Meniscus Repair Rehabilitation

Dr. Walter R. Lowe

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 avascular 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 repair 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 lower extremity strength
- 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 5 days post-op. It is extremely important for the supervised rehabilitation 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:

- 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 clinic 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 evaluation 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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Phase 1-Weeks 1-2 Meniscal Repair

WEEK	EXERCISE	GOAL
1-2	ROM	0-90°
	Passive, 0-90°	
	Patellar mobs	
	Ankle pumps	
	Gastoc/soleus stretch	
	Hamstring/ITB stretch	
	Prone hangs to facilitate extension	
	STRENGTH	
	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°)	
	WEIGHT BEARING	
	Toe touch weight bearing in I-ROM with crutches	
	MODALITIES	
	E-stim/biofeedback as needed	
	Ice 15-20 minutes with 0° knee ext	
	BRACE	
	Remove brace to perform ROM activities	
	I-ROM with crutches	
	Brace locked at 0° ext to protect repair	

GOALS OF PHASE:

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

Phase 2-Weeks 2-4 Meniscal Repair

WEEK	EXERCISE	GOAL
2-4	ROM	0-120°
	Passive, 0-120°	
	Patellar mobs	
	Gastoc/soleus stretch	
	Hamstring/quad/ITB stretch	
	Prone hang as needed	
	Heel/wall slides to reach goal	

Phase 2-Weeks 2-4 Meniscal Repair Cont

WEEK	EXERCISE	GOAL
2-4	STRENGTH	
	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	
	BALANCE TRAINING	
	Weight shift (side/side, fwd/bkwd)	
	Single leg balance	
	Cup walk/Hesitation walk	
	WEIGHT BEARING	PWB to FWB
	PWB to FWB with crutches as tolerated	
	Dependent upon Dr. Lowe	
	BICYCLE	
	May initiate bike when 110° flex is reached	
	DO NOT use bike to increase flexion	
	MODALITIES	
	Biofeedback as needed	
	Ice 15-20 minutes	
	BRACE	Discharge wk 4
	I-ROM with crutches	
	Opened to 90° at wk 2	
	Opened to full ROM at wk 3-4	

GOALS OF PHASE:

- ROM 0-120°
- Adequate quad/VMO contraction
- Control pain, inflammation, and effusion
- PWB to FWB with quad control

Phase 3-Weeks 4-12 Meniscal Repair

WEEK	EXERCISE	GOAL
4-12	ROM	0-135°
	Passive, 0-135° (full)	
	Gastroc/soleus stretch	
	Hamstring/quad/ITB stretch	
	Prone hang to reach goal as needed	
	Patellar mobs	

Phase 3-Weeks 4-12 Meniscal Repair Cont

WEEK	EXERCISE	GOAL
4-12	STRENGTH	
	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	
	BALANCE TRAINING	
	Single leg balance with plyotoss	
	Sports cord agility work	
	Wobble board work	
	½ Foam roller work	
	WEIGHT BEARING	FWB
	FWB by wk 4	
	BRACE	Discharge
	As needed	wk 4
	MODALITIES	
	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

Phase 4-Weeks 12-36 Meniscal Repair

WEEK	EXERCISE
12-36	ROM
	Continue all stretching activities
	STRENGTH
	Continue all exercises from previous phases

Phase 4-Weeks 12-36 Meniscal Repair Cont

WEEK	EXERCISE
12-36	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.