



**Pediatric Orthopedic and Scoliosis Center
Rehabilitation Medicine Center**

Meniscal Allograft Transplantation Rehabilitation Protocol

I. IMMEDIATE POSTOPERATIVE PHASE (Week 0-2)

Goals: Reduce swelling, inflammation and pain
Gradually increase ROM

Reestablish patellar mobility
Restore voluntary quadriceps control
Protect healing tissues

A. Week One

1. Cryotherapy elevation and compression
2. Brace: knee immobilizer (sleep in brace)
3. Weight bearing: toe touch (less than 25%)
4. Range of motion: full passive knee extension gradually progress to 90 degrees flexion

(*Use of CPM if necessary)

5. Exercises: Patellar mobilization
Heel slides to gain flexion
Quadriceps setting
Straight leg raises (flexion)
Knee extension (active assisted)
Ankle pumps
Hamstrings, gastroc-soleus stretches

B. Week Two

- Continue all exercises listed above
- Use ice before and after exercise

II. PROTECTION PHASE (Weeks 3-8)

Goals:

- Protect healing tissue
- Gradually restore RIOM (flexion)
- Maintain full passive extension
- Progress weight bearing
- Restore quadriceps muscle strength

Criteria to progress to Phase II:

1. Mild effusion
2. Good patellar mobility
3. ROM minimal 0-95 degrees
4. Active quadriceps contraction

A. Weeks 3-4

1. Brace: continue use of knee immobilizer (sleep in brace for 4 weeks)
2. Weight bearing: increase to 50% at week 3 and 75% at week 4
3. Range of motion: passive ROM 0-105 week 3
4. Exercises:
 - Patellar mobilizations
 - Scar mobilization (if needed and closed incision)
 - Passive knee ROM
 - Quad setting
 - Multi-angle knee extension 30 degrees, 60 degrees
 - Straight leg raise (flexion)
 - Hip abd/adduction
 - Knee extension (90-30 degrees)
 - Hamstrings, gastroc, soleus stretching
 - Electrical muscle stimulation to quads
 - UBE for aerobic conditioning
5. Cryotherapy: continue use of ice and compression

B. Weeks 5-6

1. Brace: continue use of knee/immobilizer
2. Weight bearing gradually progress to FWIB week 6
3. Range of motion:
 - Passive ROM 0-120 week 5
 - Passive ROM 0-135 week 6
4. Exercises: continue all strengthening exercises listed above
 - Pool exercise program
 - Initiate bicycle
5. Cryotherapy: continue use of ice and compression

C. Weeks 7-8

1. Brace: discontinue use of brace at week 7-8
2. Weight bearing: full without brace
3. Range of motion: passive ROM 0-135 degrees
4. Exercises:
 - Straight leg raises (flexion)
 - Hip abd/adduction
 - Knee extension (90-30 degrees)
 - CKC mini-squats (0-40 degrees)
 - CKC leg press (0-60 degrees)
 - Bicycle
 - Pool program and swimming
 - Continue stretching hamstrings and gastroc
 - Proprioception and balance training
 - Cup walking
 - *No resisted hamstrings

III. MODERATE PROTECTION PHASE (Weeks 9-12)

Goals: Protect healing tissue (deep squats)
 Maintain full ROM
 Normalize strength and proprioception

Criteria to progress to Phase III:

1. Range of motion 0-135 degrees
2. Minimal pain and effusion
3. Quadriceps strength 4/5
4. Good patellar mobility
5. Symmetrical gait

A. Weeks 9-12

1. Exercises:
 - Stretch hamstrings and gastroc muscles
 - Progress strengthening exercises listed above
 - Initiate following:
 - Walking program
 - Swimming
 - Lateral step-ups
 - Wall squats (no deep)
 - Progress proprioception training

IV. MINIMAL PROTECTION PHASE (Weeks 13-22)

Goals: Increase strength, power and endurance
Begin gradual return to function

Criteria to progress to Phase IV:

1. Full non-painful ROM
2. Minimal to no effusion
3. Normal gait
4. Strength 4 to 4+/5

A. Weeks 13-22

1. Exercises: Leg press 0-100 degrees
Wall squats 0-60 degrees
Lateral step-ups (6") height
Front step-downs (6") height
Knee extension 90-30 degrees
Hip abd/adduction
Vertical squats
Bicycle
Toe-calf raises
Stairmaster
Pool running/jobbing program
Walking longer distance
2. May return to work depending on job demands (physician decision)

B. Week 20

1. Continue all exercises listed above

V. RETURN TO ACTIVITY PHASE (Weeks 23-52)

Goals: Gradual return to functional activities

Criteria for progress to Phase V:

1. Full non-painful ROM
2. No swelling
3. Normal patellar mobility
4. Strength: isokinetics test – satisfactory result 10-15% of appropriate leg

A. Week 23 and Beyond

1. Exercises: continue all exercises listed above
2. Initiate light jobbing (if appropriate and physician clearance)
3. May return to light aerobic conditioning

B. Week 26-30

1. Return to recreational sports (physician decision)