**Meniscal Root Repair**

**Jeremy Mangion, MD**

This protocol was developed for patients who have had a repair of a meniscus root tear. The goal of this protocol is to advance range of motion and strength as directed while protecting the repair to ensure optimal healing.

Patients will begin physical therapy after their first post operative visit with the physician. The dressing will have been removed and patients will have been utilizing a home exercise program.

Primary goals in the early weeks are to stress compliance with their home exercise program, reinforce restrictions, and prevent stiffness. If ROM begins to progress easily, you may slow progression to protect the repair.

Root tears are a special subset of meniscal tears that require additional weight bearing restrictions. Symptoms of failed repair can include pain, catching, and swelling.

The protocol is divided into phases. Each phase is adaptable based on the individual

patient and special circumstances.

Phase I –Maximum Protection- Weeks 1-6:

Goals:

* Diminish inflammation and swelling
* Restore ROM
* Reestablish quadriceps muscle activity

Activities:

* Ice, compression, elevation
* Toe Touch Weight-bearing with crutches and brace (locked in extension)
* Electrical muscle stimulation
* Brace at all times; locked in extension for ambulation.
* ROM 0-90
	+ Motion is limited for the first 7-21 days, depending on the development of scar tissue around the repair site. Gradual increase in flexion ROM is based on assessment of pain and site of repair (0-90 degrees).
* Patellar mobilization
* Scar tissue mobilization
* Exercises:
	+ Quadriceps isometrics
	+ No hamstring exercises for 6 weeks
	+ Hip abduction and adduction
* Proprioception training

Phase II: Moderate Protection- Weeks 6-12

Criteria for progression to phase II:

* ROM 0-90 degrees
* No change in pain or effusion
* Quadriceps control (MMT 4/5)

Goals:

* Increased strength, power, endurance
* Normalize ROM of knee (Full)
* Prepare patients for advanced exercises
* Return to full weight-bearing in brace

Exercises:

* Progressive resistance exercises (PREs) 1-5 pounds.
* Limited range knee extension (in range less likely to impinge or pull on repair)
* Toe raises
* Mini-squats (less than 90 degrees flexion)
* Cycling (no resistance)
* Unloaded flexibility exercises
* Flexibility exercises
* Lateral step-ups

Endurance Program:

* Swimming (no frog kick), pool running- if available
* Cycling
* Stair machine

Coordination Program:

* Balance board
* Pool sprinting- if pool available
* Backward walking
* Plyometrics

Phase III: Advanced Phase- Weeks 12-24

Criteria for progression to phase III:

* Full, pain free ROM
* No pain or tenderness
* Satisfactory clinical examination
* SLR without lag
* Normalized Gait without brace

Goals:

* Increase power and endurance
* Emphasize return to skill activities
* Prepare for return to full unrestricted activities

Exercises:

* Continue all exercises
* Increase plyometrics, pool program
* Initiate running program

Return to Activity: Criteria

* Full, pain free ROM
* Satisfactory clinical examination

Criteria for discharge from skilled therapy:

1) Non-antalgic gait

2) Pain free /full ROM

3) LE strength at least 4/5

4) Independent with home program

 5) Normal age appropriate balance and proprioception

6) Resolved palpable edema