

9-12 weeks after surgery

	<p>Hamstring curls</p> <p>Knee Static Lunge (full range) > dynamic lunge > lunge walking all with proper trunk and leg alignment Plyobox back lunge Backward step up Leg Press (double leg > single leg) Quick walk forward/backward Quick side stepping Quick lunge forward with control Eccentric step down with control on 15 > 20cm step</p> <p>Calf Eccentric heel drops</p> <p>Proprioception Single leg stance drills on BOSU > add on upper body movements</p> <p>Cardiovascular Fitness Stationary Bike: increased resistance and time parameters Treadmill walk: increase incline > quick walk > running</p>
Progression Criteria	<p>Normal jogging gait Good single leg balance No active inflammation or reactive swelling post exercise</p>

12-16 weeks after surgery

Appointments	Rehabilitation appointments as needed. Usually 1 time every 1-2 weeks
Rehabilitation Goals	<p>Continue with flexibility exercises for the lower chain Continue strengthening of the lower chain Sport specific quadriceps & hamstrings strengthening Sport specific proprioception training Sport specific cardiovascular fitness</p>
Precautions	No reactive swelling or joint pain that lasts more than 12 hours
Suggested Therapeutic Exercise	<p>Continue with concentric and eccentric strengthening of hamstrings and quadriceps, working through full & inner range Hip strengthening - especially oriented at neuromuscular control in prevention of hip adduction at landing and stance Backward lunge > backward lunge walking Single leg drop (progressively increase height) Landing mechanics (double leg > single leg) (single plane > multi plane) Split squat jumps – progress to BOSU</p> <p>Agility training Ladder drills (forward and backward skipping, side shuffle, skater's quick stepping, carioca, cross overs, backward jog, forward jog) Side step-overs (hurdle) > side hop-overs</p>

	<p>Carioca steps (foot crossing steps) Skipping Hopping 2 leg > 1 leg Strength and control drills (sport/work specific)</p> <p>Proprioception Continue progressing skill difficulty (sport/work specific) Single leg stance – tap down clock drill with mini cones BOSU: 1 leg balance with upper body or opposite leg skill</p> <p>Cardiovascular Fitness Bike – standing with interval training Jogging – straight on flat ground, no cuts/no downhill Treadmill – jog > interval running > running</p>
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16-20 weeks after surgery

Appointments	Rehabilitation appointments are once every 2-4 weeks
Rehabilitation Goals	<p>Normal multiplanar high velocity exercises (without side to side differences or compensations) Normal double leg landing control (without side to side differences or compensations) Adherence to HEP</p>
Precautions	No reactive swelling or joint pain that lasts more than 12 hours
Suggested Therapeutic Exercise	<p>Landing mechanics - higher amplitude double leg > single leg landing drills (Uni-planar > multi-planar) Movement control exercise, low velocity + single plane activities > higher velocity + multi-plane activities Unanticipated movement control drills: cutting and pivoting Continue progressing strength and control drills (sport specific movements) Balance and proprioceptive drills (sport/work specific movements) Hip strengthening (develop neuromuscular control in prevention of hip adduction at landing and stance) Core strength and stabilization (to prevent trunk leaning forward during landing and single leg stance) Stretching</p> <p>Plyometrics and Agility Forward and lateral hopping (single leg) Vertical jumps (single leg) Box hop up /down Box jump down with sprint forward Box drop jump 2 legs (with proper form) > drop jump with vertical hop (maximum height) Single leg drop landing (increasing step height)</p> <p>Proprioception Forward hop and lateral hop (maintain balance for 5 sec on landing) Cutting drills with quick stop and maintain balance</p> <p>Cardiovascular Training</p>



	Stationary bike: Increased distance, time and resistance parameters (sport specific) Treadmill: running > sprinting Jogging and running (on an uneven surface and sudden change of direction) Acceleration and deceleration running Cycling outdoors Swimming
Progression Criteria	Return to sport criteria <ol style="list-style-type: none"> 1. Clearance from the orthopedic surgeon and physical therapist/athletic trainer 2. Progressive testing will be completed Return to sport test <ul style="list-style-type: none"> - Quads strength within 10% of the uninjured side - 4 single leg hop tests; with no more than 10% difference between sides - Triple hop test - Crossover triple hop test - Hop tests: single hop, 6-m timed hop, triple hop, crossover hop

24-32 weeks after surgery

Continue addressing patient's physical impairment and performance needs based on their work and sport requirements.

Patients are safe to return to sports and team practices with/without measures and limitations set by the physical therapist. This may include time, volume or specific activity.

References

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