

## **High Ankle Sprain Rehabilitation Guideline**

This rehabilitation program is designed to return the individual to activity as quickly and safely as possible. It is designed for rehabilitation following high ankle sprain. Modifications to this guideline may be necessary dependent on physician specific instruction, specific tissue healing timeline, chronicity of injury and other contributing impairments that need to be addressed. This evidence-based high ankle sprain guideline is criterion-based; time frames and visits in each phase will vary depending on many factors including patient demographics, goals, and individual progress. This guideline is designed to progress the individual through rehabilitation to full sport/ activity participation. The therapist may modify the program appropriately depending on the individual's goals for activity following high ankle sprain.

This guideline is intended to provide the treating clinician a frame of reference for rehabilitation. It is not intended to substitute clinical judgment regarding the patient's post injury care, based on exam/treatment findings, individual progress, and/or the presence of concomitant injuries or complications. If the clinician should have questions regarding progressions, they should contact the referring physician.

### **General Guidelines/Precautions:**

- General healing timeline highly variable but can expect 6-8 weeks (average 45-55 days)
- Precautions to certain exercises
  - Avoid forceful ballistic dorsiflexion

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<p><b>Phase I</b> Acute Phase</p> <p>0-2 Weeks</p> <p>2-6 Expected Visits</p>	<p><b>Discuss:</b></p> <ul style="list-style-type: none"> <li>Anatomy, existing pathology, rehab schedule and expected progressions.</li> </ul> <p><b>General considerations:</b></p> <ul style="list-style-type: none"> <li>Severe injury may require complete immobilization by splinting, casting, or boot type immobilizer. Less severe injury may utilize lace up ankle brace, stirrup or taping.</li> </ul> <p><b>Weight-bearing:</b></p> <ul style="list-style-type: none"> <li>Depends on patients' symptoms and injury severity. Can vary from NWB to full WB'ing. Use of crutches is advised until gait is essentially normal.</li> <li>Specific Instructions: External rotation and end range Dorsiflexion are avoided.</li> </ul> <p><b>Suggested Treatments:</b></p> <ul style="list-style-type: none"> <li>Modalities as indicated: <ul style="list-style-type: none"> <li>Edema controlling treatments-Game Ready, Dermafit, lymphatic massage</li> </ul> </li> <li>ROM : <ul style="list-style-type: none"> <li>PROM, AAROM, AROM within ROM tolerance</li> </ul> </li> <li>Manual Therapy: <ul style="list-style-type: none"> <li>tibiofibular ,talocrural and subtalar mobilizations for improvement of plantarflexion, dorsiflexion, inversion and eversion</li> </ul> </li> </ul> <p><b>Exercise Examples:</b></p> <ul style="list-style-type: none"> <li>ROM <ul style="list-style-type: none"> <li>Ankle pumps</li> <li>Arch raise</li> <li>NWB › WB calf stretch</li> <li>Stationary Bike</li> <li>Gentle Mobilizations grade I-II</li> <li>Seated BAPS › standing with UE assist</li> </ul> </li> <li>Strengthening <ul style="list-style-type: none"> <li>SLR, side lying abduction, clam