



REHABILITATION PROTOCOL: MENISCUS ROOT REPAIR

DR. KEVIN SHEPET

PHASE I (Surgery to 8 weeks after surgery)

Appointments	<ul style="list-style-type: none"> • Rehabilitation appointments begin within 1-3 days post operatively and then approximately one time per week
Rehabilitation Goals	<ul style="list-style-type: none"> • Protection of the post-surgical knee • Eliminate effusion • Restore leg control
Precautions	<ul style="list-style-type: none"> • <u>Weightbearing</u>: touchdown weight bearing with crutches • <u>Brace</u>: post-operative extension brace for 6 weeks. Wean from brace locked to unlocked to no brace after 6 weeks and as patient establishes leg control, pain control and safe gait mechanics • ROM: Goal of 0-90°
Passive and Assisted ROM Exercises	<ul style="list-style-type: none"> • Knee extension on a bolster • Prone hangs • Supine wall slides with no push into wall • Knee flexion off the edge of the table assisted by other leg or person
Suggested Therapeutic Exercise	<ul style="list-style-type: none"> • Quadriceps sets • Hamstring sets • Straight leg raises • 4-way leg lifts in standing with brace on for balance and hip strength • Heel slides to 90° • Abdominal isometrics
Cardiovascular Exercise	<ul style="list-style-type: none"> • Upper body circuit training or upper body ergometer
Progression Criteria	<ul style="list-style-type: none"> • 8 - 10 weeks after surgery • Pain free gate without crutches • No effusion

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PHASE II (Begin after meeting Phase I criteria, usually 8 weeks after surgery)

Appointments	<ul style="list-style-type: none"> • Rehabilitation appointments are every 1-2 weeks
Rehabilitation Goals	<ul style="list-style-type: none"> • Single leg stand control • Normalize gait • Good control and no pain with functional movements, including step up/down, squat, partial lunge (between 0° and 60° of knee flexion)
Precautions	<ul style="list-style-type: none"> • No forced flexion with passive range of motion with knee flexion or weight bearing activities that push the knee past 60° of knee flexion • Avoid post-activity swelling • No impact activities
Suggested Therapeutic Exercise	<ul style="list-style-type: none"> • Non-impact balance and proprioceptive drills • Stationary bike • Gait drills • Hip and core strengthening • Stretching for patient-specific muscle imbalances • Quadriceps strengthening, making sure that closed chain exercises occur between 0° and 60° of knee flexion
Cardiovascular Exercise	<ul style="list-style-type: none"> • Non-impact endurance training: stationary bike, Nordic track, swimming, deep water running or cross trainer
Progression Criteria	<ul style="list-style-type: none"> • Normal gait on all surfaces • Ability to carry out functional movements without unloading the affected (injured) leg or pain, while demonstrating good control • Single leg balance greater than 15 seconds

PHASE III (Begin after meeting Phase II criteria, usually 12-16 weeks after surgery)

Appointments	<ul style="list-style-type: none"> • Rehabilitation appointments are once every 1-2 weeks
Rehabilitation Goals	<ul style="list-style-type: none"> • Good control and no pain with sport and work specific movements, including impact
Precautions	<ul style="list-style-type: none"> • Post-activity soreness should resolve within 24 hours • Avoid post-activity swelling • Avoid posterior knee pain with end range knee flexion
Suggested Therapeutic Exercise	<ul style="list-style-type: none"> • Low amplitude low velocity agility drills: forward and backward skipping, side shuffle, skater's quick stepping, carioca, cross overs, backward jog, forward jog • Closed chain strengthening for quadriceps and glutes, progressing from double leg strengthening to single leg strengthening: lunge progressions and single leg squat progressions • Single leg balance exercises and progressions, progressing from stationary to deceleration into holding posture and position

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	<ul style="list-style-type: none"> • At approximately 12-14 weeks, initiate low amplitude landing mechanics: med ball squat catches, shallow jump landings, chop and drop stops, etc • Hip strengthening – especially oriented at neuromuscular control in prevention of hip adduction at landing and stance • Core strength and stabilization – especially oriented at preventing frontal plane trunk lean during landing and single leg stances
Cardiovascular Exercise	<ul style="list-style-type: none"> • Replicate sport or work specific energy demands
Progression Criteria	<ul style="list-style-type: none"> • Dynamic neuromuscular control with multi-plane activities without pain or swelling

PHASE IV (Begin after meeting Phase III criteria, usually 20-24 weeks after surgery)

Appointments	<ul style="list-style-type: none"> • Rehabilitation appointments are once every 2-4 weeks
Rehabilitation	<ul style="list-style-type: none"> • Normal multi-planar high velocity without side to side differences or compensations • Normal double leg landing control without side to side differences or compensations • Adherence to home exercise program
Precautions	<ul style="list-style-type: none"> • No active reactive swelling or joint pain that lasts more than 12 hours
Suggested Therapeutic Exercise	<ul style="list-style-type: none"> • Progressive agility drills: forward and backward skipping, side shuffle, skater’s quick stepping, carioca, cross overs, backward jog, forward jog • Landing mechanics – progressing from higher amplitude double leg to single leg landing drills. Start uni0-planar and gradually progress to multi-planar • Movement control exercise beginning with low velocity, single plane activities and progressing to higher velocity, multi-plane activities • Unanticipated movement control drills, including cutting and pivoting • Agility ladder drills • Strength and control drills related to sport specific movements • Sport/work specific balance and proprioceptive drills • Hip strengthening – especially oriented at neuromuscular control in prevention of hip adduction at landing and stance • Core strengthening and stabilization – especially oriented at preventing frontal plane trunk lean during landing and single leg stance • Stretching for patient specific muscle imbalances
Cardiovascular Exercise	<ul style="list-style-type: none"> • Progressive running program. Design to use sport specific energy systems
Return to Sport/Work Criteria	<ul style="list-style-type: none"> • Patient may return to sport after receiving clearance from the orthopedic surgeon and the physical therapist/athletic trainer. Progressive testing will be completed. The patient should have less than 15% difference in Biodex strength test, force plate jump and vertical hip tests, and functional horizontal hop tests.

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