



## Post-Operative Rehabilitation Protocol for MENISCUS REPAIR Dr. Ritter & Dr. Waits

### 1) Treatment Guidelines

#### a) Follow Up with Surgeon:

- i) **2 weeks** post-op via a telemedicine visit. Please send updated PT notes to surgeon on last visit before telemedicine visit. Pt will be submitting on their own a picture of the incision via their EMR portal day before surgery. Fax therapy notes to (317) 718-2676
- ii) **6 weeks** in person with the surgeon. Please send updated therapy notes before visit with the surgeon.

#### b) **Suture Removal:** Therapist to remove portal sutures at days 10-14.

- i) Apply steri-strips over portal after removing sutures.

### 2) Defined

- a) Sutures or bio-absorbable fixation devices (arrows, darts, screws, etc.) bring together and fixate edges of tear in meniscus. Indications for repair vs. removal include location in vascular zone and size of tear
- b) By repairing the meniscus rather than removing fragments, the integrity of the cartilage to absorb shock in weight bearing is maintained
- c) May be performed in conjunction with ACL reconstruction

### 3) Goals

- a) Protect healing tissue
- b) Control post-operative pain and swelling
- c) Improve post-operative range of motion
- d) Improve functional strength, stability, and neuromuscular control

### 4) Rehabilitation Principles

- a) Be aware of compromised and/or repaired tissue
- b) Healing tissue should never be overstressed but appropriate levels of stress of beneficial
  - i) Inflammatory phase days 1-3
  - ii) Tissue repair with proliferation phase days 3-20
  - iii) Scar tissue most responsive to remodeling 21-60 days but occurs from 1 to 8 weeks
  - iv) Final maturation taking as long as 360 days
  - v) Graft integration
    - (1) Renervation
    - (2) Revascularization
- c) Tissue reactivity of the knee and tissue healing will dictate the rehabilitation process. Reactivity is determined by the clinical exam
  - i) Level I Reactivity



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- (1) Resting pain, pain before end range
  - (2) Aggressive stretching is contraindicated
  - (3) Grade I-II mobilization for neurophysiological effect
  - ii) Level II Reactivity
    - (1) Pain onset occurs with end range resistance
    - (2) Grade III and IV mobilization appropriate per patient tolerance
  - iii) Level III reactivity
    - (1) Engagement of capsular end feel with little or no pain
    - (2) Pain occurs after resistance
    - (3) Grade III and IV mobilization and sustained stretching is appropriate
  - d) Eliminate inflammation as the cause of pain and neuromuscular inhibition
  - e) Ensure return of appropriate joint arthrokinematics
  - f) Apply techniques in loose packed unidirectional and progress to close packed and multidirectional based on tissue healing and patient response
  - g) Facilitate performance of complex skills with proprioceptive and kinesthetic techniques: low to high, sagittal to frontal, bilateral to unilateral, stable to unstable, slow to fast, fixed to unfixed surface
  - h) Encourage life-long activity modification PPP 0-40, low impact aerobic, etc
  - i) Factors that affect the rehab process
    - i) Surgical approach
    - ii) Tissue quality
    - iii) Presence of concomitant pathology
    - iv) Age of patient
    - v) Comorbidities
    - vi) Pre and intra-operative range of motion
    - vii) Pain and sensitivity levels
    - viii) Cognitive abilities
  - 5) Post op functional guidelines
    - a) Dependent on functional range and strength, and neuromuscular control
    - b) Drive 7-14 days dependent upon no requirements of pain medication, confidence level, and possible car insurance restrictions
    - c) Work-per M.D. consult based on individual and job requirements
    - d) Jogging (treadmill) – 8-12 weeks
    - e) Sport- including cutting and rotational activities, golf, etc. 12-16 weeks
  - 6) Post op equipment guidelines
    - a) Post-op Brace- locked at 0-30 degrees with ambulation for first 4 weeks
      - i) D/C brace at 6-8 weeks (typically coinciding with follow-up M.D. appointment)
      - ii) May be out of brace at night during the first 4 weeks if full extension is achieved
    - b) Assistive device (crutch, cane, walker)
      - i) 2 crutches for 4 weeks, then progress to 1 crutch to normalized gait



