

MENISCUS ROOT REPAIR

Physical Therapy, Strength and Conditioning

PHASE I: MAXIMUM PROTECTION (WEEKS 0 TO 6)

- Toe touch weight bearing on operative leg with crutches with brace.
- Hinged knee brace 0-90° for 6 weeks.

Weeks 0-2

Goals

- Reduce inflammation
- Normalize patella mobility with manual mobilizations
- Full extension both passive and active
- Good quadriceps activation
- No extension lag
- 0-90° of knee flexion for 6 weeks

Exercise Progression

- Extension—heel props for full extension as needed
- Flexion—off table or wall slides to 90°
- Quadriceps setting using NMES as needed
- Multi-plane straight leg raises
- Bilateral calf raises

Cardiovascular Exercise

- Stationary biking

Recommended Loading

- Short but frequent bouts of ROM and quadriceps activation 3+x/day

Weeks 2-6

Goals

- Reduce inflammation
- Full knee extension/hyperextension
- Good quadriceps control with no extension lag
- 0-90° of knee flexion

Exercise Progression

- Continue with 0-2 week program
- Extension—continue with heel props or add prone hangs (as needed)
- Flexion—wall or heel slides
- Ball bridge and/or isometric hamstring activation

Cardiovascular Exercise

- Stationary biking (knee flexion < 90°)

PHASE II: PROGRESSIVE STRETCHING AND EARLY STRENGTHENING (WEEKS 6 TO 12)

Goals

- Discontinue knee brace
- Full knee extension/hyperextension
- Gradual progression to full knee flexion
- Normalize gait mechanics
- Normalize patellofemoral joint and scar mobility

Exercise Progression

- 50% partial weight bearing with crutches/walker weeks 6-8
- Full weight bearing after 8 weeks
- Extension—heel props and prone hangs as needed
- Flexion—increasing to full as tolerated
- Bilateral squat progression—partial range, focus on proper alignment
- Multi-plane open and closed kinetic chain hip strengthening
- Step-up progression—focus on alignment, front, lateral step-up, and step up/over (6", 8", 10", 12" progression)
- Hamstring activation with bridge on floor, ball or box
- Progress to unilateral heel raise off the floor then off a step
- Proprioception drills

Cardiovascular Exercise

- Stationary biking
- Treadmill/outdoor walking with focus on proper gait mechanics

Core Program

- Front plank—full, may advance to alternating leg lift
- Bridge—marching or single leg
- Quadruped alternating arm/leg

PHASE III: ADVANCED STRENGTHENING AND ENDURANCE TRAINING (WEEKS 12 TO 16)

Goals

- Control inflammation with increasing loads
- Full knee flexion and extension with terminal stretch
- Progressive strengthening
- Increase muscular endurance

Movement Prep

- Foam roller
- Controlled movement series

Exercise Progression

- Weighted squat progression—gradually increase depth and resistance
- Single leg squat/lunge progression (dips, retro, walk and split), focus on eccentric control and alignment.
- Monster walks

Core Program

- Front plank—full, may advance to alternating leg lift
- Bridge—marching or single leg
- Side plank—full
- Dead bug progression
- Quadruped alternating arm-leg

Cardiovascular Exercise

- Stationary biking
- Treadmill/outdoor walking with focus on proper gait mechanics
- Arc trainer or elliptical

Sports Specific Activity Progression

- Basic ladder series
- Low amplitude bilateral hops
- Skipping
- Higher intensity interval work with CV program—week 12-14

Recommended Loading

- ROM: 1-2x/day
- Strength: 3x/week on closed chain loading
- Cardiovascular: 20-45 minutes 5x/week with moderate intensity and intervals.

PHASE IV: ADVANCE STRENGTHENING AND RUNNING PROGRESSION (WEEKS 16 TO 20)**Goals**

- Control inflammation with increasing loads
- Progressive strengthening
- Increase muscular strength, power and endurance

Movement Prep

- Foam roller
- Controlled movement series

Exercise Progression

- Increasing loads from phase III

Core Program

- Increasing loads from phase III

Non-impact Cardiovascular Exercise

- Stationary biking
- Arc trainer or elliptical
- Swimming

Running Progression

- Advanced ladder series
- Walk/jog interval
- Linear acceleration/deceleration
- Sprinting
- Change of direction and lateral agility

Jumping Progression (*gradual progression)

- Low amplitude bilateral single response jumps
- Bilateral multiple response jumps
- Unilateral single response jumps

Sports Specific Activity Progression

- Non-contact and non-reactive field/court progression 16-20 weeks

Sports Test and Follow-up with Physician

- Follow-up examination with the physician
- Sports test for return to competition at 5-6 months