# **Knee Ligament Rehabilitation Plans**

## **1. Medial Collateral Ligament (MCL) Injury Rehabilitation Plan**

### **Phase 1: Pain and Swelling Control**

**Clinical Goal:** Reduce pain, control swelling, and maintain gentle knee mobility while avoiding stress on the MCL.

**• Heel Slide**

* Start with the knee as straight as possible.
* Use both arms as support.
* Slowly slide the heel towards the buttock until a gentle stretch is felt.
* Stop before pain, then return to start.
* **Frequency:** 4–5 times daily × 10–15 repetitions.
* **Goal:** Regain knee flexion up to 135–145° pain-free.

**• Wall Heel Slide**

* Lie on the floor with hips close to a wall, both feet resting on it.
* Allow the injured foot to slide slowly down the wall until a stretch is felt.
* Hold for 15–30 seconds, then return.
* **Frequency:** 2–4 sets daily per side.
* Keep hips relaxed and flat on the floor.

### **Phase 2: Quadriceps Activation and Strength Restoration**

**Clinical Goal:** Regain quadriceps control, improve knee stability, and maintain full range of motion.

**• Quad Set**

* Place a **foam roller** under the injured knee.
* If unavailable, use a **rolled-up towel or blanket (10–15 cm high)**.
* Push the back of the knee down into the roller and hold for 6 seconds.
* **Frequency:** 3–5 sessions per day × 8–12 repetitions.

**• Short Arc Quad Activation**

* Lie on your back with the roller (or rolled towel) under the knee.
* Straighten the lower leg by lifting the heel while keeping the knee in contact with the roller.
* Hold for 6 seconds, then lower slowly.
* **Frequency:** 3–5 times daily × 8–12 repetitions.
* Continue for 1–2 weeks as tolerated.

### **Phase 3: Hip Strength and Functional Stability**

**Clinical Goal:** Improve hip stability, enhance knee joint control, and prepare for functional recovery.

**• Banded Hip Abduction**

* Use a **loop band** placed just above the knees.
* Stand on the injured leg with hands on hips.
* Move the uninjured leg outward (abduction) and return.
* Perform on both sides.
* **Frequency:** 3 sets × 10–15 repetitions daily.

**• Hip Flexion with Straight Leg Raise**

* Lie on your back with the injured leg straight.
* Press the back of the knee gently into the floor.
* Lift the leg about 30 cm off the floor, hold for 6 seconds, then lower slowly.
* **Frequency:** 3 sets × 8–12 repetitions daily.

**• Hip Adduction (Seated Pillow/Towel Squeeze)**

* Sit with knees bent and a **pillow or folded towel** between them.
* Squeeze gently, hold for 6 seconds, then relax.
* **Frequency:** 8–12 repetitions daily.

**• Lateral Step-Up**

* Stand sideways on a low step with the injured leg on the step.
* Lean slightly forward and step up, then slowly lower back down.
* **Frequency:** 8–12 repetitions daily.
* Progress by increasing step height as tolerated.

## **2. Anterior Cruciate Ligament (ACL) Injury Rehabilitation Plan**

### **Phase 1: Reduce Pain and Swelling**

**Clinical Goal:** Minimize swelling, maintain mobility, and promote quadriceps activation.

**• Quad Set**

* Lie or sit with the injured leg straight (other leg bent or straight).
* Tighten the quadriceps by pressing the back of the knee toward the floor.
* Hold for 5–10 seconds.
* **Frequency:** 3–5 sets × 10 repetitions daily.

**• Heel Slide**

* Lie down or sit with both legs straight.
* Slide the heel of the injured leg toward the buttocks, stopping before pain.
* **Frequency:** 3 sets × 10 repetitions daily.

**• Ankle Pumps**

* Place a **rolled towel** under the ankle.
* Flex and extend the ankle (pull toes toward you, then point away).
* **Frequency:** 3 sets × 20–30 repetitions daily or for 2–3 minutes continuously.

### **Phase 2: Quadriceps Activation and Strength Recovery**

**Clinical Goal:** Restore knee extension, activate quadriceps, and begin gentle strength work.

**• Short Arc Quad**

* Place a **foam roller or rolled towel (10–15 cm high)** under the knee.
* Lift the lower leg by contracting the quadriceps, keeping the knee in contact with the support.
* Hold for 3 seconds, then lower slowly.
* **Frequency:** 3 sets × 15–20 repetitions daily.
* Discontinue if pain occurs.

