension.
- ROM: Passive flexion 0-60 degrees, Active Assisted extension 60 to 0 degrees Patella mobilization
- SLR supine with brace locked at 0 degrees
- Quadriceps isometrics @ 60 degrees
 - Ankle pumps
 - Heel slides
 - **WEAR KNEE BRACE FOR AT LEAST 6-8 WEEKS POST OP**

1. NWB for 0-2 weeks with brace locked in extension

2. TTWB for weeks 2-4 with brace locked in extension

3. WBAT 4-6 weeks with brace locked in extension

4. WBAT at 6 weeks with brace unlocked, wean from brace

***IDEALLY AT THE END OF 4 WEEKS:**

-ROM: ≥ 0-90 degrees. If full AROM knee extension is not achieved by 4 weeks, contact surgeon regarding ROM concerns.

-Strength: Quadriceps set with normal superior patellar translation, 20x SLR without extensor lag -

Effusion: 2+ or less with Modified stroke test

2-6 WEEKS:

- Brace locked @ 0 degrees
- ROM: Active Assisted extension 90-0 DEGREES
- Passive flexion 0-90 degrees
- Short crank (90mm) ergometry
- SLR's (all planes): Progressive Resistance, start with no weight, then add 1 lb after each week.
- Multiple-angle Quadriceps Isometrics: 60 to 20 degrees
 - Should have 90 degrees of flexion towards the end of 6 weeks.



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6-12 WEEKS

- D/C crutches when gait is non-antalgic (6-8weeks)
- Brace changed to OTS
- Initiate Forward Step Up program (6-8weeks)
- Leg Press, Mini-Squats (60-0 degree arc)
- Standard ergometry (if knee ROM > 115 degrees)
- AAROM exercises
 - Stationary bike
- Proprioception Training (Prop Board, BAPS)
- Aquacisor (gait training)
- Retrograde treadmill ambulation
- Initiate Step Down Program (8-10 weeks)

12-20 WEEKS

- SHOULD HAVE FULL PAIN FREE AROM
- Leg Press: Squats (80 to 0 degree arc)
- AAROM exercises
- Proprioception Training (Prop Board, BAPS) Lunges
- Advanced Proprioception training (perturbations) Agility exercises (sport cord)
- Versaclimber
- Retrograde treadmill running
- Quadriceps stretching

20-26 WEEKS

- Start forward running (if descend 8" step satisfactorily)
- Continue lower extremity strengthening, flexibility, proprioceptive & agility programs
- Initiate plyometric program (if sufficient strength base)
- Functional Hop Test (>85% contralateral)

>26 WEEKS

- Continue lower extremity strengthening, flexibility, proprioceptive & agility programs
- Advance plyometric program
- Advance agility and sport specific program

****Collect at least one of the following at initial evaluation, every 6 weeks, and discharge. Be consistent with which outcome tool is collected each time:**

1. IKDC 2. KOOS 3. ACL-RSI 4. Tegner

1. Isometric testing any time after week 8- fixed at 90°
2. Isokinetic testing no earlier than 12 weeks

CRITERIA TO DISCHARGE ASSISTIVE DEVICE:



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1. ROM: Full active knee extension; no pain on passive overpressure
2. Strength: Able to perform strong quad isometric with full tetany and superior patellar glide and able to perform 20 SLR without quad lag
3. Effusion: 1+ or less is preferred (2+ acceptable if all other criteria are met)
4. Weight Bearing: Demonstrates pain-free ambulation without visible gait deviation

CRITERIA TO INITIATE RUNNING/JUMPING:

1. ROM: full, pain-free knee ROM, symmetrical with the uninvolved limb
2. Strength: Isokinetic testing 80% or greater for hamstring and quad at 60°/sec and 300°/sec
3. Effusion: 1+ or less
4. Weight Bearing: normalized gait and jogging mechanics
5. Neuromuscular Control: Pain-free hopping in place without dynamic knee valgus

CRITERIA TO RETURN TO SPORT:

1. ROM: full, pain-free knee ROM, symmetrical with the uninvolved limb
2. Strength: Isokinetic testing 90% or greater for hamstring and quad at 60°/sec and 300°/sec
3. Effusion: No reactive effusion \geq 1+ with sport-specific activity
4. Weight Bearing: normalized gait and jogging mechanics
5. Neuromuscular control: appropriate mechanics and force attenuation strategies with high level agility, plyometrics, and high impact movements
6. Functional Hop Testing: LSI 90% or greater for all tests
7. Physician Clearance