

MENISCAL TRANSPLANT REHABILITATION PROTOCOL Dr. David R. Guelich

This rehabilitation protocol has been developed for the patient with a meniscal transplant procedure. It is extremely important to protect this patient against high weight bearing forces during the early postoperative period to avoid shearing or disruption of the graft tissues. Early passive range of motion is highly beneficial to enhance the cartilage and the remodeling process. The protocol is divided into phases. Each phase is adaptable based on the individual patient 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 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 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 evaluation are both methods of evaluating a patient's readiness to return to activity. Return to intense activities following a meniscal transplant may increase the risk of repeat injury or the potential of compounding the original injury. Symptoms such as pain, swelling, or instability should be closely monitored by the patient.

Dr. David R. Guelich Phase 1: Week 1-4

WEEK	EXERCISE	GOAL
1-4	ROM	0-90°
	Passive, 0-90°	
	Patella mobs	
	Ankle pumps	
	Gastoc/Soleus/Hamstring stretch	
	Heel/Wall slides to reach goal	
	STRENGTH	
	Quad sets with e-stim/biofeedback	
	SLR in (flex, abd, add) as tolerated	
	Multi-angle isometrics (0-60°)	
	Hamstring/Gluteal isometric sets	
	Knee extension (90-30°) (active assisted)
	WEIGHT BEARING	,
	TDWB TO PWB	TDWB-PWB
	Crutches post-op	
	BRACE	
	Bracing with 0-90° range of motion	0-90°
	Removed during range of motion exercise	е
	MODALITIES	
	E-stim/biofeedback as needed	
	Ice 15-20 minutes	
GOALS OF PHASE:		

• ROM 0-90°

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

Phase 2: Week 4-12 Meniscal Transplant

WEEK 4-12

EXERCISE

ROM

GOAL 0-135°

Passive, 0-135° Patella mobs Gastoc/Soleus/Hamstring stretch ITB/Quad stretch Heel/Wall slides to reach goal Prone hang to reach goal STRENGTH Progression of isometric exercises SLR in 4 planes with ankle wt/tubing Knee extension (90-30°) with light weight Hamstring curl with light weight Leg press (0-60°)/Total Gym Heel raise/Toe raise Multi-hip in 4 directions Mini-squats (0-30°) Initiate 3-6" lateral/forward step-up/down **BALANCE TRAINING** Weight shift (side-to-side, fwd/bkwd) Initiate single leg balance work ¹/₂ Foam roller work Wobble board work Sportscord balance/agility work WEIGHT BEARING PWB to FWB with quad control BRACE Discharge at week 4 AEROBIC CONDITIONING Bicycle when flexion is 110° EFX Walking program Swimming **MODALITIES** Ice 15-20 minutes

GOALS OF PHASE:

- PWB to FWB
- ROM 0-135°
- Control pain, inflammation, and effusion
- Increase lower extremity strength
- Enhance proprioception, balance, and coordination

PWB to FWB D/C wk 4

Phase 3: Week 12-16 Meniscal Transplant

WEEK

EXERCISE

12-16

Gastroc/Soleus/Hamstring stretch ITB/Quad stretch

STRENGTH

ROM

Continue all strengthening exercises from previous phases

Progress with all single leg activity

BALANCE TRAINING

Advanced proprioception/balance activity Single leg work with plyotoss

Dynamic balance work on advanced surfaces RUNNING PROGRAM

> Initiate jump rope for endurance and impact Initiate running on minitramp, progress to treadmill as tolerated

FUNCTIONAL TRAINING

Lateral movements (slide board, shuffles)

Initiate light plyometric training

MODALITIES

Ice 15-20 minutes as needed

GOALS OF PHASE

- Maintain full range of motion
- Increase lower extremity strength and endurance
- Initiate functional activity
- Initiate sport specific activity

Phase 4: Week 16-24 Meniscal Transplant

WEEK 16-24

EXERCISE

ROM Continue with all stretching activities STRENGTH Continue with all strengthening activities from previous phases increasing weight and repetition RUNNING/CONDITIONING PROGRAM Bicycle with resistance for endurance EFX/StairMaster for endurance Increase running program Increase walking program Swimming for endurance Backward running CUTTING/AGILITY PROGRAM Lateral shuffle/slide board Carioca Figure 8's FUNCTIONAL TRAINING Advance plyometric program Advance sport specific drills MODALITIES Ice 15-20 minutes as needed

GOALS OF PHASE:

- Enhance lower extremity strength and endurance
- Return to previous activity level
- Return to sport specific functional level