

# **Altru Advanced Orthopedics Knee Meniscus Repair** **Rehabilitation Protocol**

The intent of this protocol is to provide the therapist with a guideline for the post-op rehab of a patient who has had a meniscus repair, meniscal root repair, or meniscal transplant. It is not intended to be a substitute for appropriate clinical decision making regarding the progression of a patient's rehab. The actual therapy plan of care must be based on the surgical approach, physical exam and findings, individual progress, any post-op complications, and/or co-morbidities. If a therapist needs assistance or has questions regarding the progression of a patient post surgically they should consult the referring surgeon.

**\*\*For meniscal root repair/meniscal transplant see specific precautions at end of protocol.**

## **PHASE I: Weeks 1-3**

Precautions:

- NWB for 1 week to let knee settle until post-op visit
- Progress to WBAT with brace locked in extension after 1 week
- Limit knee flexion to 0-90° for first 4 weeks
- If posterior horn repair no hamstring exercises for 6 weeks

Goals:

- Reduce pain and swelling
- Restore full knee extension
- Restore quad control

Bracing:

- Wear knee brace locked in extension for ambulation, unlock 0-90° to sit or move when not walking
- Wear brace at all times
- Lock brace in full extension at night to facilitate full extension ROM

Therapeutic Exercise:

- ROM
  - Passive and AAROM only, 0-90° flexion
  - Heel slides: 0-90° flexion
  - Wall slides: 0-90° flexion
  - Prone hangs
- Hamstring, gastroc stretch
- Strengthening
  - Quad sets with EMS or biofeedback if needed

- Ham sets (if posterior horn repair, no hamstring exercises for 6 weeks)
- Ankle pumps
- Hip abd and adduction
- Proprioception exercises and SLR with brace locked at 0°

#### Manual Therapy:

- Patella mobilization
- Scar tissue mobilization

#### Modalities:

- E-stim- NMES, TENS, IFC
- Cold compression

### **PHASE II: Weeks 3-6**

#### Precautions:

- Deep flexion in weight bearing should be avoided
- Limit closed chain exercise to 90°
- If posterior horn repair no hamstring exercises for 6 weeks

#### Goals:

- Slow progression of ROM to 0-125° flexion
- WBAT ambulation without AD or brace
- Improve quad control
- Improve strength
- Improve static balance control

#### Bracing:

- D/C brace at 4 weeks if good quad tone and control

#### Therapeutic Exercise:

- ROM
  - Passive up to 0-125° gradually (in PT)
  - Heel slides: seated and/or supine
  - Heel prop
- Continue with HS and calf stretching
- Strengthening
  - Quad set/SAQ
  - Standing or prone HS curl (if no posterior horn repair)
  - SLR without extensor lag, initiate weight as control improves
  - Theraband hip strengthening
  - Leg press (limit to 90°)
  - Step-ups: forward and lateral

- Wall slides, chair squat, mini-squats (limit to 90°)
- Calf raises
- Stationary bicycle: start when 110° flexion is achieved
- Balance and proprioception:
  - Begin with brace on but unlocked, then progress out of the brace as tolerated
  - Weight shifting: lateral, forward/backward
  - Single leg stance: even and uneven surfaces
  - Rebounder ball toss

#### Manual Therapy:

- Patella mobilization
- Scar tissue mobilization

#### Modalities:

- E-stim- NMES, TENs, IFC
- Cold compression

### **PHASE III: Weeks 6-12**

#### Precautions:

- Avoid exercises that cause pain at the patella
- Avoid pivoting or twisting on the involved leg
- Avoid deep knee bends and squats

#### Goals:

- Restore full ROM
- Restore full LE strength
- Normalized gait pattern without AD or brace (FWB status)
- Normalized pattern and control with ascending/descending stairs

#### Therapeutic Exercise:

- ROM
  - Quad, hamstring, and calf stretches
- Strength
  - Continue with previous exercises, increase resistance and intensity as able
  - Initiate hamstring curls at week 7 if posterior horn repair
  - Squats, leg press
  - Step ups: forward and lateral with emphasis on slow controlled movement
  - Lunges: forward and reverse (to no more than 90°)
  - Single leg squats, single leg wall squats, single leg chair squat
  - Stationary bicycle
- Balance and proprioception
  - Rebounder ball toss on even and uneven surfaces

