

Hospital for Special Surgery
HSS-Main Campus
523 East 72nd St Ground Fl.
New York, NY 10021



Hospital for Special Surgery
HSS-Brooklyn
148 39th St, 7th Fl.
Brooklyn, NY 11232

DR. GABRIELLA ODE

Sports Medicine & Shoulder Surgery
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**PHYSICAL THERAPY PROTOCOL
MENISCAL REPAIR**

<p>Procedure</p>	<p>Date of Surgery: _____</p> <p>Surgery Type (s):</p> <p><input type="checkbox"/> Meniscal repair (including root repair)</p> <p><input type="checkbox"/> ACL Reconstruction</p> <p><input type="checkbox"/> Osteochondral Allograft</p> <p><input type="checkbox"/> Osteochondral Autograft</p> <p><input type="checkbox"/> Cell Based Cartilage Repair (MACI, DeNovo, Cartiform, BioCartilage)</p> <p>Brace use: ___ weeks</p> <p><input type="checkbox"/> TTWB <input type="checkbox"/> PWB x ___ weeks</p> <p><input type="checkbox"/> WBAT</p> <p>Notes:</p>	<p style="text-align: center;">PLAN</p> <p>Physical Therapy for R L B/L Lower Extremity 2-3x Per Week x 12 Weeks</p>
<p>General Guidelines</p>	<p>Please read and follow guidelines below. Progression is both criteria-based and patient specific. Phases and time frames are designed to give the clinician a general sense of progression. Phases and time frames are designed to give the clinician a general sense of progression. Concomitant injuries such as degenerative joint disease may alter the guidelines. Follow physician's modifications as prescribed</p>	

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<p>PHASE I (0-1 Weeks)</p>	<p>GENERAL</p> <ul style="list-style-type: none">▪ Ice and modalities to reduce pain and inflammation▪ Elevate the knee above the heart for the first 3 to 5 days▪ Initiate patella mobility drills▪ Quadriceps setting focusing on VMO restoration▪ Multi-plane open kinetic chain straight leg raising▪ Gait training with crutches	<p>PRECAUTIONS</p> <ul style="list-style-type: none">▪ Passive range of motion 0-90▪ Use crutches toe touch-weight bearing for 2 weeks.▪ Brace locked to 0 degrees for ambulation until pt exhibits excellent quad control; brace can then be unlocked to 90 degrees when there is good quad control (by no later than week 4).▪ Okay for low profile brace worn through week 6 as needed (depending on excellent quad control and elimination of antalgic gait)
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PHASE II
(Weeks 1-6)

GENERAL

- Maintain program as outlined in week 0 to 1
- Continue with modalities to control inflammation
- Initiate global lower extremity stretching program
- Proprioception drill emphasizing neuromuscular control
- Multi-plane ankle strengthening

GOALS

- Progressive Stretching and Early Strengthening
- Control post-operative pain / swelling
- Progress passive/active range of motion 0 – 90° for first **four** weeks then advance to 120
- Prevent Quadriceps inhibition
- Restore normal gait
- Normalize proximal musculature muscle strength
- Independence in home therapeutic exercise program
- Progress aerobic endurance

PRECAUTIONS

- Ambulate TTWB in brace locked in extension for weeks 0-2.
- Progressive weight bearing with crutches after week 2 –
 - *In general, start patient with TTWB with 2 crutches for first week then progress to WBAT with 1 crutch*
 - *(in opposite arm) x 1 week and then discontinue crutches starting at end of week 4 if gait and quad function allow (nonantalgic gait)*
- Postoperative low profile bracing for 6 weeks postoperatively. Discontinue once good quad control.
- Avoid neglect of range of motion exercises

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- Begin stationary bike and pool exercise program (when incisions healed)

TREATMENT RECOMMENDATIONS

- Active – Assistive Range of Motion Exercises (Pain-free ROM)
- Towel extensions
- Patella mobilization all planes
- Progressive Weight Bearing as Tolerated with crutches starting after day 14 (D/C crutches when gait is non-antalgic)
- Implement reintegration exercises emphasizing core stability
- If available, underwater treadmill system (gait training) if incision benign
- Quadriceps re-education (Quad Sets with EMS or EMG)
- Multiple Angle Quadriceps Isometrics (Bilaterally – Submaximal, Avoid lesion)
- Short Crank ergometry → Standard ergometry
- SLR's (all planes) in brace.
- Hip progressive resisted exercises
- Leg Press (60→0° arc) Bilaterally
- Pool exercises
- Cryotherapy
- Plantar Flexion Theraband
- Lower Extremity Flexibility exercises
- Upper extremity cardiovascular exercises as tolerated
- Home therapeutic exercise program: Evaluation based
- Emphasize patient compliance to home therapeutic exercise program and weight bearing progression

CRITERIA FOR ADVANCEMENT:

- Normalized gait pattern
- ROM 0 → 120° after week 4
- Proximal Muscle strength 5/5
- SLR (supine) without extension lag

