



THE REGION'S LEADER IN SPORTS MEDICINE

Athletic Training Room News

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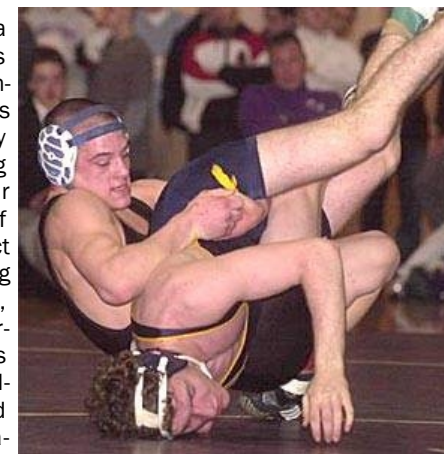
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Cauliflower Ear: Early treatment prevents permanent deformity

Auricular hematoma otherwise known as cauliflower ear is a common sports injury that is seen predominantly during the wrestling season. Cauliflower ear occurs as a result of trauma caused by direct contact and/or shearing forces to the pinna, which is the outer portion of the ear. This trauma results in a collection of blood and serum, called a hematoma. This can accumulate between and within the perichondrium and the elastic cartilage of the ear. This swelling can be palpated and may cause pain or discomfort. If left untreated, these fluids will eventually be replaced by fibrous scar tissue that will cause the permanent visible deformity that gives this condition its name.



In the event that protection failed or was not used, there are treatment options available. Ice and compression are the first line of defense with any injury that causes swelling or inflammation, and cauliflower ear is no different. However, cauliflower ear will often need intervention by a physician. A physician will typically elect to drain the hematoma, and then apply some sort of compression and dressing. Compression may be in the form of a sutured cotton roll, a silicon splint, collodion-cotton casts, or even a button sutured to the ear. Antibiotics may be prescribed at this time to reduce the risk of infection.

When the athlete returns to participation, the head gear should be double checked for proper fit. Additional padding may also be applied to the head gear to give extra protection. If you have other questions about cauliflower ear, please call our Sports Medicine Hotline at 1-866-777-7678.

While many wrestlers view cauliflower ear as a minor issue, this deformity can have an adverse affect on hearing. As the swelling expands towards the ear canal it can cause hearing loss in some cases. There is also the risk of developing an infection which can also lead to hearing loss. This swelling can further impair the athlete's sense of balance as it invades the inner ear.

Wrestlers, rugby players, boxers or any athletes that expose the ear to direct trauma are at a higher risk of sustaining cauliflower ear. As with many injuries, prevention is always best. The key is to provide the athlete with the appropriate head gear in order to reduce the risk. Wrestlers' head gear has proven to be sufficient to protect the ear as long as it is worn for all contact drills. To ensure the highest level of protection, head gear must be checked to see that it is properly fitted.



The ear on the left is an acute hematoma that can be treated. At right is an untreated chronic cauliflower ear with permanent deformity.

SPORTS MEDICINE HOTLINE
1-866-777-7678 (1-866-77-SPORT)

FROM THE DESK OF
THE DIRECTOR:



Transition time is here as we move into the winter sports season. Before moving on, I would like to take time on behalf of the Orthopedic Institute to thank all of the physicians, chiropractors, activities directors, coaches, and parents who put their trust in us to care for your athletes during this past fall sports season.

In our region, basketball and wrestling dominate the winter sports scene. Two injuries that have plagued participants in these sports over the years are spotlighted in this edition. Ankle sprains can make a basketball season miserable for anyone, and cauliflower ear is not only painful, it often leaves the athlete with a permanent deformity. The articles explain how early treatment can drastically improve the outcome.

I would like to encourage coaches to attend our Sports Medicine for Coaches clinic coming in March. At these clinics we always enjoy talking with coaches, building relationships and learning the concerns of area coaches. It is important to us to provide coaches with the information they need to deal with sports injuries.

Once again, thank you from the OI Sports Medicine Staff.

Sincerely,

Brad Pfeifle, MS, ATC
Director of Sports Medicine



ANKLE BRACING VS. ANKLE TAPING

Ankle joint injuries account for about 25% of all athletic injuries, which makes the ankle the most common site for injury in sports. The frequency of injuries to the ankle can be attributed to its structure. Due to the high rate of ankle injuries, prevention has long been a key in athletics. This leads to the debate between the time-honored tradition of taping versus bracing the ankle, and which is more effective in reducing injuries. It is important to note that studies have shown that long-term use of ankle support will not weaken or decrease the function of the ankle ligaments or surrounding muscles.

Ankle taping is a common preparation for athletic events. However, research has shown that athletic tape lost 40% of its initial support after 10 minutes of exercise. Other factors, which may include perspiration or mobility of the skin over underlying tissues like bone or ligaments also hinder the performance of tape. The experience of the person applying the athletic tape and the quantity of tape used on the ankle also affect the quality of support.

Ankle braces are often thought to be superior to athletic tape due to the rigidity or stiffness of the materials. However, braces may also have a decrease in support with sustained activity.

With braces, though, it is much more easily adjusted and their effectiveness restored. Ankle braces are also convenient in that they can be self-applied, whether it be a pick-up game or off-season workouts.



One case of athletic tape (32 rolls) costs nearly \$50 or approximately \$1.50 per roll. If it takes about two-thirds of a roll of tape per ankle and both ankles are taped 5 days

per week for 12 weeks (approximately 1 season), it costs about \$126 to tape one athlete. An ankle brace costs from \$40 to \$70. The cost of ankle taping does not take into consideration the cost of adhesive spray, under wrap, and heel and lace pads.

