

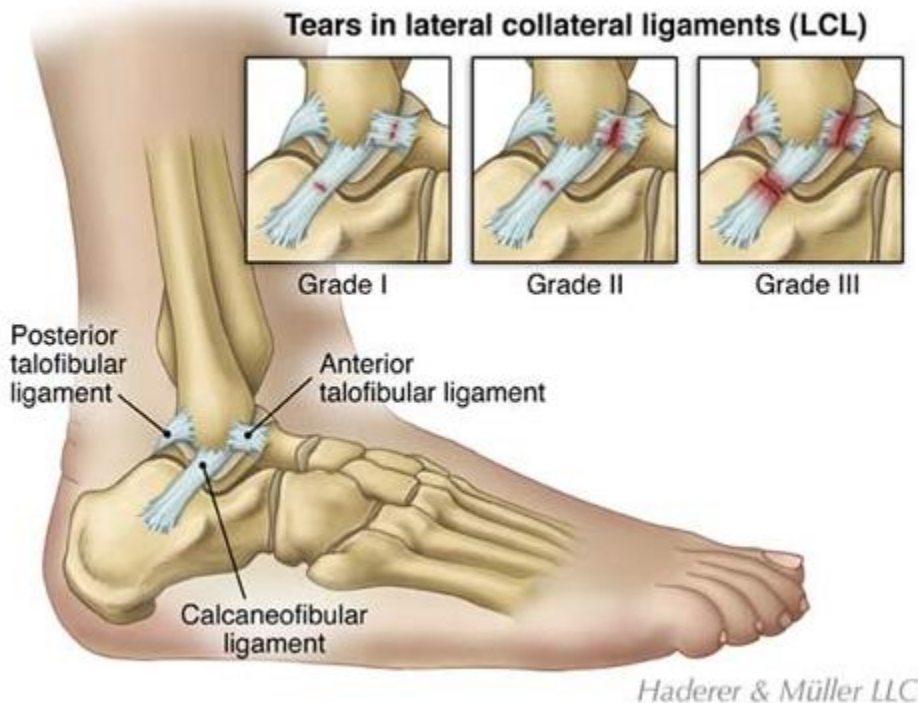
Physical Therapy Guidelines for Lateral Ankle Sprain

For the Clinician: The intent of this protocol is to provide the clinician with a guideline of rehabilitation for the patients who sustained Lateral Ankle Sprain. It is not intended to be a substitute for clinical decision making regarding the progression of a patient's course based on their examination/findings, individual progress or the presence of other complications. If a clinician requires assistance in the progression or in case when the patient is not progressing as anticipated, they should consult with the referring provider.

For the Patient: The timeframes for expected outcomes contained within this guideline may vary from patient to patient based on individual differences, injury, pain and swelling. Compliance with all the recommendations provided by your physician and physical therapist as well as your active participation in all parts of the rehabilitation process, are essential to optimizing the success of your recovery.

Introduction: Ankle sprains are one of the most common orthopedic injuries. Lateral ankle sprain refers to partial or complete tearing/disruption of the ankle ligaments on the outside of the ankle. Ligaments, in general, are the structures that connect bone-to-bone. The ankle ligaments consist of:

- 1) The anterior talofibular ligament (ATFL), which connects the talus (ankle bone) to the fibula (outer leg bone) on the outside of the ankle.
- 2) The calcaneal fibular ligament (CFL), which connects the fibula (outer leg bone) to the calcaneus (heel bone) below.
- 3) The posterior talofibular ligament (PTFL), which stabilizes the back of the ankle.



Physical Therapy Guidelines for Lateral Ankle Sprain

Mechanism of injury: Lateral ankle sprains usually occur when the foot rolls underneath the ankle or leg, also known as an inversion injury.



Symptoms: Patients will complain of pain on the outside of their ankle, swelling, bruising and difficulty bearing weight on the foot. Usually, those who have sprained their ankle are still able to bear some weight compared to patients who have suffered an ankle fracture which makes weight-bearing extremely difficult or impossible.

Ankle sprains are typically classified as mild, moderate or severe.

Grade 1 Sprain (Mild)

- Slight stretching and microscopic tearing of the ligament fibers, commonly the anterior talofibular ligament.
- Mild tenderness and swelling around the ankle, typically recovers in 5-14 days.

Grade 2 Sprain (Moderate)

- Partial tearing of anterior talofibular ligament and some tearing of the calcaneofibular ligament.
- Moderate tenderness and swelling around the ankle, typically will take 2-3 weeks to recover.

Grade 3 Sprain (Severe)

- Complete tear of the anterior talofibular ligament, the calcaneofibular, and the posterior talofibular ligament.
- Significant tenderness and swelling around the ankle.
- May take 3-12 weeks or longer to recover.

While some ankle sprains recover on their own, research has shown that patients may be less likely to have problems with long term ankle instability and re-injury if treated with physical therapy.

