OrthoIllinois PODIATRIC SURGERY

Ankle Sprain Protocol

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General Instructions:

This protocol is a general guideline only. Clinically a patient may present with symptoms that allow them to skip to phase II or phase III. The patient should be able to meet all the criteria of the next phase of the protocol before progressing into that particular phase completely. There will be some blending of the activities from one phase to the next, however, the criteria to progress into the next phase of treatment should be met before all the activities of that phase are performed.

Patient Name:_____ Date:_____

Rehabilitation Phase: Dates From___/___/___ to___/___/___

Phase 1

Criteria to Progress to this Phase:

- Cleared by physician to initiate therapy

Anticipated Impairments and Functional Limitations:

- Abnormal gait cycle with impaired balance/proprioception
- Decreased joint AROM and strength
- Difficulty with FWB transitioning from walking boot to regular shoes without assistive device
- Unable to safely ambulate over uneven ground without supportive brace wearing regular shoes

Goal:

- Decrease pain and swelling
- Increase ankle joint ROM, (Limiting Plantarflexion and Inversion to Pain Free Limits)
- Increase strength and proprioception
- Wean from walking boot, utilizing it only when increased symptoms
- Improve gait to full weight bearing in regular shoes utilizing ASO/Velocity or similar type of lateral ankle support
- Increase soft tissue flexibility only as indicated
- Increase knowledge and awareness of injury and rehabilitation

Rationale:

- Modalities decrease pain and swelling
- ASO or other supporting brace helps to control sub-talar joint movement
- PREs and closed chain activities increase strength and improve balance and coordination
- ROM improves gait cycle and ambulation up and down steps
- Home exercise programs and education improve patient follow-through at home

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Intervention:

1. WBAT without a walking boot using an ankle stabilizing brace, in regular tennis shoes, using pain and effusion as a guide. **(wearing ankle stabilizing brace during therapy should be avoided**, however, use pain and effusion as a guide)
2. If pain and effusion are a problem, wear walking boot at least 5 hours per day until no pain is experienced without it. Then re-initiate weaning off of boot walker.
3. E-stim, US, Game Ready Compression, contrast bath, whirlpool and /or ice may also be utilized if effusion and pain are a problem (US and ice need to be performed with ankle in 0 degrees DF)
4. Initiation of pool program or unweighting apparatus may be necessary to progress towards full pain-free WB.
5. Joint mobilizations of the foot and ankle should be initiated only if a limitation of talocrural DF is present. (GRADE II ONLY WITH NO PAIN)
6. Initiate pain free stationary bike with absent to minimal resistance
7. Gentle gastroc/soleus stretch. (seated with a towel initially, progressing to full WB runners stretch with a small block or magazine under medial aspect foot or stretching wedge)
8. Hamstring, quad, hip flexor, and piriformis stretch.
9. Seated heel-toe raises progressing to standing heel-toe raises while supporting with hands on counter top or wall.
10. Toe curls and toe extensions for foot intrinsics. (progress seated to standing position)
11. Pain Free BAPS board seated no greater than level 2 through all phases of therapy. (progress to bilateral standing BAPS – "surfer BAPS)
12. Pain free Double and Single leg total gym leg press. (progress to cushion on platform of TG with no pain)
13. Pain free single leg stance while supporting with bilateral upper extremities. (Initially performed for 5-10 seconds each repetition, progressing to 15 seconds or more each repetition)
14. Rocker board Sagittal plane with bilateral stance. (performed in standing)
15. Pain free Slide Board Adduction. (Standing on involved leg sliding uninvolved leg in frontal plane motion)
16. Pain free forward lunges. (low intensity; progressing towards dumbbells)
17. Pain free forward treadmill not to exceed a 2 degree incline.

