Rehabilitation Protocol for Lateral Ankle Sprain: non-operative management

This protocol is intended to guide clinicians through non-operative management of lateral ankle sprain. This protocol is time based (dependent on tissue healing) as well as criterion based. Specific intervention should be based on the needs of the individual and should consider exam findings and clinical decision making. The timeframes for expected outcomes contained within this guideline may vary based on referring physician preference, severity of ankle instability, number of involved ligaments, additional impairments, and/or complications.

The interventions included within this protocol are not intended to be an all-inclusive list of exercises. Therapeutic interventions should be included and modified based on the progress of the patient, and under the discretion of the clinician.

Diagnosis Considerations	*Lateral Ankle Sprain* • Mechanism of Injury • Degree of ecchymosis and edema • Tenderness to palpation over lateral ankle ligaments • Anterior drawer and reverse anterior drawer test • Ottawa ankle rule to rule out fracture
Differential Diagnosis	• Foot and ankle fracture • Syndesmotic injury • Osteochondral lesion • Talar bone contusion • Deltoid ligament sprain • Peroneal tendon strain • Achilles tendon strain • Midfoot sprain • Epiphyseal plate injuries

PHASE I: PROTECTION AND OPTIMAL LOADING (1-2 WEEKS AFTER INJURY)

Rehabilitation Goals	• Decrease pain • Decrease edema • Improve weight bearing • Protect healing structures
Brace	• Brace or protective tape should be worn during weight bearing activities. • Immobilization is recommended for 10 days for severe ankle sprain.
Intervention	*Range of motion/Mobility* • Foot and ankle PROM • Ankle pumps • Ankle circles • Ankle alphabet • Seated heel raises • Seated toe raises • Towel crunches/toe curls • BAPS board

	Manual therapy • Grades I-II to talocrural, subtalar, and mid foot for pain control *Gait training* • Normalize stance time, weight bearing, and promote heel to toe gait pattern *Motor control/Balance* • Initiate Tandem or single leg balance on firm surface if non-painful • Ice, compression, elevation, NSAIDS (if appropriate)
Criteria to Progress	• Ability to fully weight bear on involved lower extremity • Decreased pain • Minimal swelling

PHASE II: INTERMEDIATE/SUB-ACUTE (3-6 WEEKS AFTER INJURY)

Rehabilitation Goals	• Decrease pain • Normalize gait pattern • Improve ankle ROM • Improve single leg stance stability • Maintain or improve proximal muscle strength
Brace	• Continue to wear brace for weight bearing activities.
Additional Intervention **Continue with Phase I interventions*	*Range of motion/Mobility* • Knee to wall closed chain dorsiflexion mobilization • Gastroc stretch • Soleus stretch *Manual Therapy* • Grades I-IV to talocrural, subtalar and midfoot for pain control and mobility *Strengthening* • Resisted dorsiflexion, resisted eversion, resisted plantar flexion, resisted inversion • Double leg heel raises • Single leg heel raises • Standing toe raises • Open and closed chain knee, hip, and core strengthening *Motor control/Balance* • Tandem stance: Firm and unstable surface • Tandem walking • Single leg stance: Firm and unstable surface • Rocker board / Wobble board
Criteria to Progress	• Non-antalgic gait pattern • Equal single leg stance time and quality bilaterally • Full ankle PROM and AROM • 5/5 ankle strength with MMT

PHASE III: LATE/CHRONIC (7-10 WEEKS AFTER INJURY)

Rehabilitation Goals	• Optimize strength • Optimize balance • Initiate plyometric activities • Initiate return to running
Brace	• Utilize lace up brace for functional activities as needed
Additional Intervention	*Strengthening* • Closed chain strengthening and endurance for entire lower extremity *Progress established strengthening exercises with increasing resistance and repetitions

**Continue with Phase I-II Interventions*	*Motor control/Balance* • Single leg multidirectional reach: Firm and unstable surface • Dual task balance exercises: Ball toss with decreased base of support or unstable surface *Plyometrics/Agility* • Double leg hopping • Lateral bounding • Initiate agility ladder drill
Criteria to Progress	• Able to perform 25 single leg heel raises or equal number compared to uninvolved side • 80% or better performance on involved lower extremity compared to contralateral side with Star balance / Y-balance excursion test compared to uninvolved side • Appropriate scores on patient reported outcome measure (e.g. Cumberland Ankle Instability Tool or FAAM)

PHASE IV: RETURN TO SPORT/FUNCTIONAL ACTIVITIES (11-16 WEEKS AFTER INJURY)

Rehabilitation Goals	• Full strength of foot and ankle • Improve motor control with higher level activities • Return to normal activities
Additional Intervention **Continue with Phase I-III interventions*	*Plyometric/Agility* • Single leg agility drills • Single leg hopping • Change in speed and change in direction drills *Return to sports/function* • Interval sports training • Return to running progression • Compound strengthening exercises
Criteria to Progress	• 90% or better performance on involved lower extremity on Star balance / Y-Balance excursion test • 90% or better performance on involved lower extremity on single leg hop for distance, triple hop for distance, 6m timed hop, and/or cross over hop for distance • Appropriate scores on patient reported outcome measure (e.g. Cumberland Ankle Instability Tool or FAAM) • No increase in pain or swelling with plyometric and return to sports activities

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Contact	Please email *** with questions specific to this protocol

References:

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3. Struijs PA, Kerkhoffs GM. Ankle sprain. *BMJ Clin Evid*. 2010;2010:1115. Published 2010 May 13.