



7858 Shrader Road

Richmond, Virginia 23294

## Meniscus Repair Guidelines

### Meniscus Repair Guidelines

Progression is both criteria-based and patient specific. Phases and time frames are designed to give the clinician a general sense of progression.

#### Weight Bearing Guidelines:

- Week 0-4: Toe-Touch Weight Bearing with Brace Locked In Extension
- Week 5-6: Weight Bearing as Tolerated with Brace Locked in Extension
  - Week 7 -: Discontinue Brace, Weight Bearing as Tolerated



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## Meniscus Repair Guidelines

### Acute Care: Day of Surgery

#### PRECAUTIONS

- Avoid prolonged sitting, standing, and walking
- Begin Toe Touch Weight Bearing with crutches
- Avoid advancing weight bearing (WB) too quickly which may prolong recovery
- Avoid pain with walking and exercises
- Avoid painful activities
- Avoid putting heat on knee
- Avoid weightbearing without brace
- Avoid ambulating without crutches
- Do not put a pillow under the operated knee- keep extended when resting and sleeping

#### TREATMENT RECOMMENDATIONS

- Transfer training
- Patient education:
- Edema management
- Activity modification



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	<ul style="list-style-type: none"><li>▪ Brace management</li><li>▪ Initiate and emphasize importance of HEP</li><li>▪ Quadriceps sets, gluteal sets, ankle pumps,</li><li>▪ Seated knee AAROM</li><li>▪ Straight leg raise with brace locked in extension, if able</li><li>▪ Passive knee extension with towel roll under heel</li></ul>
EMPHASIZE	<ul style="list-style-type: none"><li>▪ Control swelling</li><li>▪ Quadriceps contraction</li><li>▪ Independent transfers</li><li>▪ Gait training with appropriate assistive device</li><li>▪ P/AAROM (focus on extension)</li><li>▪ Appropriate balance of activity and rest</li></ul>
MINIMUM CRITERIA FOR DISCHARGE	<ul style="list-style-type: none"><li>▪ Independent ambulation with appropriate assistive device on level surfaces and stairs</li><li>▪ Independent brace management</li></ul>



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- Independent with transfers
  - Independent with HEP

## POST-OPERATIVE PHASE I: WEEKS 0-2

### GOALS

- Full passive extension
- Achieve 70° knee flexion
- Normalize patella mobility
- Progressive weight bearing to WBAT
- Control post-operative pain / swelling
- Prevent quadriceps inhibition
- Promote independence in home therapeutic exercise program

### PRECAUTIONS

- Limit ROM 0-70°
  - Avoid ambulation without brace locked at 0°
  - Avoid heat application
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## Meniscus Repair Guidelines

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- Avoid prolonged standing/walking
  - Avoid ambulation without crutches
  - Do not put a pillow under the operated knee for comfort when elevating extremity

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### TREATMENT RECOMMENDATIONS

- Begin Toe Touch Weight Bearing
  - Passive knee extension with towel under the heel
  - Quadriceps Re-education: Quadriceps sets with towel under knee with Neuromuscular Electric Stimulation or Biofeedback
  - Patellar Mobilization
  - Active ROM knee flexion to tolerance, Active Assist knee extension to 0°
  - Hip progressive resisted exercises
  - Calf Strengthening
  - SLR all planes with brace (progress to without brace)
  - Cryotherapy for pain and edema
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### EMPHASIZE

- Upper Extremity Ergometry, as tolerated
- Patellar Mobility
- Full PROM Knee Extension
- Improving Quadriceps Contraction
- Controlling pain and effusion
- Compliance with HEP and Precautions

### MINIMUM CRITERIA FOR ADVANCEMENT TO NEXT PHASE

- Able to SLR without quadriceps lag or pain
- 0° knee extension, minimum of 70° knee flexion
- Pain and Swelling Controlled