- ii) Dependent on adequate quad control, no observed gait deviations, no increased pain or joint effusion as well as physician guidelines regarding weight-bearing restrictions

## 7) Rehabilitation

### a) Week 1-2; Protective ROM Phase

#### i) Precautions/Limits:

- (1) AROM knee flexion to 90 degrees
- (2) Control/minimize post-op swelling and effusion
- (3) Maintain patellar mobility
- (4) Ambulating in brace non-weight bearing with 2 crutches unless otherwise indicated by physician. Depending on location of tear and technique used to fixate repair (arrows vs. sutures, etc.), weight bearing status may be increased to partial as tolerated.
- (5) No flexion under weight bearing beyond 45 degrees for first 8 weeks

#### ii) Rx/clinical expectations

- (1) Full knee extension
- (2) Fair + to good quad contraction progressing to SLR without extension lag
- (3) Inhibit post-op muscle shut down / quad atrophy (electrical stimulation, bio-feedback, verbal and tactile cueing)
- (4) Progress lower extremity stretching in open chain positions
- (5) Cues for proper gait with assistive device and weight bearing restrictions per physician

### b) Week 2-4; Motion Phase

#### i) Precaution/Limits

- (1) No flexion under weight bearing beyond 45 degrees for first 8 weeks
- (2) Non-weight bearing with 2 crutches in less alternate weight bearing status is indicated

#### ii) Rx/ Clinical

- (1) Full knee extension
- (2) AROM to within 10 degrees of uninvolved knee
- (3) Strengthening and stretching per weeks 1-2 guidelines
- (4) Control swelling and effusion
- (5) Normalize patellar mobility
- (6) Good quad control

### c) Week 5-7; Strengthening Phase

#### i) Precautions/Limits

- (1) No flexion under weight bearing beyond 45 degrees for first 8 weeks
- (2) Gait progression to 1 crutch and without deviations

#### ii) Rx/Clinical Expectations

- (1) Reduce to minimal to no swelling or effusion
- (2) Restore full ROM



- (3) Good- to Good quad contraction attained through cueing, biofeedback, e-stim, and functional strengthening
- (4) Strengthening and stretching per weeks 1-4 guidelines, progressing to bilateral and unilateral closed chain activities. Include hip, ankle, and core strength as previous
- (5) Progression of bilateral and unilateral proprioceptive activity and reactive neuromuscular training
- (6) Progress strength and proprioception to tolerate standing on involved limb for 30 minutes and perform unilateral squat to 45 degrees symmetrically

d) Weeks 8-11; Strengthening and Conditioning Phase

i) Precautions/Limits

- (1) No flexion under weight bearing beyond 90 degrees for 12 weeks

ii) Rx/Clinical Expectations

- (1) Full ROM
- (2) Good- to Good quad contraction
- (3) Normalized wait without deviation or limb velocity asymmetry
- (4) Initiate bilateral low level plyometrics
- (5) Week 9, include the initiation of jogging
- (6) Week 10, progress to unilateral moderate level plyometrics
- (7) Week 11, progress to higher level agility activities (forward, retro-, and lateral; no cutting)

e) Weeks 12-16; Return to Sport and Function Progression

i) Precautions/limits

- (1) Promote PPP
- (2) Consider quality of form of plyo's and agility exercises rather than quantity
  - (a) No valgus wit landing
  - (b) Controlled landing (soft and able to stick)
  - (c) Good athletic posture

ii) Rx/ Clinical Expectations

- (1) Continue higher level plyometric activities
- (2) Initiate sports specific cutting, coordination, and agility activities

8) References