



## REHABILITATION GUIDELINES

### **KNEE ARTHROSCOPY, MICROFRACTURE OF THE PATELLA OR TROCHLEA**

Edward S. Chang, MD  
Orthopaedics and  
Sports Medicine

#### **OFFICE LOCATIONS**

**TUESDAY**  
8100 Innovation Park  
Drive  
Fairfax, VA 22031  
T 703-970-6464  
F 703-970-6465

**WEDNESDAY**  
1005 N. Glebe Rd  
Suite 410  
Arlington, VA 22201  
T 571-414-6940  
F 703-970-6465

**THURSDAY**  
**FRIDAY (AM only)**  
6355 Walker Lane  
Suite 300  
Alexandria, VA 22310  
T 703-797-6980  
F 703-797-6981

#### **CLINICAL NURSE**

Eileen Perri, BSN  
(703) 797-6918

The intent of this protocol is to provide the therapist with guidelines of the post-operative rehabilitation course after an arthroscopic meniscectomy. It should not be a substitute for one's clinical decision making regarding the progression of a patient's post-operative course based on their physical exam findings, individual progress, and/or the presence of post-operative complications. The therapist should consult the referring physician with any questions or concerns.

#### **INDIVIDUAL CONSIDERATIONS:**

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#### **PHASE I (Weeks 0-4)**

##### **Weight-bearing Status:**

Non-weight-bearing using 2 crutches and knee brace locked in extension for the first 48 hours then, weight-bearing as tolerated with 2 crutches and knee brace locked 0° extension for one week. After the first post-operative visit, brace may be set at 0-30° maximum flexion for ambulation.

##### **Range-of-motion:**

CPM (Continuous Passive Motion) 0-30° for the first 48 hours then, increase 10° per day as tolerated. Discontinue CPM after 6 weeks if full flexion achieved  
Passive knee flexion and knee extension range-of-motion  
Wall slides or heel slides to increase knee flexion range-of-motion  
Wall slides and passive knee extension with heel supported to increase extension range-of-motion

##### **Mobilization:**

Patellar mobilization, as needed

##### **Stretching Exercises:**

Hamstring, iliotibial band, and calf stretches, as needed

##### **Strengthening Exercises:**

Isometric quadriceps sets  
Isometric hamstring sets at 70-90° of knee flexion  
Straight leg raises  
Hip adduction  
Ankle plantar flexion with tubing resistance



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**PHASE II (Weeks 4-12)**

**Weight-bearing Status:**

Full weight-bearing with knee brace 0-30°  
Discontinue knee brace at 6 weeks if full quad control achieved

**Range-of-Motion and Stretching Exercises:**

Continue knee extension range-of-motion exercises, as needed  
Full knee flexion and extension range-of-motion by 4-6 weeks post surgery

**Strengthening Exercises:**

Closed-kinetic-chain exercises  
Progress with strengthening exercises as above  
Active knee extension  
Hamstring curls  
Seated toe raises with resistance  
Pool exercises, if available  
Stationary bicycle with seat elevated  
Hip abduction, added during the 4<sup>th</sup> to 5<sup>th</sup> week, if fair quadriceps contraction is present

**PHASE III (Weeks 12-16)**

**Strengthening Exercises:**

Continue progression of strengthening exercises  
Closed kinetic chain

- Standing toe raises
- Partial squats
- Leg press exercise
- Step exercises: step-down, step-up, lateral stepping

Walking, Stepper machine  
Open kinetic chain

- Isokinetic training: 200+ speed

**PHASE IV (4+ Months)**

Begin Running program if cleared by physician (see below)

**PHASE V (5-6 Months)**

Begin Agility and Plyometric program if cleared by physician (see below)

**PHASE VI (7-8 Months)**

Return to athletics when cleared by Dr. Chang



## REHABILITATION GUIDELINES

### **RETURN TO RUNNING PROGRAM**

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#### **PHASE I – Warm Up Walk 15 Minutes, Cool Down Walk 10 Minutes**