**• Straight Leg Raise**

* Keep injured leg straight and the other leg bent.
* Pull your ankle up for a bit, then lift the straight leg until it’s parallel with the bent leg, hold briefly, then lower slowly.
* **Frequency:** 3 sets × 10–20 repetitions daily.

### **Phase 3: Functional Strength and Hip Activation**

**Clinical Goal:** Improve hip and core strength, enhance joint stability, and prepare for functional movement.

**• Bridges**

* Lie on your back with both knees bent and arms by your sides.
* Push through your heels to lift your hips, forming a straight line from shoulders to knees.
* Hold briefly, then lower slowly.
* **Frequency:** 3 sets × 10–20 repetitions daily.

## **Meniscus Tear Rehabilitation Plan**

### **🔹 Phase 1: Acute Phase (Weeks 0–2)**

**Goal:** Reduce pain and swelling, begin gentle motion, and re-activate quadriceps.

#### **1. Heel Slide**

* **Starting Position:** Start with the knee as straight as possible.
* **Movement:** Slowly slide the heel towards the buttock until a gentle stretch is felt.
* **Tip:** Use both arms as support. Stop before pain, then return to the starting position.
* **Frequency:** 4–5 times daily × 10–15 repetitions.
* **Goal:** Regain knee flexion up to **135–145° pain-free**.

#### **2. Quadriceps Set**

* **Starting Position:** Sit or lie down with the injured leg straight (the other leg can be bent or straight).
* **Movement:** Tighten the quadriceps by pressing the back of the knee toward the floor.
* **Tip:** Place a towel under your knee if it’s difficult to press down.
* **Hold:** 10 seconds, then rest for 10 seconds before continuing.
* **Frequency:** 2–3 sets × 10 repetitions daily.
* **Goal:** Strengthen quadriceps and improve knee stability.

(Optional but recommended for swelling control)

#### **3. Ankle Pumps**

* **Starting Position:** Sit or lie down with the injured leg straight.
* **Movement:** Move your foot up and down by flexing and extending the ankle.
* **Frequency:** 3–5 minutes, several times daily.
* **Goal:** Improve circulation and reduce knee swelling.

### **🔹 Phase 2: Early Strengthening Phase (Weeks 2–4)**

**Goal:** Develop strength in the quadriceps, hamstrings, and hips to stabilize the knee while maintaining pain-free range of motion.

#### **4. Straight Leg Raise**

* **Starting Position:** Lie flat with the injured leg straight and the other leg bent.
* **Movement:** Pull your ankle up slightly, lift the straight leg until it’s parallel with the bent leg, hold briefly, then lower slowly.
* **Frequency:** 2–3 sets × 10–15 repetitions daily.
* **Goal:** Strengthen quadriceps and improve knee control without strain.

#### **5. Hip Abduction**

* **Starting Position:** Lie on your side with the uninjured leg bent and the injured leg straight.
* **Movement:** Fire up the muscles on the side of your hip to raise your heel toward the ceiling (2 seconds up, 2 seconds down).
* **Common Mistake:** Rolling your hip backward and letting your toes face upward.
* **Tip:** Keep your hip pushed forward; doing this against a wall can help.
* **Frequency:** 3 sets × 10–15 repetitions daily.
* **Goal:** Strengthen hip stabilizers for better knee alignment.

#### **6. Hip Adduction**

* **Starting Position:** Lie on your side with the injured leg on the bottom and straight, the other leg crossed in front.
* **Movement:** Raise the injured leg up toward the ceiling (2 seconds up, 2 seconds down).
* **Frequency:** 3 sets × 10–15 repetitions daily.
* **Goal:** Strengthen inner thigh muscles to support the knee.

#### **7. Isometric Hamstring Curl (Glute Bridge)**

* **Starting Position:** Lie on your back with knees bent, toes facing upward.
* **Movement:** Push your heels down into the floor, then lift your hips toward the ceiling (2 seconds up, 2 seconds down).
* **Frequency:** 3 sets × 10–15 repetitions daily.
* **Goal:** Strengthen hamstrings and glutes to support the knee joint.

### **🔹 Phase 3: Functional Strengthening & Control (Weeks 4–6+)**

**Goal:** Restore full strength, balance, and movement control to prepare for return to daily and sports activities.

#### **8. Mini Squats (~60° Knee Bend)**

* **Starting Position:** Stand with feet shoulder-width apart.
* **Movement:** Drop down into a squat with about a 60° bend (around a quarter squat).
* **Tips:**
  + Don’t let knees move too far over the toes.
  + Keep knees in line with the toes—avoid collapsing inward or outward.
* **Frequency:** 3 sets × 10–15 repetitions daily.
* **Goal:** Rebuild quadriceps and functional control for daily activity.