--Refer to phase I home maintenance program in back of protocol—

Rehabilitation Phase: Dates From___/___/___ to___/___/___

Phase II

Criteria to Progress to this Phase:

- Patient progressing with decreased pain and stable edema
- Progressing with AROM
- Progressing with Single Leg Balance
- Patient no longer needs walking boot and is utilizing ankle stabilizing brace at all times
- Patient demonstrating progression towards FWB and normalized gait in regular shoes without use of assistive device

Anticipated Impairments and Functional Limitations:

- Mild to moderate restriction in joint and/or muscle flexibility
- Mild edema causing decreased AROM and limiting strength
- Limited strength creating decreased proprioception
- Proprioception not symmetrical with uninvolved lower extremity creating instability with ambulation
- Decreased mid-stance and toe-off in gait cycle of involved lower extremity without assistive device

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Goal:

- Increase AROM of Talocrural Dorsiflexion to within 5 degrees of uninvolved lower extremity
- Increase soft tissue flexibility throughout bilateral lower extremities to close within symmetrical limits
- Increase involved single leg balance to within 15 seconds of uninvolved lower extremity
- Mid-stance and toe-off phase of gait close to within symmetrical limits
- Pt to utilize regular shoes 100% of time with day to day activities
- Decreased pain with weight bearing and gait
- Initiate Occupational/Sports related activities

Rationale:

- Modalities decrease pain and swelling
- Aerobic activity promotes improved blood flow and decreased edema via muscular pump mechanism
- Repetitive functional patterns promote improved timing, coordination, and control of lower extremity
- Strengthening in functional patterns provide neuromuscular re-education and strengthening of weakened musculature
- Flexibility improves talocrural joint function which improves pain with ambulation, squatting, and stair climbing

Intervention:

1. Continue with palliative modalities after therapy if pain and effusion remain a problem.
2. Increase resistance of stationary bike within pt's tolerance
3. Talocrural mobilization if DF deficit (Grade II only)
4. Gastroc/soleus, quads, hamstrings, hip flexor, and piriformis stretch in clinic as needed
5. Progress to single leg toe raise if pt is able to perform 3x10 double leg toe raise
6. Initiate single leg standing BAPS no greater than level #2 (opposite toe can touch; progress with weights placed anterior, posterior, and medially)
7. Progress resistance of pain free Single Leg Total Gym leg press (Double Leg can be D/C'd)
8. Initiate pain free wall squats (can progress to stance on cushion and/or therapy ball on wall)
9. Progress pain free single leg stance time per repetition and/or stand on unstable surface
10. Progress bilateral stance rocker board to holding a weight or a ball
11. Progress slide board in frontal plane by placing stance leg on uneven surface
12. Initiate repeated tubing in standing ADD, EXT, and FLEX standing on involved leg (start at 30 seconds each direction and progress to 1 to 2 minutes)
13. Progress pain free forward lunges to unstable surface
14. Progress pain free forward treadmill MPH
15. Initiate pain free retro treadmill (optional ---sometimes helpful if ant jt pain present with squatting or stairs)
16. Initiate pain free anterior and medial step downs (begin with 2 inch step and progress p to 8 inch step)
17. Initiate pain free single leg stance with anterior reach and lateral reach for soleus strengthening
18. Initiate appropriate intensity level of occupational/sports specific activities
19. Initiate high level balance/proprioceptive training (Eyes Open/ Eyes closed) without brace.

--Refer to phase II home maintenance program in back of protocol—

Rehabilitation Phase: Dates From___/___/___ to___/___/___

Phase III

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Criteria to Progress to this Phase:

- Abolished pain with ambulation over flat ground
- AROM dorsiflexion within 5 degrees of uninvolved lower extremity
- Single Leg balance to within 10 seconds of uninvolved lower extremity
- Mid-stance and toe-off of gait close to within symmetrical limits
- Patient utilizing regular shoes 100% of the time with normal day to day activities and using ankle stabilizing brace with higher level activities as needed
- Return to sport dependent on ability to perform single leg heelraise and symmetrical time in affected limb single leg stance compared to unaffected limb.

