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## Meniscus Repair Rehabilitation Dr. Robert Klitzman

This rehabilitation protocol was developed for patients who have isolated meniscal repairs. Meniscal repairs located in the vascular zones of the periphery or outer third of the meniscus are progressed more rapidly than those repairs that are more complex and located in that vascular zone of the meniscus. Dependent upon the location of the repair, weight bearing status post-operatively as well as the intensity and time frame of initiation of functional activities will vary. The protocol is divided into phases. Each phase is adaptable based on the individual patients and special circumstances.

The **overall goals** of the surgical procedure and rehabilitation are to:

- Control pain, swelling, and hemarthrosis
- Regain normal knee range of motion
- Regain a normal gait pattern and neuromuscular stability for ambulation
- Regain normal proprioception, balance, and coordination for daily activities
- Achieve the level of function based on the orthopedic and patient goals

The physical therapy should be initiated within 3 to five days post-op. It is extremely important for the supervised rehabilitation program is to be supplemented by a home fitness program where the patient performs the given exercises at home or at a gym facility.

**Important post-op signs** to monitor include:

- Swelling of the knee or surrounding soft tissue
- Abnormal pain response, hypersensitive
- Abnormal gait pattern, with or without assistive device
- Limited range of motion
- Weakness in the lower extremity musculature (quadriceps, hamstring)
- Insufficient lower extremity flexibility

**Return to activity** requires both time and clinical evaluation. To safely and most efficiently return to normal or high level functional activity, the patient requires adequate strength, flexibility, and endurance. Isokinetic testing and functional evaluations are both methods of evaluating a patient's readiness to return to activity. Return to intense activities such as impact loading, jogging, deep knee flexion, or pivoting and shifting early post-operatively may increase the overall chance of a repeat meniscal tear and symptoms of pain, swelling, or instability should be closely monitored by the patient.

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**Dr. Robert Klitzman**  
**Phase 1: Week 1-2 Meniscal Repair**

<b>WEEK</b>	<b>EXERCISE</b>	<b>GOAL</b>
1-2	<p><b>ROM</b></p> <p>Passive, 0-90° Patellar mobs Ankle pumps Gastroc/soleus stretch Hamstring/ITB stretch Prone hangs to facilitate extension</p> <p><b>STRENGTH</b></p> <p>Quad sets with E-stim/biofeedback SLR in 4 planes SAQ Multi-hip machine in 4 planes Hip flexion-seated Multi-angle isometrics (0-60°)</p> <p><b>WEIGHT BEARING</b></p> <p>Toe touch weight bearing in I-ROM with crutches</p> <p><b>MODALITIES</b></p> <p>E-stim/biofeedback as needed Ice 15-20 minutes with 0° knee ext</p> <p><b>BRACE</b></p> <p>Remove brace to perform ROM activities I-ROM with crutches Brace locked at 0° ext to protect repair</p>	0-90°

**GOALS OF PHASE:**

- Control pain, inflammation, and effusion
- Adequate quad/VMO contraction
- Independent in HEP
- TDWB to PWB as noted by Dr. Klitzman

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## Phase 2: Week 2-4 Meniscal Repair

WEEK	EXERCISE	GOAL
2-4	<b>ROM</b> Passive, 0-120° Patellar mobs Gastroc/soleus stretch Hamstring/quad/ITB stretch Prone hang as needed Heel/Wall slides to reach goal	0-120°
	<b>STRENGTH</b> Quad sets with biofeedback SLR in 4 planes with ankle weight Multi-angle isometrics (0-60°) Knee extension (90-30°) Heel raises/Toe raises Leg press (110-40°) Wall squats	
	<b>BALANCE TRAINING</b> Weight shift (side/side, fwd/bkwd) Single leg balance Cup walk/Hesitation walk	
	<b>WEIGHT BEARING</b> PWB to FWB with crutches as tolerated Dependent upon Dr. Klitzman	PWB to FWB
	<b>BICYCLE</b> May initiate bike when 110° flex is reached DO NOT use bike to increase flexion	
	<b>MODALITIES</b> Biofeedback as needed Ice 15-20 minutes	
	<b>BRACE</b> I-ROM with crutches Opened to 90° at wk 2 Opened to full ROM at wk 3-4	Discharge wk 4

### GOALS OF PHASE:

- ROM 0-120°
- Adequate quad/VMO control

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- Control pain, inflammation, and effusion
- PWB to FWB with quad control

## Phase 3: Week 4-12 Meniscal Repair

WEEK	EXERCISE	GOAL
4-12	<b>ROM</b> Passive, 0-135° (full) Gastroc/soleus stretch Hamstring/quad/ITB stretch Prone hang to reach goal as needed Patellar mobs	0-135°
	<b>STRENGTH</b> Bicycle/EFX SLR in 4 planes with ankle weight/tubing Mini-squats/Wall squats Knee extension (90-30°) Hamstring curl (0-90°) Leg Press-single legged eccentric Smith Press-double legged Isokinetic training at high speeds (180-360°/sec) Multi-hip machine in 4 planes Lateral/Forward step-up/down Heel raise/Toe raise Lunges-knee not to migrate over toe	
	<b>BALANCE TRAINING</b> Single leg balance with plyotoss Sports cord agility work Wobble board work ½ Foam roller work	
	<b>WEIGHT BEARING</b> FWB by wk 4	FWB
	<b>BRACE</b> As needed	Discharge wk 4
	<b>MODALITIES</b> Ice 15-20 minutes as needed	

### GOALS OF PHASE:

- ROM 0-135°
- Full weight bearing
- Control pain, inflammation, effusion
- Increase lower extremity strength and endurance
- Enhance proprioception, balance, and coordination
- Complete readiness for sport specific activity

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## Phase 4: Week 12-36 Meniscal Repair

### WEEK

### EXERCISE

12-36

#### ROM

Continue all stretching activities

#### STRENGTH

Continue all exercises from previous phases

#### RUNNING PROGRAM

Water walking  
Swimming (kicking)  
Backward run

#### CUTTING PROGRAM

Lateral shuffle  
Carioca, figure 8's

#### FUNCTIONAL TRAINING

Initiate light plyometric program  
-- box hops, level, double-leg  
Sport specific drills

#### MODALITIES

Ice 15-20 minutes as needed

### GOALS OF PHASE:

- Enhance neuromuscular control
- Progress skill training
- Perform selected sports specific activity-unrestricted sporting activity
- Achieve maximal strength and endurance

Advanced weight training and sports specific drills are advised to maintain a higher level of competition. Isokinetic testing at 6 and 12 months may be recommended to guarantee maintenance of strength and endurance.

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