#### **9. Lateral Step-Up**

* **Starting Position:** Stand sideways on a low step with the injured leg on the step.
* **Movement:** Lean slightly forward and use the top leg to step up, bringing the other foot to meet it. Slowly lower yourself back down.
* **Progression:** Gradually increase step height as tolerated.
* **Frequency:** 8–12 repetitions daily.
* **Goal:** Improve balance, leg control, and functional strength.

# **Ankle Ligament Rehabilitation Plans**

## 🦶 **Lateral Ankle Sprain (Inversion Sprain) Rehabilitation Plan**

**Injury Summary:**  
Most common ankle sprain involving the lateral ligaments — mainly the anterior talofibular ligament (ATFL) and calcaneofibular ligament (CFL). The rehab aims to restore joint mobility, strength, proprioception, and full dynamic stability.

### **Phase 1: Acute / Mobility Phase (Week 1–2)**

#### **Goals**

* Reduce pain and swelling
* Restore gentle ankle mobility
* Begin early muscle activation

#### **Exercises**

**1. Ankle Dorsiflexion Mobility**

* Find a wall and measure how far your toes can go from the wall while keeping your knee touching the wall **without lifting your heel**.
* Compare both legs and hold or oscillate near the limit (pain-free).
* Helps **mobilize the joint** and **restore dorsiflexion**.
* **Frequency:** 2–3 sessions daily × 10–15 reps each.

**2. Ankle Strengthening (Isometric/Eversion Band Work)**

* Use an **elastic band** looped around your foot.
* Slowly pull ankle **outward (eversion)** against the band and return slowly.
* Keep motion pain-free.
* **Frequency:** 3 sets × 10–15 reps daily.
* Gradually increase to 20–25 reps as tolerated.

### **Phase 2: Strengthening & Balance Phase (Week 3–4)**

#### **Goals**

* Improve calf and ankle strength
* Reintroduce balance and proprioception
* Maintain mobility without swelling return

#### **Exercises**

**3. Calf Raise Exercise**

* Hold onto a stable object for balance.
* Stand on the **injured leg**; other leg lifted.
* Rise slowly onto the ball of the big toe, then lower down.
* **Frequency:** 3 sets × 20–25 reps daily.

**4. Proprioceptive Control (Clock Reaches)**

* Stand on the injured leg and reach your free leg toward **12, 9, and 6 o’clock** directions.
* Keep balance without wobbling.
* Builds **ankle stability and control**.
* **Frequency:** 3 sets × 10 reps (each direction) daily.

### **Phase 3: Functional Strength Phase (Week 5–6)**

#### **Goals**

* Strengthen functional movement patterns
* Improve single-leg control
* Increase lower limb endurance

#### **Exercises**

**5. Single-Leg Squat**

* Stand on injured leg.
* Sit back as if on a chair and perform a squat as deep as comfortable, avoiding knee collapse.
* **Frequency:** 3 sets × 10–15 reps daily.

**6. Forward Lunge**

* Step forward with injured leg, land softly, and push back up.
* Keep ankle stable (avoid rolling).
* **Frequency:** 3 sets × 10–15 reps daily.

### **Phase 4: Advanced / Return-to-Activity Phase (Week 7–8)**

#### **Goals**

* Restore dynamic stability
* Prepare for sports or full daily activity
* Prevent re-injury through control and coordination

#### **Exercises**

**7. Hop to Landing**

* Two-legged hop → land on injured leg.
* Maintain balance and control on landing.
* **Frequency:** 2–3 sets × 5–10 reps daily.
* Progressively increase jump height as tolerated.

## 🦶 **Medial Ankle Sprain (Eversion Sprain) Rehabilitation Plan**

**Injury Summary:**  
A medial ankle sprain involves overstretching or tearing of the **deltoid ligament** on the inner side of the ankle. It is less common than lateral sprains but often takes longer to heal due to the ligament’s deep structure and involvement with the joint capsule.

