

# Athlete's Update

## Common Skin Infections In Athletes

by Nicholas Davis, MD

Well, it is winter again and sports are back in full swing! However, this increased activity also brings with it an increase in the rates of injuries. We all recognize this fact and work on using protective equipment and safe practices to limit these injuries. One frequently overlooked organ system is our largest organ, the skin. The skin has many functions including sensing our environment, maintaining our temperature and hydration, and acting as a direct barrier against infection. Our skin is very good at protecting the body against injury, bacteria, and viruses. However, many environmental conditions (weather, trauma, close contact with others, etc.) in which athletes train, test this defense system to the extreme. Any cut, scratch, burn, or abrasion disrupts this sensitive barrier and can lead to an infection. A few of the most common conditions are molluscum, athlete's foot, ringworm, impetigo, and cellulitis.

**Molluscum contagiosum** is a virus that causes painless, red, waxy bumps that have a small dimple in the center. They typically occur in small groups and can affect any part of the body. They are easily spread by scratching or picking, and direct contact with another person's lesions. The lesions should be covered completely during any contact sports and protected by a waterproof bandage when swimming. Equipment and clothing should not be shared between players. These lesions are self-limited and typically disappear in 6-12 months without treatment. Treatment options include curettage (scraping them off), liquid nitrogen (freezing), or medication.

For the sake of this article, I will lump **athlete's foot and ringworm** together. Athlete's foot is an extremely pruritic

(itchy), cracking/macerated fungal infection of the feet. Typically, it is worst in the web spaces between the 4th and 5th toes, but may involve all of the toes and top of the foot. Ringworm is a red, raised, sometimes scaly, circular or ring-shaped lesion that can occur anywhere on the body. It is also very itchy and has some central clearing in the middle. This fungus is commonly found on locker room floors and thrives in dark, moist areas (sweaty socks). There are several over-the-counter options for treatment including Lamisil™, Tinactin™, etc., but occasionally infections may need prescription antifungal therapy. There are many things that athletes can do to prevent getting these infections like changing out of damp/sweaty uniforms as quickly as possible, wearing sandals in the shower, drying feet completely after showering, and using foot powders.

**Impetigo** is an infection caused by Staphylococcus aureus (staph) and less-commonly Streptococcus pyogenes (strep). Both of these bacteria are normal inhabitants on the surface of the skin, but can enter through a break in the skin due to a minor injury or scratch. This is a fairly superficial infection that mainly involves the face, neck, arms, and legs. It is spread by direct contact with someone who is infected or in contact with contaminated towels, clothes, or sheets. This normally occurs in children 2-6 years old, but can affect anyone. It starts as a red bump/blister, then develops a yellow, gold-colored thick crust in a few days. Treatment is topical, but sometimes oral antibiotics are necessary. Impetigo can easily be prevented. Cuts, scratches, and abrasions should be washed with soap and water and have antibiotic ointment applied. In severe cases, cellulitis may develop.



**Cellulitis** is defined as an infection of the skin and soft tissue. It is typically caused by the same bacteria as impetigo, but tends to be more severe. Symptoms include redness, warmth, swelling, and tenderness of the involved area. Treatment is oral antibiotics. If left untreated, cellulitis can progress into sepsis (infection of the blood stream).

As with many other infections, the best prevention is frequent hand washing and prompt cleaning and dressing of wounds. Avoiding direct contact with an infected athlete's lesion is also important since contact is the most common route of transmission. Athletes should not share clothes, shoes, or helmets if possible. Most athletes can continue to compete with skin infections as long as the wound is completely covered.



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# Energy Drinks

by Kevin Allen, MS, ATC, CSCS

Over the last decade, energy drinks have become very popular among young adults and teenagers. Examples of energy drinks are Amp™, Monster™, Rock Star™, and Jolt™ just to name a few. Energy drinks should not be confused with sports drinks like Gatorade™ and Powerade™ which are safe and beneficial for athletes to consume. Energy drinks have been marketed heavily in recent years. I, like most certified athletic trainers, have personally witnessed many high school athletes using these drinks pre-competition to gain an energy edge. This poses the question, should teenagers be using energy drinks?