Anticipated Impairments and Functional Limitations:

- Limited strength creating decreased proprioception
- Mild restriction in joint flexibility
- Mild pain only with higher level occupational/sporting activities
- Moderate limitations ambulating/running over uneven ground

Goal:

- Mid-stance and toe-off phase of gait to within symmetrical limits
- Soft tissue flexibility of bilateral lower extremities to symmetrical limits of uninvolved lower extremity
- Increase involved single leg balance to within 5 or 10 seconds of uninvolved lower extremity
- Independence and proper performance with home exercise program progression
- Pt. performing repetitive occupational/sporting activities with mild to abolished pain
- Discharge palliative modalities in clinic (transition to home with ice, etc…)

Rationale:

- Aerobic activity promotes improved blood flow and decreased edema via muscular pump mechanism
- Repetitive functional patterns promote improved timing, coordination, and control of lower extremity
- Strengthening in activity specific patterns provide neuromuscular re-education and strengthening of weakened muscle
- Advanced dynamic functional strengthening activities ensures a safe return to all occupational/sporting activities

Intervention:

1. Continue Stairmaster and/or bike for warm-up
2. Progress joint mobilizations only as needed (Most patients will have close to full available motion at this time)
3. Lower kinetic chain flexibility as needed.
4. Forward and/or retro TM
5. Pain free standing bilateral toe raises progressing to single leg
6. D/C standing toe cur/ext.
7. Progress standing BAPS with weight at medial, lateral, and anterior positions; no greater than level #2
8. Progress Total Gym leg press and/or Wall Squats with resistance and/or unsteady surface
9. Progress time of Single Leg Stance on unsteady surface
10. Progress rocker board with T-band around pt's waist in various positions.
11. D/C slide board
12. Progress repeated tubing in standing to stance leg on cushion
13. Progress repetitions and/or surface of forward lunges
14. ***Initiate*** pain free lateral lunges
15. Progress with step height of anterior and medial step downs
16. Progress with repetitions, time, or surface of lower extremity reaching
17. Progress intensity of occupational/sports specific activities (ex. Bilateral or single leg line jumping or dot drills.)

--Refer to phase III home maintenance program in back of protocol—

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Suggested Home Maintenance Program

Phase I:

1. General pain free AROM exercise in non-WB position (alphabet, seated heel/toe etc…)
2. Pain free Gastroc-Soleus stretch non-WB with towel (only if indicated)
3. Pain free seated heel/toe raises
4. Isometrics as indicated focusing on eversion and plantarflexion
5. Pain free single leg stance eyes open
6. Pain free repeated tubing in standing (light resistance)
7. Stationary bike or pain free pool exercise can be performed to improve conditioning
8. Ice, elevation, and compression as needed
9. ASO/Velocity ankle brace should be worn at all times

Phase II:

1. Pain free WB gastroc-soleus stretching
2. Pain free standing heel/toe raises
3. Single leg balance, eyes open and/or closed
4. Pain free repeated tubing in standing
5. Pain free step ups and step downs
6. Pain free single leg stance with reach
7. Bike, Treadmill, or pool exercise for LE conditioning
8. Ice as needed
9. ASO/Velocity ankle brace worn at all times

Phase III:

1. Standing heel/toe raises and standing gastroc-soleus stretch
2. Repeated tubing in standing
3. Step ups and step downs
4. Single leg stance with reach
5. Initiate forward and lateral lunging
6. Stairmaster, Bike, Treadmill for LE conditioning
7. Ice as needed
8. Wearing ASO/Velocity brace can be limited to higher level activities as indicated by pain and effusion

Home Exercise Program at D/C:

1. Pain free toe raises, double and/or single
2. Repeated Tubing in Standing/ Hip 3-way
3. Pain free Lunges frontal and sagittal planes
4. Anterior and Medial step downs
5. Pain free ambulation, bicycling, jogging, stairmaster, etc…
6. Return to sport as per physician recommendation (usually return to practice only at approx. 15 weeks)
7. Icing as necessary
8. ASO/Velocity brace worn for all sporting activities until discharged by physician