### **Phase 1: Acute / Mobility Phase (Week 1–2)**

#### **Goals**

* Reduce pain and swelling
* Maintain gentle mobility in the ankle joint
* Prevent stiffness and muscle atrophy

#### **Exercises**

**1. Ankle Pumps**

* **Starting Position:** Sit or lie down with the injured leg straight.
* **Movement:** Move your ankle up and down by flexing and extending it.
* **Frequency:** Several times daily.
* Purpose: Promotes blood circulation and reduces swelling.

**2. Ankle Circles** (only if ankle pumps are pain-free)

* **Starting Position:** Sit or lie down with the injured leg straight.
* **Movement:** Move your ankle in circular motions to go through a larger range of movement.
* **Frequency:** Several times daily.
* Purpose: Helps maintain joint mobility and proprioception.

### **Phase 2: Strengthening & Balance Phase (Week 3–5)**

#### **Goals**

* Restore inner ankle strength
* Improve proprioception and dynamic control
* Regain normal walking and balance

#### **Exercises**

**3. Single-Leg Balance**

* Stand on your injured leg and lift the other leg off the floor.
* Maintain a **tripod foot** (base of big toe, base of little toe, heel).
* Hold position for **1 minute**; use your back leg for light support if needed.
* Purpose: Enhances ankle and core stability.

**4. Ankle Inversion – Band**

* Loop a resistance band around your injured foot and anchor it with the opposite leg.
* Pull your foot **inward (towards midline)** slowly through full range.
* Avoid pain or excessive motion.
* **Reps:** 15 reps daily.
* Purpose: Strengthens the deltoid and tibialis posterior muscles.

**5. Ankle Eversion – Band**

* Loop a resistance band around the injured foot and step on the band with the opposite leg.
* Move the foot **outward** slowly without moving the entire leg.
* Avoid inner ankle discomfort.
* **Reps:** 15 reps daily.
* Purpose: Balances medial and lateral ankle strength.

**6. Heel Raise – Off Step**

* Stand on a step edge with the injured leg straight, other leg bent.
* Lift your heel up as high as possible, then lower slowly through full range.
* Use a wall or rail for support.
* **Reps:** 15 reps daily.
* Purpose: Builds calf strength and ankle control.

**7. Ankle Dorsiflexion – Wall Support**

* Stand with your back against the wall.
* Step feet slightly forward and lift both toes up toward you, keeping knees straight.
* The further your feet are, the harder it becomes.
* **Reps:** 15 reps daily.
* Purpose: Improves ankle flexion and anterior tibial strength.

### **Phase 3: Functional / Return-to-Sport Phase (Week 6–8)**

#### **Goals**

* Build power and landing control
* Restore confidence in single-leg dynamic tasks
* Prepare for sports or daily activity

#### **Exercises**

**8. Double-Leg Jump**

* Perform a small squat, then jump slightly upward and land softly on both legs.
* Focus on **controlled landing**, distributing weight evenly.
* Use a mirror to check for any bias toward the non-injured side.
* **Reps:** 3 sets × 10 reps daily.
* Purpose: Re-trains shock absorption and symmetrical loading.

**9. Lateral Bound**

* Jump laterally from one leg to the other and back.
* Push off, land softly, and maintain balance before returning.
* Gradually increase distance and height.
* **Reps:** 2–3 sets × 10 reps.
* Purpose: Develops side-to-side ankle strength and coordination.

**10. Single-Leg Hops**

* Stand on the injured leg, bend slightly, then hop upward.
* Land gently and **control the motion** each time.
* **Reps:** As tolerated, up to 2–3 sets × 10 reps daily.
* Purpose: Builds plyometric control and ankle reactivity.

Perfect 👍 here’s your **High Ankle Sprain (Syndesmotic Sprain) Rehabilitation Plan**, neatly arranged in your usual **Phase 1–3 clinical layout**, using only the six exercises you provided:

## **High Ankle Sprain (Syndesmotic Sprain) Rehabilitation Plan**

### **Phase 1 – Acute Phase (Week 1–2)**

**1. Elevated Ankle Pumps**

* **Starting Position:** Lie on your back or bed with your injured foot elevated (e.g., resting on a couch or pillows).
* **Movement:** Move your ankle up and down by flexing and extending it.
* **Duration:** 1–2 minutes per set (can extend if comfortable).
* **Frequency:** Several times daily.
* **Example:** Keep your foot elevated for 10–15 minutes and perform ankle pumps for 1–2 minutes within that time.
* **Purpose:** Reduce swelling and maintain blood circulation.