Physical Therapy Guidelines for Lateral Ankle Sprain

Phase	Goals	Physical Therapy Treatment
Phase I Acute Phase/ Inflammatory Phase Days 1-3	-Decrease swelling -Decrease pain -Improve circulation	PRICE (Protection, rest, ice, compression, elevation) • Protection: of injured ligaments from further injury by resting and avoiding activities that may cause further injury or pain. For severe injuries, taping, splints, pneumatic walking boot, semi-rigid ankle stirrup orthotic, or lace up brace may be recommended. • Rest: Rest for first 24 hours after injury. Weight bearing as tolerated (WBAT) with assistive device, such as crutches, may help with pain management. • Ice/ Cold packs: 10-15 minutes- 3 times per day, or more frequently for pain and swelling management. • Compression: Use an elastic bandage to limit swelling. Make sure to wrap bandage snug (not too tight but comfortable) around the toes and foot, and slightly looser as you wrap around the ankle and lower leg. This will help to push the swelling out of the foot. • Elevation: Elevating the leg 10-18 inches above the heart will help minimize swelling to the area. • Manual Therapy: Talocrural joint anteroposterior mobilization grade I- grade II can help to effectively reduce pain
Phase II Progressive ROM 2-4 days to 2 weeks	-Decrease and eliminate pain and swelling -Improve flexibility and range of motion (ROM) - Improved load bearing capacity by progressing ambulation (regain normal walking pattern)	• Continue use of ice to decrease pain and swelling as needed. • Joint mobilization: Distal tibiofibular, talocrural, subtalar joint, as needed. • ROM: within pain-free range, start with dorsiflexion and plantarflexion, add inversion and eversion as pain and tenderness over ligaments decreases. • Flexibility: Stretch gastro/soleus complex – start with non-weight bearing and then progress to weight bearing positions as tolerated. Check for hip flexor, quad and hamstring tightness. • Progress gait training: increase weight bearing and decrease need for assistive device as tolerated.
Phase III Progressives strengthening and neuromuscular control 2-6 weeks post- injury	-Regain ROM - Improve muscular strength and endurance -Improve joint proprioception and motor control -Normalize gait pattern without the use of assistive device	• Joint Mobilization: Continue as needed. • Flexibility: continue to stretch as needed. • Strengthening Exercises: Progression of dorsiflexion, plantarflexion, eversion and inversion from active range of motion exercises to resistive exercises (concentric and eccentric) using weights and resistance bands. • Proprioception Training: Progress from sitting to standing on both legs and then single leg. Progress eyes open to eyes closed. Add reaching with dynamic challenges on level surfaces then progressing to uneven surfaces using wobble board/ rocker

Physical Therapy Guidelines for Lateral Ankle Sprain

Phase	Goals	Physical Therapy Treatment
		board, BAPS board, foam pad, BOSU, star excursion balance activities. - Gait Training: Wean from assistive devices and normalize the gait. - Endurance Activities: Swimming, biking, walking, etc.
Phase IV Functional Phase: Return to sports 6+ weeks post-injury	- Return to strength training with appropriate modifications - Improve muscular power, speed, agility, and neuromuscular control - Improve proper body mechanics and movement patterns - Increase overall proximal stability	- Progressive strengthening and endurance exercise – may return to Stairmaster and treadmill. - Coordination and Agility Training - Activities to consider depending on patient's ability, recovery, lower extremity mechanics and type of vocational/and/or recreational activity the patient will return to. Exercise examples: - Hopping (progress bilateral, to injured leg only, whole foot to toes only) - Agility ladder exercises - Jumps- box jumps. depth jumps over obstacle/hurdle - Single leg bounding - Sprinting, shuffling, backwards running, figure 8, zig-zags, cutting - Sport specific agility/plyometric training Consider using functional tests for return to sports: Functional Screening Tests: -Side-hop -6-meter Crossover Hop -Square Hop - Figure-of-8 hop Functional Tests for Return to Sport: 1. Timed lateral step-down 2. Timed leap and catch hop sequence 3. Single leg hop for distance 4. Single-leg timed hop 5. Single-leg triple hop for distance 6. Crossover hop for distance endurance sequence 7. Square hop test
Prophylactic Phase	Prevention of Re-Injury	- Continue strengthening dorsiflexors and evertors. - Functional proprioceptive drills to work on speed, balance, coordination and agility. - Cardiovascular endurance training - Proper footwear - Prophylactic external support, especially for chronic instability.

Physical Therapy Guidelines for Lateral Ankle Sprain

If you have any questions or concerns related to the content of these rehabilitation guidelines, please contact:

MGH Physical and Occupational Therapy Services (Mass General Waltham)

781-487-3800

Website: <https://www.massgeneral.org/locations/waltham/physical-and-occupational-therapy>

MGH Orthopedics Foot and Ankle

617-724-9338

Website: <https://www.massgeneral.org/orthopaedics/foot-ankle>

References:

1. Martin RL, Davenport TE, Paulseth S, Wukich DK, Godges JJ; Orthopaedic Section American Physical Therapy Association. Ankle stability and movement coordination impairments: ankle ligament sprains. J Orthop Sports Phys Ther. 2013 Sep;43(9):A1-40. doi: 10.2519/jospt.2013.0305. PMID: 24313720.
2. Green T, Refshauge K, Crosbie J, Adams R. A randomized controlled trial of a passive accessory joint mobilization on acute ankle inversion sprains. Phys Ther. 2001 Apr;81(4):984-94. PMID: 11276181.
3. Whitman JM, Cleland JA, Mintken PE, Keirns M, Bieniek ML, Albin SR, Magel J, McPoil TG. Predicting short-term response to thrust and nonthrust manipulation and exercise in patients post inversion ankle sprain. J Orthop Sports Phys Ther. 2009 Mar;39(3):188-200. doi: 10.2519/jospt.2009.2940. PMID: 19252260.
4. Cleland JA, Mintken PE, McDevitt A, Bieniek ML, Carpenter KJ, Kulp K, Whitman JM. Manual physical therapy and exercise versus supervised home exercise in the management of patients with inversion ankle sprain: a multicenter randomized clinical trial. J Orthop Sports Phys Ther. 2013;43(7):443-55. doi: 10.2519/jospt.2013.4792. Epub 2013 Apr 29. PMID: 23628755.
5. <https://footeducation.com/sprained-ankle/>