



REHAB PROTOCOL FOR MENISCAL REPAIRS

PHASE I (surgery to 6 weeks after surgery)

Appointments	<ul style="list-style-type: none"> • Rehabilitation appointments begin 3-5 days post-operatively and then • approximately 1 time per week
Rehabilitation Goals	<ul style="list-style-type: none"> • Protection of the post-surgical knee • Restore normal knee extension • Eliminate effusion (swelling) • Restore leg control
Precautions	<ul style="list-style-type: none"> • Bilateral (two) axillary crutches • Ambulation TTWB (toe-touch weight bearing) with crutches • Begin progressing to full weight bearing weeks 5-6 • Brace settings: • Week 1-2: 0-30 degrees • Week 3-4: 0-60 degrees • Week 5-6: 0-90 degrees
Suggested Therapeutic Exercise	<ul style="list-style-type: none"> • Quad sets, isometric knee extension at multiple angles in allowed range of motion and as tolerated at patellofemoral (PF) joint • Isometric and OKC hamstring strengthening in pain free ROM • Hip 4-way SLR (straight leg raise) • Ankle and foot stretching and strengthening in non-weight bearing • Scar and soft tissue massage, patella mobilizations • NMES (neuromuscular electrical stimulation) for quadriceps atrophy, strengthening as needed • HVPC (high volt pulsed current) for effusion (swelling) reduction as needed • Cryotherapy 6-8 times per day for 15 to 20 minutes each
Cardiovascular Exercise	<ul style="list-style-type: none"> • Upper body circuit training or upper body ergometer

Progression Criteria	<ul style="list-style-type: none"> • Hip flexion SLR without knee extension lag • Full knee extension • Knee flexion to 90° • Minimal joint effusion • Ambulation without assistive device or limp
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PHASE II (6 weeks after surgery, when Phase I criteria met)

Appointments	<ul style="list-style-type: none"> • Rehabilitation appointments are 1-2 times per week
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 • Scar and soft tissue massage, patella mobilizations • SLS (single limb stance), BAPS, unstable surfaces • Joint repositioning • NMES for quadriceps atrophy, strengthening as needed • HVPC for effusion reduction as needed

	<ul style="list-style-type: none"> • Cryotherapy 6-8 times per day for 15 to 20 minutes each
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"> • Knee ROM 0°-120° • No effusion • No pain • Good eccentric control of involved knee • Isometric quad strength 70% of non-involved side at 60° knee flexion • Isometric hamstring strength 70% of non-involved side at 60° knee flexion • Isokinetic quad strength 70% of non-involved side tested at 300°/sec • Isometric hamstring/quad ratio $\geq 60\%$ tested at 60° knee flexion

PHASE III (3 months after surgery, when Phase II criteria met)

Appointments	<ul style="list-style-type: none"> • Rehabilitation appointments are once every 1 to 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"> • Impact control exercises beginning 2 feet to 2 feet, progressing from 1 foot to the other and then 1 foot to the same foot • Movement control exercises beginning with low velocity, single plane activities and progressing to higher velocity, multi-plane activities • Strength and control drills related to sport specific movements

	<ul style="list-style-type: none"> • Sport/work specific balance and proprioceptive drills • Hip and core strengthening • Stretching for patient specific muscle imbalances
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 • Isokinetic quad strength 90% of non-involved side tested at 300°/sec

PHASE IV (4 months after surgery, when Phase III criteria met)

In addition to ongoing strength, balance, agility, and cardio conditioning, initiate sport-specific plyometric activities as tolerated such as:

Soccer/Football: 2 foot ankle hop, double-leg hop, front barrier hop, lateral barrier hop, single-leg hop, power skip, backward skip, double-arm alternate-leg bound, and cycled split squat jump

Basketball/Volleyball: 2 foot ankle hop, double-leg hop, squat jump, double-leg vertical jump, single-leg hop, single-leg vertical jump, power skip, backward skip, double-arm alternate-leg bound, alternate-leg push off box drill, and side-to-side push-off box drill

Baseball/Softball/Overhead throwing sports: 2 foot ankle hop, double-leg hop, front barrier hop, lateral barrier hop, single-leg hop, power skip, backward skip, double-arm alternate-leg bound, cycled split squat jump, and return to throwing program