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**PHASE III
 (Weeks 6-12)**

GENERAL

- Normalize gait pattern
- Advance stationary bike program; begin treadmill walking and elliptical trainer; no running and impact activity
- Initiate closed kinetic chain exercises progressing bilateral to unilateral
- Initiate proprioception/balance training

GOALS

- ROM 0° → WNL
- Normal patella mobility
- Ascend 8" stairs with good control without pain (may need to modify for patellar & trochlear lesions)

TREATMENT RECOMMENDATIONS

- Continue Progressive Weight Bearing as Tolerated /Gait Training with crutches (if needed)
- Brace / Patella sleeve per therapist and patient preference
- Underwater treadmill system (gait training)
- Gait unloader device

PRECAUTIONS

- Avoid descending stairs reciprocally until adequate quadriceps control & lower extremity alignment is demonstrated
- Avoid pain with therapeutic exercise & functional activities

MINIMUM CRITERIA FOR ADVANCEMENT:

- ROM WNLs
- Demonstrate ability to descend 8" step
- Good patella mobility

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	<ul style="list-style-type: none"> ▪ AAROM exercises ▪ Patella mobilizations ▪ Leg Press (90→0° arc) Bilaterally → Eccentric ▪ Mini Squats ▪ Retrograde treadmill ambulation ▪ Proprioception/Balance training: <ul style="list-style-type: none"> ○ Proprioception board / Contralateral Theraband Exercises / Balance systems ▪ Initiate Forward Step Up program ▪ Stairmaster ▪ SLR's (progressive resistance) ▪ Lower extremity flexibility exercises ▪ OKC knee extension to 40° – (pain/crepitus free arc) ▪ Home therapeutic exercise program: Evaluation based 	
<p>PHASE IV (Weeks 12-24)</p>	<p>GENERAL</p> <ul style="list-style-type: none"> ▪ Weeks 12-16: <ul style="list-style-type: none"> ○ Initiate gym strengthening-beginning bilateral progressing to unilateral <ul style="list-style-type: none"> ▪ Leg press, heel raises, hamstring curls, squats, lunges ▪ Weeks 16 to 24: <ul style="list-style-type: none"> ○ Continue with advanced strengthening ○ Begin functional cord program <p>GOALS</p> <ul style="list-style-type: none"> ▪ Demonstrate ability to descend 8" stairs with good leg control without pain ▪ 85% limb symmetry on Isokinetic testing & Forward Step Down Test ▪ Return to normal ADL 	<p>PRECAUTIONS</p> <ul style="list-style-type: none"> ▪ Avoid pain with therapeutic exercise & functional activities ▪ Avoid running till adequate strength development and MD clearance.

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- Improve lower extremity flexibility
- Treatment Recommendations:**
- Progress Squat program
 - Initiate Step Down program
 - Leg Press (90 - 0° emphasizing eccentrics)
 - OKC knee extensions 90
 - 0° (pain/crepitus free arc)
 - Advanced proprioception training (perturbations)
 - Agility exercises (sport cord)
 - Elliptical Trainer
 - Retrograde treadmill ambulation / running
 - Hamstring curls / Proximal strengthening
 - Lower extremity stretching
 - Forward Step Down Test (NeuroCom)
 - Isokinetic Test
 - Home therapeutic exercise program: Evaluation based

CRITERIA FOR ADVANCEMENT:

- Ability to descend 8" stairs with good leg control without pain
- 85% limb symmetry on Isokinetic testing & Forward Step Down Test

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<p>PHASE V (Weeks 24+)</p>	<p>GENERAL</p> <ul style="list-style-type: none"> ▪ Follow-up examination with physician ▪ Implement sport specific multi-directional drills ▪ Continue with lower extremity strengthening, cardiovascular training, and flexibility <p>GOALS</p> <ul style="list-style-type: none"> ▪ Lack of apprehension with sport specific movements ▪ Maximize strength and flexibility as to meet demands of individual's sport activity ▪ Isokinetic & Hop Testing > 85% limb symmetry <p>TREATMENT RECOMMENDATIONS</p> <ul style="list-style-type: none"> ▪ Continue to advance LE strengthening, flexibility & agility program ▪ Forward running ▪ Plyometric program ▪ Brace for sport activity (MD preference) ▪ Monitor patient's activity level throughout course of rehabilitation ▪ Reassess patient's complaint's (i.e. pain/swelling daily – adjust program accordingly) ▪ Encourage compliance to home therapeutic exercise program ▪ Home therapeutic exercise program: Evaluation based 	<p>PRECAUTIONS</p> <ul style="list-style-type: none"> ▪ Avoid pain with therapeutic exercise & functional activities ▪ Avoid sport activity till adequate strength development and MD clearance ▪ Be conscious of Patellofemoral overload with increased activity level <p>CRITERIA FOR DISCHARGE</p> <ul style="list-style-type: none"> ▪ Isokinetic & Hop Testing > 85% limb symmetry ▪ Lack of apprehension with sport specific movements ▪ Flexibility to accepted levels of sport performance ▪ Independence with gym program for maintenance and progression of therapeutic exercise program at discharge
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