## POST-OPERATIVE PHASE II: WEEK 3-6

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GOALS	<ul style="list-style-type: none"><li>▪ ROM 0° - 130°, progressing to full ROM<ul style="list-style-type: none"><li>○ Week 3-4: 0-90</li><li>○ Week 5-6: Full ROM</li></ul></li><li>▪ Good Patella Mobility</li><li>▪ Minimal Swelling</li><li>▪ Restore Normal Gait (non-antalgic) without Assistive Device</li><li>▪ Ascend 8" stairs with Good Control, without Pain</li></ul>
PRECAUTIONS	<ul style="list-style-type: none"><li>▪ Avoid descending stairs reciprocally until adequate quadriceps control &amp; lower extremity alignment</li><li>▪ Avoid pain with therapeutic exercise &amp; functional activities</li><li>▪ DO NOT force ROM</li></ul>
TREATMENT RECOMMENDATIONS	<ul style="list-style-type: none"><li>▪ Continue Phase I Activities</li><li>▪ AROM knee flexion to tolerance</li><li>▪ Progression from seated to standing (wall slides)</li><li>▪ AAROM knee extension to 0°</li></ul>



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### TREATMENT RECOMMENDATIONS (CONT.)

- Straight leg raises (SLR) PRE's in all planes
- With brace locked at 0° in supine until no extension lag demonstrated
- Leg press bilaterally in 80°-5° arc if knee flexion ROM > 90° (Progression from bilaterally to 2 up/1 down, to unilateral)
- Mini squats progressing to 0°-60°, initiating movement with hips
- Forward step-up progression starting with 2"-4"
- Terminal knee extension in weight bearing
- Consider blood flow restriction (BFR) program with FDA approved device if patient cleared by surgeon and qualified therapist available
- Hip-gluteal progressive resistive exercises
- May introduce Romanian Dead Lift (RDL) toward end of phase





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### TREATMENT RECOMMENDATIONS (CONT.)

- Calf strengthening (Progression from bilateral to unilateral calf raises)
- Flexibility exercises
- Proprioception board/balance system (Progression from bilateral to unilateral weight bearing)
- Once single leg stance achieved with good alignment and control, progress from stable to unstable surfaces
- Standard crank stationary bicycle for ROM and/or cycling (requires 115° knee flexion)
- Upper extremity ergometry, as tolerated
- Gait training WBAT
- Edema management, e.g. cryotherapy (no submersion until cleared by surgeon), elevation, gentle edema mobilization avoiding incision
- Progressive home exercise program



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## Meniscus Repair Guidelines

	<ul style="list-style-type: none"><li>▪ Patient education regarding monitoring of response to increase in activity level and weightbearing</li></ul>
EMPHASIZE	<ul style="list-style-type: none"><li>▪ Knee ROM</li><li>▪ Patella mobility</li><li>▪ Quadriceps contraction</li><li>▪ Normalizing gait pattern</li><li>▪ Activity level to match response and ability</li></ul>
MINIMUM CRITERIA FOR ADVANCEMENT TO NEXT PHASE	<ul style="list-style-type: none"><li>▪ ROM 0 - 130°</li><li>▪ Normal gait pattern</li><li>▪ Demonstrate ability to ascend 8" step</li><li>▪ Good patella mobility</li></ul>



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### POST-OPERATIVE PHASE III: WEEKS 7-12

GOALS	<ul style="list-style-type: none"><li>▪ Restore Full ROM</li><li>▪ Able to descend 8" stairs with good leg control &amp; no pain</li><li>▪ Improve ADL endurance</li><li>▪ Improve lower extremity flexibility</li><li>▪ Protect patello-femoral joint</li></ul>
PRECAUTIONS	<ul style="list-style-type: none"><li>▪ Avoid pain with therapeutic exercise &amp; functional activities</li><li>▪ Avoid running and sport activity until adequate strength development and MD clearance</li></ul>
TREATMENT RECOMMENDATIONS	<ul style="list-style-type: none"><li>▪ Continue Previous Phase Activities</li><li>▪ SLR Progressive Resistance Exercise (PRE) in all planes</li><li>▪ Isometric knee extension at 60°</li></ul>



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## Meniscus Repair Guidelines

### TREATMENT RECOMMENDATIONS (CONT.)

- Open chain knee extension progression (At week 12 initiate PRE in limited arc 90°-40°)
- Leg press eccentrically
- Progress squats to 0°-90°, initiating movement with hips
- Continue forward step-up progression
- Initiate step-down progression starting with 2"-4"
- Lateral Step-Ups, Crossovers and Lunges
- Continue foundational hip-gluteal progressive resistive exercises
- Continue hamstring and calf strengthening
- Core and UE strengthening
- Consider BFR program with FDA approved device if patient cleared by surgeon and qualified therapist available
- Proprioception training (Progress to perturbation training)



