



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

REHABILITATION GUIDELINES

KNEE ARTHROSCOPY, MICROFRACTURE OF THE FEMORAL CONDYLE

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:

PHASE 1 (Weeks 0-2)

Weight-bearing Status:

Non-weight-bearing using 2 crutches and knee brace locked in extension

Range-of-motion:

CPM (Continuous Passive Motion) 0-30°, increase 10° per day as tolerated

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

PHASE (Weeks 2-6)

Weight-bearing Status:

Non-weight-bearing using 2 crutches and knee brace locked in extension

Range-of-Motion and Stretching Exercises:

Continue knee extension range-of-motion exercises, as needed

Discontinue wall slides at 115-120° flexion, progressing to heel slides



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Full knee flexion and extension range-of-motion by 4-6 weeks post surgery
Continue CPM machine

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
Gradually increase resistance on stationary bicycle
Hip abduction, added during the 4th to 5th week, if fair quadriceps contraction is present

PHASE III (Weeks 6-10)

Weight-bearing Status:

Partial weight-bearing:

- 6 weeks: 25% body weight
- 7 weeks: 50% body weight
- 8 weeks: 75% body weight
- 9 weeks: 100% body weight

Progress to full weight-bearing, without assistive device, by 10 weeks post surgery

Wean out of brace once full quad control achieved

Range-of-Motion and Strengthening Exercises:

Discontinue CPM Machine
Continue progression of strengthening exercises
Closed kinetic chain

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

Open kinetic chain

- Isokinetic training: 200+ speed

PHASE IV (Weeks 10-16)

Strengthening Exercises:

Continue progression of strengthening exercises
Walking, Stepper machine

PHASE V (4 Months)

Begin running if cleared by physician (see below)

PHASE VI (5-6 Months)

Begin agility program (see below)

PHASE VII 6-8 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
Week 1	W5/J1x5*		W5/J1x5		W4/J2x5		W4/J2x5
Week 2		W3/J3x5		W3/J3x5		W2/J4x5	
Week 3	W2/J4x5		W1/J5x5		W1/J5x5		Return to Run

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
1	20 min		20 min		20 min		25 min
2		25 min		25 min		30 min	
3	30 min		30 min		35 min		35 min
4		35 min		40 min		40 min	
5	40 min		45 min		45 min		45 min
6		50 min		50 min		50 min	
7	55 min		55 min		55 min		60 min
8		60 min		60 min			

- 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

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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).

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