**2. Ankle Circles (only if ankle pumps are pain-free)**

* **Starting Position:** Sit or lie down with the injured leg straight.
* **Movement:** Move your ankle in circular motions to go through a full pain-free range.
* **Frequency:** Several times daily.
* **Purpose:** Maintain joint mobility and improve proprioception.

### **Phase 2 – Subacute / Strengthening Phase (Week 2–4)**

**3. Progressive Weight Bearing**

* **Starting Position:** Stand near a wall or counter for support.
* **Movement:** Slowly shift your weight from the uninjured to the injured leg, back and forth.
* **Progression:** Start with 5–10% body weight and increase up to full weight as tolerated.
* **Tip:** Once comfortable, try standing fully on the injured leg for a few seconds.
* **Duration:** Practice for several minutes, 2–3 times daily.
* **Purpose:** Gradually restore weight-bearing tolerance and ankle stability.

**4. Double-Leg Calf Raises**

* **Starting Position:** Stand on both legs with hands supported on a wall or chair.
* **Movement:** Raise your heels off the ground, putting equal weight (50–50) on both legs.
* **Range:** Stop before pain; work through a comfortable range.
* **Reps:** 15–20 reps × 2–3 sets daily.
* **Purpose:** Strengthen calf muscles and improve ankle control.

### **Phase 3 – Functional / Return to Activity Phase (Week 4–6)**

**5. Proprioceptive Control (Clock Reaches)**

* **Starting Position:** Stand on your injured leg.
* **Movement:** With the other leg, reach toward imaginary clock positions — 12, 9, and 6 o’clock — while maintaining balance.
* **Reps:** 10 reps (each direction) × 3 sets daily.
* **Purpose:** Build ankle stability, proprioception, and neuromuscular coordination.

**6. Glute Bridge**

* **Starting Position:** Lie on your back with knees bent and feet flat on the floor.
* **Movement:** Press your feet into the floor, lift your hips toward the ceiling, hold briefly, then lower slowly.
* **Progression:** Once comfortable, slightly lift heels off after raising hips.
* **Reps:** 10–15 reps × 3 sets daily.
* **Purpose:** Strengthen glutes and core, enhancing overall lower limb stability.

Resources Collected From:

5 Exercises to Rehab a Sprained Ankle  
  
<https://youtu.be/W9lT3gfehC0?si=Qgq0OqXrCPkk83rf>

Medial Collateral Ligament (MCL) Injury Rehab Exercises  
  
<https://youtu.be/1mZCOQbeoNM?si=-ntokqZdkgY-E5gb>

Medial Collateral Ligament (MCL) Knee Exercises and Rehab | Doctor and Physio Led

<https://youtu.be/q7_F6w6reOc?si=UDr8YGHXH5qePabo>

[ACL Injury Rehab (Phase I)](https://www.youtube.com/watch?v=ZeCZkA7Xeu4&t=4s)

<https://youtu.be/ZeCZkA7Xeu4?si=OvUw38qeWoPMxMOR>

[ACL Injury Rehab (Phase II)](https://www.youtube.com/watch?v=ZeCZkA7Xeu4&t=4s)

<https://youtu.be/ZcyzZpWLHAg?si=IAgiAjFC9jSfR-9t>

Home Exercises to Rehab an ACL Injury (NON Surgical!)

<https://youtu.be/hdNgTjiJcfE?si=CfWO6-X1LMjnOhUQ>

Stretches and Exercises for Meniscus Tear Knee Pain

<https://youtu.be/yLB4ktZFMJE?si=3nAPbUN9VQ5Axo5X>

[RECOVER FASTER!] How to treat your ankle pain at home!

<https://youtu.be/_6hjIWhB8Yc?si=tS5Q054wumt_3o85>

How to rehab a lateral ankle sprain

<https://youtu.be/8sEYFsPUO9Q?si=_AC-fc8jBtmVVfNF>

Sprained Ankle Rehab (Part I)

<https://youtu.be/TQbB6lFva_s?si=dKpmGNpMuK7wPBFE>

Sprained Ankle Rehab (Part II)

<https://youtu.be/X_AirS8TIfQ?si=HnS5oBlZYbH0sfCT>

How to rehab a medial ankle sprain & prevent reinjury

<https://youtu.be/NhwOkBP7oqU?si=_PGwB3aFEm7JvanY>

High Ankle Sprain exercises (Syndesmosis Injury)

<https://youtu.be/9CIA1lAHzd0?si=NxVxHukBnkt6_KDU>