shell, isometrics for the ankle PF/DF progressing to band exercises, seated calf raise</li> <li>Pool/aquatic exercises if available</li> <li>Alter G if available</li> </ul> </li> <li>Proprioception/Neuromuscular <ul style="list-style-type: none"> <li>Weight shifting in standing as tolerated</li> <li>Single leg balance (eyes open)</li> <li>Side stepping once able to bear full weight</li> <li>Low level balance training</li> </ul> </li> </ul>	<p><b>Goals of Phase:</b></p> <ul style="list-style-type: none"> <li>Diminished pain , inflammation, swelling</li> <li>Improved flexibility/range of motion</li> <li>Reestablished dynamic muscle control, balance, and proprioception</li> <li>Ability to weight shift onto involved lower extremity</li> <li>Ability to ambulate in full weight-bearing on level surfaces and stairs with minimal discomfort</li> </ul> <p><b>Criteria to Advance to Next Phase:</b></p> <ul style="list-style-type: none"> <li>Normal and pain free gait pattern on level surfaces and stairs</li> <li>Girth measurements within 1 cm</li> <li>ROM within 5°</li> <li>Pain-free ADL's</li> </ul>
<p><b>Phase II</b> Intermediate Phase</p> <p>2-5 Weeks</p> <p>6-8 Expected Visits</p>	<p><b>Specific Instructions:</b></p> <ul style="list-style-type: none"> <li>Continue to avoid forceful external rotation and dorsiflexion</li> </ul> <p><b>Suggested Treatments:</b></p> <ul style="list-style-type: none"> <li>Modalities as indicated: <ul style="list-style-type: none"> <li>Edema controlling treatments-Game Ready, Dermafit, lymphatic massage as needed after exercise</li> </ul> </li> <li>ROM: <ul style="list-style-type: none"> <li>Passive range of motion progressions to end range, standing gastroc and soleus stretch as pain allows (avoid "pinch" felt in anterior ankle), half kneeling dorsiflexion ROM</li> </ul> </li> <li>Manual Therapy: <ul style="list-style-type: none"> <li>tibiofibular ,talocrural and subtalar mobilizations for improvement of plantarflexion, dorsiflexion, inversion and eversion as needed</li> </ul> </li> </ul> <p><b>Exercise Examples:</b></p> <ul style="list-style-type: none"> <li>ROM: <ul style="list-style-type: none"> <li>Low- load, long duration as well as repetitive motion through range of motion, Standing gastrocnemius stretch</li> </ul> </li> <li>Other Activities: <ul style="list-style-type: none"> <li>May start to utilize elliptical equipment as tolerated</li> </ul> </li> <li>Aquatic therapy and/or Alter G, treadmill walking up to 20 minutes, no incline</li> </ul> <p style="text-align: right;"><i>Continued on next page</i></p>	<p><b>Goals of Phase:</b></p> <ul style="list-style-type: none"> <li>Progress to full active and passive ROM, normalize joint mobility</li> <li>Improve muscular strength and endurance</li> <li>Improve total body proprioception and neuromuscular control</li> <li>Return to basic function in activities of daily living</li> </ul> <p><b>Criteria to Advance to Next Phase:</b></p> <ul style="list-style-type: none"> <li>Full PROM/AROM</li> <li>Pain-free ambulation x 20' on level surfaces</li> <li>Pain-free reciprocal stairs</li> <li>Single leg balance, within 85% of uninvolved side, eyes closed</li> <li>LE "Y" balance assessment within 5% side to side</li> <li>No increase swelling with increased activity level</li> </ul>