Eliminating all ankle injuries is not possible; however, you can reduce the severity. This information will help you decide which technique is best for your situation. Call the Athletic Trainers at the Orthopedic Institute to discuss different ankle braces as well as team discounts for ankle

ATC CLOSE-UP: JASON NELSON, MS, ATC

Jason Nelson, MS, ATC is in the spotlight of this issue's ATC Close-Up. A native of Yankton, South Dakota, Jason received his undergraduate degree from Mt. Marty College where he was a member of the Lancers' baseball team. Jason went on to South Dakota State University to obtain his master's degree while working as a graduate assistant athletic trainer for the Jacks' football and baseball teams. It was at this time that Jason first became involved with the Orthopedic Institute providing coverage for the Sioux Falls Canaries

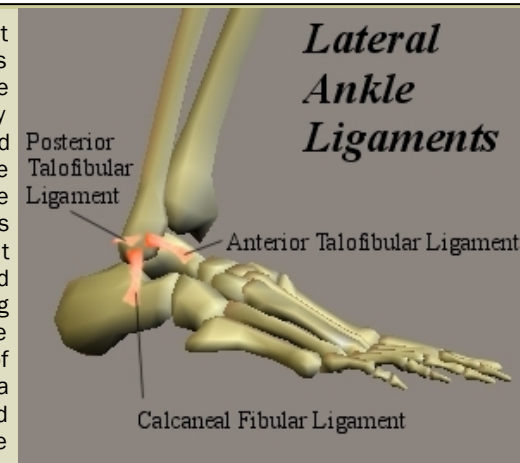


in the summers of 2001 and 2002. Jason became a full time employee of OI in the fall of 2002 when he was assigned as the head athletic trainer for the University of Sioux Falls. Jason now fills a critical role for the Orthopedic Institute providing outreach athletic training coverage to Tri-Valley and West Central high schools. Jason's family includes his wife Jill and his son Easton. Jason is an avid football fan and will undoubtedly encourage his son to cheer for the Chicago Bears and Nebraska Cornhuskers.

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SPORT'S MOST COMMON INJURY: LATERAL ANKLE SPRAINS

Ankle injuries comprise the most common category of all sports injuries. This is largely due to the ankle's involvement in every movement during ground-based athletic competition. While there are many different types of ankle injuries, this article will narrow its focus to lateral (outside) ligament sprains. The ankle joint is defined by the articulation of the long leg bones of the lower leg and the foot. Bony anatomy structures of the lateral ankle include the fibula (lateral malleolus), the talus and the calcaneus. There are three main supporting ligaments for these bones. Starting in the posterior lateral portion of the ankle is the posterior talofibular ligament. The calcaneofibular ligament is found at the most distal point of the fibula. The anterior talofibular ligament commonly referred to as the ATF is the most commonly injured ligament of the ankle. The peroneus longus and peroneus brevis tendons run behind the lateral malleolus and insert at the base of the 1st and 5th metatarsals respectively. These muscles are primary everters of the foot, and thereby provide support to the lateral ankle.



the toes and spiraling around the foot and ankle as it is worked up the lower leg. A "horseshoe", which can be made by cutting a piece of thick felt or foam in a "U" shape, can be incorporated into the wrap on the lateral side of the ankle surrounding the lateral malleolus to provide additional compression. If point tenderness is present on any of the bony structures a fracture should be suspected. If there is a suspected fracture, the ankle should be immobilized and crutches should be used. Crutches and immobilization should also be used if the athlete has pain during weight bearing or if there is an obvious limp during gait.

Once a fracture has been ruled out by a physician, many different types of modalities may be used to

control swelling and pain. These may include electrical stimulation, pulsed ultra-sound, laser and combination cryotherapy-compression devices. Gentle range of motion (ROM) exercises can be used early in therapy to assist in edema control as well as to prevent stiffness

and atrophy from setting in. When the athlete can demonstrate pain-free ROM in all directions, then resistive training can begin. Theraband exercises early in rehabilitation allow the ankle to be challenged without placing the entire weight of the body on the ankle. Rehabilitation progression then continues to various weight bearing strength and balance exercises. Once the athlete can perform strenuous ground based exercises without pain or dysfunction, plyometric exercises can begin. Plyometric exercises can be used to both prepare the athlete for impact and to test the readiness of the athlete to begin running. Running exercises should begin slowly and then progress to full speed. Cutting, planting and pivoting activities are then added as tolerated. Functional exercises and drills that simulate game situations should be used as the final test before returning the athlete to play.



Significant swelling needs to be eliminated by using compression from a horse-shoe pad and Ace wrap.

The most prevalent mechanism of injury for a lateral ankle sprain is inversion. Using basketball as an example, picture someone jumping up for a rebound and then landing on the foot of another player. This unexpected unstable landing surface causes the foot and ankle to "roll", forcing the lateral malleolus over the outside of the foot. This places great stress on the lateral ligaments of the ankle. The result is either full or partial tears of one or more of the

Lateral Ankle Injury Classifications

- Grade 1 - mild swelling and tenderness
 - able to bear weight
- Grade 2 - mild to moderate pain
 - moderate swelling
 - pain with weight-bearing
 - moderate instability upon examination
- Grade 3 - severe swelling and bruising
 - unable to bear weight
 - obvious instability upon examination

three ligaments mentioned earlier. Immediate pain and swelling will accompany the tearing of these ligaments. The severity of an ankle injury can be graded in three categories: I, II, and III.

Treatment for an acute lateral ankle sprain should include ice, compression and elevation as soon as possible. If an ace wrap is available, it can be used for compression by starting the wrap at

When making the progression to full functional activities, some sort of protection should be added. This can consist of ankle taping or bracing or the combination of both. If you have questions about a difficult ankle sprain, please call and talk with a member of our athletic training staff at 1-866-777-7678.

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