

Katherine J. Coyner, MD
UCONN Musculoskeletal Institute

Medical Arts & Research Building
263 Farmington Ave.
Farmington, CT 06030
Office: (860) 679-6600
Fax: (860) 679-6649
www.DrCoyner.com

Avon Office
2 Simsbury Rd.
Avon, CT 06001
Office: (860) 679-6600
Fax: (860) 679-6649



MENISCAL TRANSPLANTATION GUIDELINES

PHASE I (Weeks 1-8)

GENERAL GUIDELINES

- Focus on protection of repair during primary revascularization (8 weeks)
- No bathing/swimming until after suture removal
- Showering permitted with water-proof covering over sutures (Tegaderm/OpSite)
- Driving: Off all pain meds when operating vehicle
 - 1 week for automatic cars, left leg surgery
 - 8 weeks for standard/manual cars or right leg surgery
- Crutches for ambulation for 8-12 weeks as determined by MD/PT. Discontinue when gait is normalized (ie – no limp present)
- Brace use (or per MD/PT order):
 - 0-4 weeks: Locked in full extension NWB
 - 4-6 weeks: Locked in full extension TDWB
 - 6-8 weeks: Unlocked for gait training/household distances PWB
 - Sleep with brace locked in extension for 6 weeks
 - 8-12 weeks: Brace unlocked WBAT with two crutches
- Return to work as determined by MD/PT dependent on work demands
- Use ice and elevation for swelling/pain control
- No open-chain hamstring strengthening for 3 months
- No terminal knee extension exercises for 3 months

GOALS

- Protect repaired structures
- Educate patient on rehab progression
- Decrease inflammation and swelling
- Control pain
- Full active and passive knee extension/hyperextension ROM
- Passive knee flexion to 90 degrees
- Restore gait on level surfaces within precautions
- Restore full patellar mobility

EXERCISES

- Quad sets
- Ankle pumps with resistance bands
- Patellar mobilizations
- Heel slides 0-90 degrees

- Hip SLR in 4 planes (in brace until can perform without quad lag)
- Hamstring stretch in NWB
- Gastroc stretch in NWB
- Aquatic therapy after sutures removed

CRITERIA TO ADVANCE TO PHASE II

- Knee ROM: 0-90 degrees
- Perform SLR without quad lag
- Normal patellar mobility
- Minimal swelling/inflammation

PHASE II (Weeks 8-12)

GOALS

- Eliminate inflammation and swelling
- Full knee ROM (0-135 degrees)
- Active knee hyperextension
- Normal gait on all surfaces without brace or assistive device
- Improve lower extremity strength
- PRECAUTION: limit shear force to meniscal transplant with squatting activities

EXERCISES

- Advance ROM/flexibility
- Stationary bike for ROM/strength
- Closed kinetic chain quad/hamstring strengthening (wall sits, step-ups, mini-squats, leg press, lunges, single leg squats) (0-45 degrees)
- Active knee extension (50-90 degrees). Avoid terminal knee extension.
- Progress hip and calf strengthening
- Initiate proprioceptive exercises (single leg balance, ball toss, balance beam, BOSU, Airex)
- Cross-training machines for conditioning
- Advanced aquatic exercises

CRITERIA TO ADVANCE TO PHASE III

- Full knee ROM, including AKHE
- Demonstrates good quad strength with exercises
- Normal gait on all surfaces at community level distances
- Minimal swelling/inflammation
- No pain with exercises

PHASE III (Weeks 12-36)

GOALS

- Increase strength to >85% non-involved extremity
- Initiate open kinetic chain hamstring and terminal knee extension exercises
- Advance proprioception exercises
- Improve aerobic endurance
- Initiate plyometric exercises
- Return to running progression

EXERCISES

- Hamstring curls 0-60 degrees of flexion
- Spin bike
- Cybex training
- Pre-running exercises (low skips, punch steps, double punch steps, hurdle walks, high skips, kickbacks, step-overs)
- Advance proprioceptive exercises (BOSU, single leg dynamic balance, dual task balance)
- Agility drills (ladder, side shuffles, crossovers, backwards run, quick start/stops, zig-zags, cutting)
- Jump training (shuttle training, trampoline, landing technique, box jumps, single leg hops, tuck jumps)
- Return to running – treadmill, with transition to level outdoor surfaces
- Swimming (no breaststroke)
- Continue strengthening - advance resistance and repetitions (ball hamstring curls, single leg press, core stabilization)

CRITERIA TO ADVANCE TO PHASE IV

- Lower extremity strength greater than or equal to 85% of non-involved by Cybex test
- Single leg hop test greater or equal to 85% of non-involved
- No pain with forward running, agilities, jump training, or strengthening
- Good knee control with single leg dynamic proprioceptive activities

PHASE IV (Weeks 36-full return)

GOALS

- Full return to sport activity
- Equal bilateral lower extremity strength
- Equal bilateral balance, proprioception, power in lower extremity
- 100% global function rating

EXERCISES

- Advance above exercises
- Gradually increase level of participation in sports-specific activities
- Running on all surfaces