

Dr. Ryan Nelson
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Meniscal Allograft Transplant

Introduction:

• This rehabilitation protocol has been developed for the patient with a meniscal allograft or collagen meniscal implant (CMI) procedure. It is extremely important to protect this patient against excessive 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.

Goals:

- Control joint pain, swelling, hemarthrosis
- Regain normal knee range of motion
- Regain a normal gait pattern
- Regain normal lower extremity strength
- Regain normal proprioception, balance, and coordination

The physical therapy is to begin post-op day #3-5. It is extremely important for the supervised rehabilitation to be supplemented by a home fitness program.

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

Return to activity:

- It requires both time and regular clinic evaluation to safely and efficiently return to functional activity.
- Adequate strength, flexibility, and endurance are all necessary to return to high level function, all of which are addressed in this program.
- Isokinetic testing and functional evaluation are required to assess a patient's readiness to return to sport.
- 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.
- Typical return to sport is 9 to 12 months and modification of sport is highly recommended. This will be discussed with Dr. Nelson in the office and is dependent on the sport you are trying to achieve.

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Phase 1: Week 1-3

Range of Motion:

- Passive, 0-90°
- Patella mobs
- Ankle pumps
- Gastoc/Soleus/Hamstring gentle stretch (no stretch if osteotomy was performed)
- 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 (for osteotomy patients)

Crutches post-op Brace:

- Bracing with 0-90° range of motion
- Removed during range of motion exercise

Modalities:

- E-stim/biofeedback as needed
- Ice 15-20 minutes

Goals for Phase 1:

- ROM 0-90°
- Adequate quad/VMO contraction
- Independent in HEP
- Control pain, inflammation, and effusion
- TDWB as noted by Dr. Nelson

Patient to make appointment with Dr. Nelson 10-14 days post op.

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Phase 2: Week 4-12

Range of Motion:

- 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
- Bicycle when flexion is 110°
- Swimming 9 weeks

Modalities:

- Ice 15-20 minutes

Goals for Phase 2:

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

Patients to return to office to see Dr. Nelson 6 weeks post operative. Call with any concerns.

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Phase 3: Week 12-16

Range of Motion:

- Gastroc/Soleus/Hamstring stretch
- ITB/Quad stretch Strength:
- 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 for Phase 3:

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

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Phase 4: Week 16-24

Range of Motion:

- 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 for Phase 4:

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

Dr. Nelson's Meniscus Transplant Rehabilitation Protocol

with osteotomy follow ostotomy guidelines

Diagnosis:

Procedure date:

S/P:

WEEK

MONTH

1

2

3

4

5

6

7

8

9

10

3

4

5

6

PHASE 1 EXERCISES (0-2 weeks)

ROM 0-90, TDWB,

Quad sets with straight Leg Raises

Multi angle isometrics 0-60

Patella Mobs/Quad patellar Tendon

Hamstring/glute isometrics

PHASE 2 (WEEK 4-12)

ROM 0-135,

ITB, Quad, Hamstring, Achilles stretch

Short arc knee extension light weight

Hamstring curl with light weight

Leg press 0-60 degrees

Multi-hip all directions

Mini squats

PHASE 3 (Week 12-16)

Advance single leg activity

single leg work with plytoss

Dynamic balance on advanced surfaces

Initiate running program

CARDIOVASCULAR EXERCISES

Bike with Both Legs ROM 110

Aquajogging

Swimming

wobble board

Rowing

Stair Stepper

Treadmill

PHASE 4 HIGH LEVEL EXERCISES

Biking Outdoors

Rollerblading

Running

Skiing, basketball, Tennis, football, soccer

Golf

Agility Exercises

Trail Riding

Additional Instructions:

Ryan Nelson DO

Date