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<p><b>Phase II</b></p>	<p><i>Continued from previous page</i></p> <ul style="list-style-type: none"> <li>• Strengthening               <ul style="list-style-type: none"> <li>• Cords/bands, Ankle weights, Heel raises-start with foot flat and progress to over edge of step (un-weighted to weighted), step up/step down-adding heel raise as able, calf press with isotonic equipment, leg press, standing fire hydrant.</li> <li>• Begin with lower intensity, high repetition sets progressing to higher intensity, low repetition sets.</li> </ul> </li> <li>• Proprioception/Neuromuscular               <ul style="list-style-type: none"> <li>• Begin double leg, transition to single leg when control is demonstrated</li> <li>• Perform balance exercises with knee extended or nearly extended to utilize ankle balance strategy</li> <li>• Progressive use of balance boards, air cushions, wobble boards in anterior/posterior, medial/lateral , multi planes</li> <li>• Single leg balance (eyes closed)</li> <li>• Side stepping with band resistance (knees to ankles) , Theraband four ways (band around non-affected ankle, kick in 4 directions, stand on affected)</li> </ul> </li> </ul>	
<p><b>Phase III</b> Advanced Strengthening/ Movement Retraining</p> <p>4-8 Weeks</p> <p>4-10 Expected visits</p>	<p><b>Specific Instructions:</b></p> <ul style="list-style-type: none"> <li>• Continue with previous exercise program</li> <li>• Use of lace-up brace should be used to support the joint</li> <li>• Continue to monitor for quality of movement and symptoms of pain or instability</li> </ul> <p><b>Suggested Treatments:</b></p> <ul style="list-style-type: none"> <li>• Modalities Indicated:               <ul style="list-style-type: none"> <li>• Edema controlling treatments as needed</li> </ul> </li> <li>• ROM:               <ul style="list-style-type: none"> <li>• As needed if restricted gastroc-soleus</li> </ul> </li> <li>• Strengthening:               <ul style="list-style-type: none"> <li>• Continue with previous exercises and progressions increasing resistance</li> <li>• Advanced neuromuscular training with exercises beginning slowly in single direction and progressively become more quick, intense, and dynamic.</li> <li>• Plyometrics- jump up to box(2 feet,2feet to affected, 1 foot to opposite, 1 foot to same foot), squat jump, split squat jump, broad jump, power step ups, four square hop (bilateral to unilateral)</li> <li>• Emphasize good form/technique</li> <li>• Initiate running in a straight line</li> </ul> </li> <li>• Proprioception/Neuromuscular               <ul style="list-style-type: none"> <li>• Lateral agility</li> <li>• Deceleration</li> <li>• 90° cutting</li> <li>• Figure 8's</li> <li>• Jumping rope</li> </ul> </li> </ul>	<p><b>Goals of Phase:</b></p> <ul style="list-style-type: none"> <li>• Prepare ankle and leg for return to practice and eventual game situation</li> <li>• Straight line jogging</li> <li>• Lateral movement</li> <li>• Return to strength training , regular routine</li> <li>• Improve muscular power, speed and agility</li> </ul> <p><b>Criteria to Advance to the Next Phase:</b></p> <ul style="list-style-type: none"> <li>• “Y” balance test within 4 cm anterior, posteromedial and posterior lateral.</li> <li>• Equal side to side with agility tests</li> <li>• Perform straight line activities pain-free.</li> </ul>
<p><b>Phase IV</b> Return to Performance Phase/Return to Full Activity</p> <p>6-10 Weeks</p> <p>4-10 Expected visits</p>	<p><b>Specific Instructions:</b></p> <ul style="list-style-type: none"> <li>• Continue progression with previous exercise program and monitoring</li> <li>• Development of individualized maintenance program based on timing of season and needs of the patient</li> <li>• Recommendations on return to sport</li> <li>• Communication with ATC, coaches, and/or parents as needed</li> </ul> <p><b>Suggested Treatments:</b></p> <ul style="list-style-type: none"> <li>• Return to Performance Program if available</li> <li>• Biomechanical movement evaluation to clear for return to activity</li> <li>• Sport specific drills (dribbling, running specific routes, skating stops and starts using inside and outside edges, crossovers, jumping/hopping and landing)</li> </ul> <p style="text-align: right;"><i>Continued on next page</i></p>	<p><b>Goals of Phase:</b></p> <ul style="list-style-type: none"> <li>• Return to sport with the ability to perform sporting tasks at game speed with quality movement and control</li> <li>• Development of individualized maintenance program in preparation for discontinuation of formal rehabilitation.</li> </ul>

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<p><b>Phase IV</b></p>	<p><i>Continued from previous page</i></p> <p><b>Exercise Examples:</b></p> <ul style="list-style-type: none"> <li>• Progression of total body strength training program</li> <li>• Progression of Interval Throwing Program</li> <li>• Sport specific/position specific drills or appropriate Sport Specific Interval Program</li> <li>• Running, jumping rope, jumping, hopping, skipping, shuffling, carioca, fig 8, cones, barriers, ladders</li> </ul>	<p><b>Criteria for Return to Sport/Discharge:</b></p> <ul style="list-style-type: none"> <li>• Minimal discomfort with tasks without compensation</li> <li>• Successful completion of Return to Performance Program (if available).</li> <li>• Biomechanical movement evaluation without compensation/hesitation 85%</li> <li>• Triple hop within 90%</li> <li>• Crossover triple hop within 90%</li> <li>• 6m timed hop within 90%</li> <li>• Y balance test within 4cm anterior, posterior/medial, posterior/lateral reaches</li> <li>• 30 cm side hop timed test within 90%</li> </ul>

**REFERENCES:**

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