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Day	1	2	3	4	5	6	7
<b>Week 1</b>	<b>W5/J1x5*</b>		<b>W5/J1x5</b>		<b>W4/J2x5</b>		<b>W4/J2x5</b>
<b>Week 2</b>		<b>W3/J3x5</b>		<b>W3/J3x5</b>		<b>W2/J4x5</b>	
<b>Week 3</b>	<b>W2/J4x5</b>		<b>W1/J5x5</b>		<b>W1/J5x5</b>		<b>Return to Run</b>

Key: W=walk, J=jog

\*W5/J1x5= Walk (5 minutes), Jog (1 minute); repeat 5 times

#### **PHASE II – Warm Up Walk 15 Minutes, Cool Down Walk 10 Minutes**

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Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>1</b>	<b>20 min</b>		<b>20 min</b>		<b>20 min</b>		<b>25 min</b>
<b>2</b>		<b>25 min</b>		<b>25 min</b>		<b>30 min</b>	
<b>3</b>	<b>30 min</b>		<b>30 min</b>		<b>35 min</b>		<b>35 min</b>
<b>4</b>		<b>35 min</b>		<b>40 min</b>		<b>40 min</b>	
<b>5</b>	<b>40 min</b>		<b>45 min</b>		<b>45 min</b>		<b>45 min</b>
<b>6</b>		<b>50 min</b>		<b>50 min</b>		<b>50 min</b>	
<b>7</b>	<b>55 min</b>		<b>55 min</b>		<b>55 min</b>		<b>60 min</b>
<b>8</b>		<b>60 min</b>		<b>60 min</b>			

- Recommendations:
  - Runs should occur on softer surfaces during Phase 1
  - Non-impact activity on off days
  - Goal is to increase mileage and then increase pace; avoid increasing two variables at once
  - 10% rule: no more than 10% increase in mileage per week

# REHABILITATION GUIDELINES

## **AGILITY AND PLYOMETRICS PROGRAM**



**Edward S. Chang, MD**  
Orthopaedics and  
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This program is designed as a guide for clinicians and patients through a progressive return-to-run program. Patients should demonstrate > 80% on a Functional Assessment and started a running program prior to initiating this program (after lower extremity surgery).

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### PHASE I: ANTERIOR PROGRESSION

#### **Goals:**

- Safely recondition the knee
- Provide a logical sequence of progressive drills for pre-sports conditioning

#### **Agility:**

- Forward run
- Backward run
- Forward lean in to a run
- Forward run with 3-step deceleration
- Figure 8 run
- Circle run
- Ladder

#### **Plyometrics:**

- Shuttle press: Double leg → alternating leg → single leg jumps
- Double leg:
  - Jumps on to a box → jump off of a box → jumps on/off box
  - Forward jumps, forward jump to broad jump
  - Tuck jumps
  - Backward/forward hops over line/cone
- Single leg (these exercises are challenging and should be considered for more advanced athletes):
  - Progressive single leg jump tasks
  - Bounding run
  - Scissor jumps
  - Backward/forward hops over line/cone

#### **Criteria to Progress:**

- No increase in pain or swelling
- Pain-free during loading activities
- Demonstrates proper movement patterns



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**PHASE II: LATERAL PROGRESSION**

**Goals:**

- Safely recondition the knee
- Provide a logical sequence of progressive drills for the Level 1 sport athlete

**Agility (\*Continue with Phase 1 interventions):**

- Side shuffle
- Carioca
- Crossover steps
- Shuttle run
- Zig-zag run
- Ladder

**Plyometrics:**

- Double leg:
  - Lateral jumps over line/cone
  - Lateral tuck jumps over cone
  - Single leg (these exercises are challenging and should be considered for the more advanced athletes):
    - Lateral jumps over line/cone
    - Lateral jumps with sport cord

**Criteria to Progress:**

- No increase in pain or swelling
- Pain-free during loading activities
- Demonstrates proper movement patterns

**PHASE III: MULTI-PLANAR PROGRESSION**

**Goals:**

- Challenge athlete in preparation for final clearance for return to sport

**Agility:**

- Box drill
- Star drill
- Side shuffle with hurdles

**Plyometrics:**

- Box jumps with quick change of direction
- 90 and 180 degree jumps

**Criteria to Progress:**

- Clearance from MD
- Functional Assessment
  - $\geq 90\%$  contralateral side
- Return to Sport Index