- Squats on balance board, foam roll, air ex
- Steamboats – 4 way on even and uneven surfaces

Manual Therapy:

- Patella mobilization
- Scar tissue mobilization

Modalities:

- E-stim- NMES, TENS, IFC
- Cold compression

**PHASE IV: Weeks 12-36**

Precautions:

- Avoid exercises that cause pain at the patella
- Wait until 16 weeks post-op to initiate lateral exercises if meniscal root repair/meniscal transplant
- Wait until 18 weeks post-op to initiate plyometrics, agility, running, and swimming if meniscal root repair/meniscal transplant

Goals:

- Improve functional control
- Improve dynamic balance
- Improve strength, power, endurance, agility
- Prepare for return to full unrestricted activities

Therapeutic Exercise:

- Strength, balance and proprioception:
  - Continue with focus on increasing intensity and reducing repetition to increase strength
  - Initiate lateral movements and sports cord lunges, forward, backward, sideways, lateral step-up, step overs
- Plyometrics: bilateral progressing to unilateral
  - Include squat jumps, tuck jump, box jumps, depth jumps, broad jumps, scissor hops
  - Power skipping
  - Bounding in place and for distance
- Agility
  - Quick feet on step – forward and side to side sports cord
  - Progress lateral movements: shuffles with sports cord, slide board
  - Ladder drills
- Swimming: all strokes

<p><b>Running Progression:</b></p> <p><b>Trace or less effusion, 80% or &gt; strength of involved/uninvolved</b></p>	<ol style="list-style-type: none"> <li>1. Treadmill/track walking</li> <li>2. Treadmill walk/run intervals</li> <li>3. Treadmill running/track: run straights walk turns</li> <li>4. Track: run straights and turns</li> <li>5. Run outside on path/road</li> </ol>	<ul style="list-style-type: none"> <li>• Progress until 2 miles tolerated without increased pain and swelling.</li> <li>• No more than 4 times/week and only every other day.</li> <li>• Do not progress more than 2 levels in 7 days.</li> </ul>
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**PHASE V: 6+ Months**

Goals:

- Return to normal functional activities
- Return to normal sporting and recreational activities

Assessments for Return to Sport:

- Biodex testing

☐ Biodex/Cybex goals:

Peak Torque/BW %	Males	Females
60 deg/sec	110-115	80-95
180 deg/sec	60-75	50-65
300 deg/sec	30-40	30-45

- Advanced functional assessment at 6 months for return to sports (Hop Testing)

**Criteria for D/C from Skilled Therapy:**

- Normalized gait pattern
- Full pain-free ROM
- Involved LE strength 4 to 5/5
- Independent HEP
- Normal age appropriate balance and proprioception

**\*\*For meniscal root repair, and/or meniscal transplant use the following guidelines:**

<b>Weight Bearing Status</b>	
At 2 weeks post-op	Toe touch weight bearing, locked in extension
At 5 weeks post-op	25% body weight bearing, locked in extension
At 6 weeks post-op	50% body weight bearing, locked in extension
At 7 weeks post-op	75% body weight bearing, locked in extension
At 8 weeks post-op	100% body weight bearing, locked in extension
At 9 weeks post-op	Full weight bearing, gradually wean from brace

<b>Bracing</b>	
Post-op day 1 to 4 weeks	Locked in full extension
At 4 weeks post-op	Unlocked with 0-90° flexion block
At 5 weeks post-op	Unlocked with 0-100° flexion block
At 6 weeks post-op	Unlocked with 0-120° flexion block
At 7 weeks post-op	D/C brace if good quad control

<b>ROM</b>	
Post-op day 1 to 4 weeks	0-90°
At 5 weeks post-op	0-100°
At 5 weeks post-op	0-120°
At 8 weeks post-op	Full ROM