

*Surgical & Non-Surgical Care. Sports Medicine. Physical Therapy.***ON-SITE
ORTHOPEDIC
CLINICS EACH
WEEK**

- No Charge
- Open to patients of all ages
- Appointments (918) 346-7800

Collinsville Public SchoolsMonday/Wednesday
2:00pm—3:00pm**Coweta Public Schools**Wednesday
2:45pm—3:30pm**Edison Preparatory School**Monday/Thursday
2:45pm—3:30pm**Glenpool Public Schools**Wednesday
2:45pm—3:30pm**Kellyville Public Schools**Wednesday
Noon—12:45pm**Regent Preparatory School**Wednesday
Noon—12:45pm**Rejoice Christian School**Monday/Wednesday
3:15pm—4:00pm**Victory Christian School**Tuesday
2:45pm—3:30pm**Wagoner Public Schools**Wednesday
2:45pm—3:30pm

*Hosted by CSO Athletic Trainers and Physician Assistants.

EXAMINATION OF THE SPINE AND EXTREMITIES: THE ANKLE

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Regardless of individualized sport or activity level, injuries to the ankle are the most common orthopedic and sports medicine injury among active individuals. Whether your activity is baseball, volleyball, running, or Frisbee golf, injuries to the ankle joint are common across every sport and across every patient population. In fact, injuries to the ankle are a regular cause for patients of all ages to visit urgent cares and emergency rooms every year. And as for the high school athletes, 15.5% of all high school athletic injuries during the 2013-2014 school year were injuries to the ankle. So whether you're 15 or 55, if you are active on a regular basis, chances are you've had to address an ankle injury at some point in time.

Comprised of only three bones, the ankle joint is formed as the tibia and fibula create a horseshoe-like shape over the top of the talus. The tibia and fibula are connected by ligaments, both anteriorly and posteriorly, in addition to a strong syndesmotic ligament that runs the entire length of the two bones. The tibia and the fibula are each likewise attached to the talus below by numerous ligaments both inside and out.



Ankle Physiology

The ankle joint has 6 distinct directions of movement and just over 100 degrees of motion. With every step, the ankle joint adapts to variances in the ground and surface. In terms of functional ankle stability, when the heel is down and the foot is fixed, stability of the ankle is very easily achieved by the joint's bony congruency and the joint's ligamentous and muscular tissues. However, when the ankle is flexed to where the foot is pointing downward away from the ankle joint, the stability of the ankle greatly reduces and the opportunity for injury greatly increases.

For the ankle specifically, most injuries usually occur when landing on the toes of a single leg. As we have already described, this landing position is the weakest and least stable position for the joint. In addition, an average of 6 times one's body weight is transmitted through the tibia upon each foot strike during running or jumping. And, as basically every recreational activity requires the individual to land in this position numerous times, a tremendous amount of force is transmitted through the joint throughout the course of an average practice or competition. As a result, it is not surprising that the ankle is injured so often. As a general rule of thumb, regardless of the sport and regardless of the joint in question, the likelihood for injury is highest when the force transmitted through a joint is at its greatest at the same time that joint stability is at its least.

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Common Injuries

Achilles Tendinitis:

As a very common inflammatory condition involving the Achilles tendon insertion directly posterior to the ankle joint, Achilles tendinitis is often grouped in with other ankle injuries even though the tendon itself inserts on the calcaneus. Considered one of the more nagging injuries, Achilles tendinitis is characterized by stiffness, pain, and reduced strength. As the tendon heals slower than bone or muscular injuries, injuries to the Achilles should be managed conservatively and progressively.

High Ankle Sprain:

As its name implies, a high ankle sprain occurs in the superior aspect of the ankle joint. Unlike other ankle sprains, high ankle sprains (aka: syndesmotic sprains) are exceptionally debilitating. As the tibia and fibula join together at the apex of the ankle joint, these high sprains to the ligaments of the distal tibiofibular joint can greatly reduce the stability of the entire joint, incapacitate one's ability to bear weight, and oftentimes require immobilization and even surgical fixation to completely recover and heal.

Avulsion Fractures of the Lateral Malleolus:

When the ankle joint is forcefully rolled outward during landing or falling, the joints lateral restraining ligaments pull tight and reach their end range quickly and quite forcibly. In most cases, this rapid force on the ligament is also transmitted into the ligament's bony attachment as the ligament begins to tear. However, in adolescents where the bones are still growing and developing and therefore slightly weaker than mature bone, this violent force can easily fracture and pull away portions of the bone instead.

Common Ankle Sprain:

This topic was described in detail in our December 2009 edition. As always, all previous editions of our newsletter are located on our website at no charge.

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Injury Prevention

Reducing the likelihood of sustaining an ankle injury is multifaceted in its approach.

Ankle Bracing:

Many are of the opinion that the utilization of athletic bracing serves only to weaken or destabilize a joint over time. This is a true statement, but only in a certain context. Long-term (i.e. >3-5 days) daily bracing or splinting will reduce your own bodies' strength, motion, and stability. However, short-term (i.e. 2-3 hours) bracing does not. In fact, short-term bracing operates more like a good insurance policy against injury instead of a pre-disposition to injury. As the demand on the joint is greatly increased during athletic practices and games, gaining added stability from a brace is a very appropriate preventative measure.

Balance and Coordination Training:

With practice, the body not only learns to improve balance and coordination, but it likewise learns to improve positioning and control. Exercises like dot drills, foot ladders, jump ropes, etc... serve to increase the body's ability to control the ankle joint more effectively, more efficiently, and with improved stability.

Strength and Flexibility:

Focused strengthening and flexibility of the posterior calf musculature (i.e. gastrocnemius, soleus) serve to greatly reduce the likelihood of Achilles tendinitis while likewise increasing the density and strength of the tendon over time.

Ankle Taping:

In a general sense, ankle taping can be a very appropriate intervention for injury prevention and for returning to play after injury as well. Central States Orthopedics has created a two-page color handout on How to Tape an Ankle that is located on the Home Exercises page of our website.

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For our entire newsletter disclaimer, visit the Sports Medicine Newsletter page on our website: <http://www.csosortho.com/sports-medicine-monthly.html>

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