

## Background

Athlete is a 12-year-old female cheerleader/tumbler. Athlete's prior medical history includes a left hip flexor strain and Ehlers-Danlos syndrome. Athlete reports being dropped at cheer camp. She saw her orthopedic who casted her for 3 weeks and referred her for PT 2-3 times/week for sprain of ligament in left ankle. She now presents with the cast removed. Athlete presents with antalgic gait and decreased weigh shift and toe off. (+) Talar Tilt Test, (-) Anterior Drawer, (-) Bump Test. Dorsiflexion: 12 degrees, Plantarflexion: 34 degrees, inversion: 60 degrees, Eversion: 12 degrees. Athlete is point tender at lateral aspect of left ankle, no swelling noted, presents with pronated foot posture.

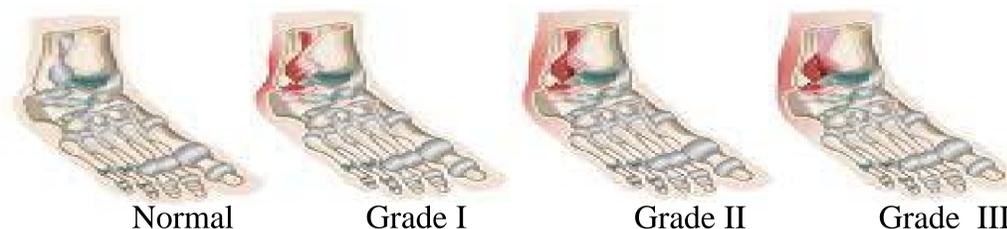
## Clinical Presentation

- Pain
- Swelling
- Decreased ROM
- Previous history of multiple inversion ankle sprains
- Previous history of Ehlers-Danlos Syndrome

## Differential Diagnosis

- Lateral Ankle Sprain,
- Calcaneal Stress Fracture
- Fibular Fracture
- Ankle Strain

Different Grades Ankle Sprain



## Uniqueness

Ankle sprains are very common in athletes, especially in cheerleaders and tumblers. The factors that make this case unique are that the athlete is only 12 and that she has been previously diagnosed with Ehlers-Danlos Syndrome. The Ehlers-Danlos syndromes (EDS) are currently classified into thirteen subtypes. Each EDS subtype has a set of clinical criteria that help guide diagnosis; a patient's physical signs and symptoms will be matched up to the major and minor criteria to identify the subtype that is the most complete fit. At this time, research statistics of the Ehlers-Danlos syndromes show the total prevalence as 1 in 2,500 to 1 in 5,000 people. Recent clinical experience suggests that Ehlers-Danlos syndrome may be more common. The conditions are known to affect both males and females of all racial and ethnic backgrounds and is known to be hereditary. This athlete has the EDS type where the skin is often soft and may be mildly hyperextensible. Subluxations and dislocations are common; they may occur spontaneously or with minimal trauma and can be acutely painful. Degenerative joint disease is also common. With this being the case for this athlete we can see how the laxity of her joints and skin combined with her level of activity and competitiveness can continue to cause injury.

## Treatment

### Acute:

- RICE , CAST

### Therapeutic:

- The proposed skilled interventions for this athlete will include evaluation/treatment, safe design and progression of therapeutic exercise program, manual therapy techniques, address safety concerns, neuromuscular reeducation and dynamic proprioception, patient education and home program instruction, restoration of biomechanics, test and measures, modalities, gait and balance training, progressive resistive exercises, and evidence-based program development.

## Rehabilitation

- Athlete was casted for three weeks weight-bearing as tolerated. After the cast was removed, the athlete's rehabilitation plan consisted of:
  - **Phase 1**
    - Weight-bearing
    - Ankle range of motion
    - Core stabilization
    - Cardiovascular training
  - **Phase 2**
    - Closed- kinetic chain lower extremity strengthening
    - Biking
    - Core stabilization
    - Proprioception
    - Cardiovascular training
  - **Phase 3**
    - Sport-specific activities
    - Endurance training
    - Released to full activity three weeks post cast

## Conclusions

This case portrays the complexity and treatment for an athlete suffering with an ankle sprain along with the previous diagnosis of EDS. It highlights the prevalence of EDS and the conservative treatments for an athlete suffering from this syndrome and the athlete's successful return to play with physical therapy intervention. This case review can be beneficial to the public population to show how to properly treat an athlete with Ehlers-Danlos syndrome since it is not commonly heard of.