Knee Arthroscopy/Lateral Release Rehabilitation

This rehabilitation protocol is designed for patients who have undergone knee arthroscopy or arthroscopic lateral release. The intensity allowed and the time frame required for the rehabilitation process is dependent upon the surgical procedure and the clinical assessment of Dr. Stein. The protocol is divided into phases. Each phase is adaptable based on the individual patient and special circumstances.

The overall goals of the surgical procedure and rehabilitation are to:

- Control pain, swelling, and hemarthrosis
- Regain normal knee range of motion
- Regain a normal gait pattern and neuromuscular stability for ambulation
- Regain normal lower extremity strength
- Regain normal proprioception, balance, and coordination for daily activities
- Achieve the level of function based on the orthopedic and patient goals

The physical therapy should be initiated within 3 to 5 days post-op. It is extremely important for the supervised rehabilitation to be supplemented by a home fitness program where the patient performs the given exercises at home or at a gym facility.

Important post-op signs to monitor:

- Swelling of the knee or surrounding soft tissue
- Abnormal pain response, hypersensitive
- Abnormal gait pattern, with or without assistive device
- Limited range of motion
- Weakness in the lower extremity musculature (quadriceps, hamstring)
- Insufficient lower extremity flexibility

Return to activity requires both time and clinical evaluation. To safely and most efficiently return to normal or high level functional activity, the patient
requires adequate strength, flexibility, and endurance. Isokinetic testing and functional evaluation are both methods of evaluating a patient’s readiness to return to activity. Return to intense activities following a knee scope may increase the risk of an overuse injury or the possibility of compounding prior articular cartilage damages and symptoms such as pain, swelling, or instability should be closely monitored by the patient.

Phase 1: Week 1-2
Knee Scope

<table>
<thead>
<tr>
<th>WEEK</th>
<th>EXERCISE GOAL</th>
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<tbody>
<tr>
<td>1-2</td>
<td>ROM 0-90°</td>
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<td>Passive, 0-90°</td>
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<tr>
<td></td>
<td>Patellar mobs</td>
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<td>Ankle pumps</td>
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<td>Gastroc/soleus stretch</td>
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<td>Prone hang if needed to reach goal</td>
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<td>Heel/Wall slides if needed to reach goal</td>
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**STRENGTH**
- Quad sets with E-stim/biofeedback
- Isometric hip adduction
- SLR in 4 planes
- Hip flexion
- Total gym (0-45°)
- Heel raises/Toe raises

**WEIGHT BEARING PWB-WBAT**
- PWB to WBAT according to Dr. Stein
- Crutches post-op if needed

**BALANCE TRAINING**
- Weight shift (side/side, fwd/bkwd)
- Single leg balance

**MODALITIES**
- E-stim/biofeedback as needed
- Ice 15-20 minutes

**GOALS OF PHASE:**
- ROM 0-90°
- Adequate quad/VMO contraction
- Independent in HEP
- Control pain, inflammation, and effusion
- PWB to WBAT as noted by Dr. Stein
Phase 2: Week 2-6
Knee Scope

**WEEK 2-6 EXERCISE GOAL**

- **ROM 0-120°**
  - Passive, 0-120°
  - Patellar mobs
  - Ankle pumps
  - Gastroc/soleus/hamstring stretch
  - Prone hang if needed to reach goal
  - Heel/Wall slides if needed to reach goal

**STRENGTH**
- Multi-angle isometrics (0-60°)
- Quad sets with biofeedback
- SLR in a 4 planes
- Knee extension (90-10°)
- Heel raises/Toe raises
- Mini-squats (0-30°)
- Leg Press-single leg eccentric
- Multi-hip machine in 4 planes
- Reverse lunges-knee not to migrate over toe
- Lateral/Forward step-up/down

**BICYCLE**
- May initiate bike when 110° flexion is reached
- DO NOT use bike to increase flexion

**WEIGHT BEARING FWB**
- FWB with quad control

**BALANCE TRAINING**
- Single leg balance with plyotoss
- Sports cord balance/agility work
- Wobble board work
- ½ Foam roller work

**MODALITIES**
- Ice 15-20 minutes

**GOALS OF PHASE:**
- ROM 0-120°
- Adequate quad/VMO control
- Control pain, inflammation, and effusion
- Full weight bearing
- Increase lower extremity strength and endurance
- Enhance proprioception, balance, and coordination
- Complete readiness for sport specific activity
Phase 3: Week 6-12
Knee Scope

WEEK 6-12  EXERCISE GOAL
ROM 0-135°
Passive, 0-135°
HS/Gastroc/Soleus stretch
ITB/Quad stretch
Patella mobs

STRENGTH
SLR in 4 planes with ankle wt/tubing
Heel raise/Toe raise
Leg Press-single leg eccentric
Knee extension (90-10°) with resistance
Lateral/Forward step-up/downs
Reverse lunges-knee not to migrate over toe
Hamstring curls with resistance (0-90°)
Multi-hip machine in 4 planes
Mini-squats with resistance (0-45°)
Stool crawl
Straight leg deadlift

BALANCE TRAINING
Two-legged balance board with plyotoss
Initiate single leg steamboats with band
½ Foam roller work
Wobble board work
Sports cord single-leg agility/balance

AEROBIC CONDITIONING
Bicycle with resistance
EFX/StairMaster
Walking program
Swimming (kicking)

RUNNING PROGRAM
Initiate running on minitramp, progress to treadmill when tolerable
Increase walking program
Backward running

MODALITIES
Ice 15-20 minutes as needed

GOALS OF PHASE:
• ROM 0-135°
• Full weight bearing with quad control
• Increase strength and endurance
• Control pain and swelling
**Phase 4: Week 12-24**

**Knee Scope**

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<thead>
<tr>
<th>WEEK</th>
<th>EXERCISE</th>
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<tbody>
<tr>
<td>12-24</td>
<td>ROM</td>
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<tr>
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<td>Continue all stretching from previous phases</td>
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**STRENGTH**
Continue all strengthening activities from previous phases increasing weight and repetitions

**BALANCE TRAINING**
Continue all single-leg activities increasing difficulty

**RUNNING/CONDITIONING PROGRAM**
- Bicycle with resistance for endurance
- EFX/StairMaster for endurance
- Increase running program
- Increase walking program
- Swimming for endurance
- Backward running

**CUTTING/AGILITY PROGRAM**
- Lateral shuffle
- Carioca
- Figure 8's

**FUNCTIONAL TRAINING**
- Initiate plyometric training
- Sport specific drills

**MODALITIES**
- Ice 15-20 minutes as needed

**GOALS OF PHASE:**
- Increase and maximize function
- Maximize strength and endurance
- Return to previous activity level
- Return to sport specific functional level