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TREATMENT RECOMMENDATIONS (CONT.)	<ul style="list-style-type: none"><li>▪ Cardiovascular conditioning</li><li>▪ Stationary bicycle</li><li>▪ Elliptical when able to perform 6" step-up with good form</li><li>▪ Gait training WBAT</li><li>▪ Cryotherapy</li><li>▪ Ice with passive knee extension with towel under heel as needed to maintain ROM</li><li>▪ Progressive home exercise program</li><li>▪ Patient education regarding monitoring of response to increase in activity level</li></ul>
EMPHASIZE	<ul style="list-style-type: none"><li>▪ Address impairments</li><li>▪ Functional movement</li><li>▪ Functional strength</li></ul>
MINIMUM CRITERIA FOR ADVANCEMENT TO NEXT PHASE	<ul style="list-style-type: none"><li>▪ Ability to perform 8" step-down with good control and alignment without pain</li><li>▪ Full symmetrical knee ROM</li></ul>



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- Symmetrical squat to parallel
- Single leg bridge holding for 30 seconds
- Balance testing (e.g. Star Excursion Test, Biodex Balance System™)
- Quadriceps isometrics 70% of contralateral lower extremity (tested with dynamometer at 60° at 12 weeks)

## POST-OPERATIVE PHASE IV: WEEKS 13-26

### GOALS

- Demonstrate ability to run pain free
- Maximize strength and flexibility as to meet demands of ADLS
- Hop Test > 75% limb symmetry

### PRECAUTIONS

- Initiate return to running/sport only when cleared by physician
- Avoid pain with exercises and functional training



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## Meniscus Repair Guidelines

### TREATMENT RECOMMENDATIONS

- Monitor tolerance to load, frequency, intensity and duration
- Avoid too much too soon
- Open chain knee extension progression
- At week 12 initiate PRE in limited arc 90°-40° (Progress to 90°-0° by end of phase IV)
- Progress leg press eccentrically
- Functional strengthening
- Progress squats to 0°-90°, initiating movement with hips
- Progress to single leg squats
- Forward step-up and step-down progression
- Progress lateral step-ups, crossovers and Progress lunges
- Initiate **running progression**
- Initiate **plyometric progression**
- Continue foundational hip-gluteal progressive resistive exercises



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TREATMENT  
RECOMMENDATIONS  
(CONT.)

- Continue hamstring and calf strengthening
- Flexibility exercises and foam rolling
- Core and UE strengthening
- Consider BFR program with FDA approved device if patient cleared by surgeon and qualified therapist available
- Progress proprioception training (Incorporate agility and controlled sports-specific movements)
- Progress cardiovascular conditioning (Stationary Bike and Elliptical)
- Cryotherapy and/or compression therapy
- Progressive home exercise program
- Patient education regarding monitoring of response to increase in activity level

TREATMENT  
RECOMMENDATIONS  
(CONT.)

EMPHASIZE

- Return to normal functional activities





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### MINIMUM CRITERIA FOR DISCHARGE

- No swelling
- Normal neurovascular assessment
- Normal scar and patellar mobility
- Normal quadriceps contraction
- Full LE ROM, flexibility, and strength (normative data for comparison if available)



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## Meniscus Repair Guidelines

### Example of Running Progression

Not to be initiated until MD clearance to begin Phase 4

Week	Run	Rest/Walk	Repetitions
1	30 seconds	30 seconds	3
2	1 minute	1 minute	3
3	2 minutes	1 minute	2
4	4 minutes	2 minutes	1
5	4 minutes	2 minutes	2
6	8 minutes	N/A	1

### Example of Plyometric Progression

Not to be initiated until MD clearance to begin Phase 4

Week 1	Onto Box
Week 2	In place and Jumping Rope
Week 3	Drop Jumps
Week 4	Broad Jumps
Week 5	Side to side hops
Week 6	Hop to opposite



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