## Little to no long term research

Energy drinks are not regulated by the Food and Drug Administration (FDA). In some instances the amounts of the substances in them are not listed. With the exception of caffeine, ginseng, and B complex vitamins, there is little to no long term research on the health implications of the substances in them. Also, there is no long term research on using energy drinks themselves.



We do know that the stimulating effect of energy drinks work mainly because they contain high amounts of caffeine or guarana, the herbal form of caffeine. Some energy drinks contain both caffeine and guarana but may not list the amounts. If you are totaling up the amount of caffeine in a drink, be sure and add the amount of caffeine and the amount of guarana. There are no guidelines for the amount considered safe in the under 18 population, but the generally accepted maximum of caffeine is 100 mg per day for teenagers. In most cases, one energy drink will exceed 100 mg of caffeine.

## High levels of stress

Energy drinks affect the cardiovascular system. The caffeine and guarana content can cause an increase in heart rate and blood pressure. The greater the amount of caffeine and guarana consumed, the higher this effect will become. Add exercise, which naturally increases heart rate and blood pressure, and the cardiovascular system can undergo high levels of stress. This can be very concerning especially if there is a history of cardiac problems, unknown heart problem, or the athlete is on a stimulant medication.

Some substances in energy drinks should not be combined with certain medications. Caffeine should not be combined with monoamine oxidase inhibitors which are types of antidepressant medications. Taurine, which is an amino acid that is in many energy drinks, interacts with anticonvulsants. Consuming energy drinks with stimulant medications used to treat Attention Deficit Hyperactivity Disorder (ADHD) is a major concern. There



are many substances in different energy drinks so it is hard to determine how the energy drink will interact with a particular medication. The prescribing physician should be consulted before consuming an energy drink.

## Should not be used for hydration

The National Federation of State High School Associations (NFHS) has a position statement that energy drinks should not be used for hydration. The National Collegiate Athletic Association (NCAA) has banned the use of amino acids (i.e. taurine) and moderate levels of caffeine. If urine concentration exceeds 15 micrograms/ml of caffeine it will constitute a failed drug test.

Viewing the facts, I certainly do not recommend the use of energy drinks in teenagers. There are many risks with using them and in many cases they are being used to replace a healthy well balanced diet.

*Kevin Allen is an athletic trainer at Fairborn High School.*

## Q: Is chocolate milk a good recovery drink?

**A:** Yes, chocolate milk has been found to be an effective recovery drink, but mostly for the endurance athlete. Chocolate milk contains water, protein, calcium, carbohydrates, and a little salt and sugar; all necessary for the body to recover from an intense workout. Water replaces the fluids lost when you sweat while the salt helps

the body retain it. Protein, calcium and carbohydrates are extremely important in replacing glycogen stores and in muscle repair. These ingredients are not necessarily found in common sports drinks like Gatorade or Powerade. Two recent studies presented at the American College of Sports Medicine showed that chocolate

milk, in comparison to a carbohydrate drink, was more effective in muscle protein repair and glycogen stores. In a study involving cyclists, chocolate milk was compared to Gatorade and Endurox R4® only to find that those who drank chocolate milk were able to bike 50% longer than those who drank Endurox and about as long as those who had Gatorade.

# Homework: Ankle

## Towel Stretch



Wrap a towel around the sole of your foot and pull towards you.

## Single Leg Stance (SLS)



Stand on one ankle, cross your arms across your chest. Hold for 30 seconds. Stand on a soft surface like a pillow or seat cushion to increase difficulty. If one is not available simply close your eyes

## Heel Lifts



Rise up onto your toes from a neutral standing position. To increase difficulty, stand on the edge

of a step with your heels hanging off or from SLS.

## Heel Taps



Stand on a stair on the ankle you want to train. With the opposite foot, slowly lower body until your heel hits the floor and come back up.

Increase step height to increase difficulty.

## SLS hops



Draw a line on the floor in chalk or with tape. Hop forward and back or side to side for 15 seconds. To increase difficulty increase your time or the height and or distance you have to hop.

# The Lineup:

## Featured Staff of MVH Sports Medicine



### Angela Stahl ATC, CSCS

“I think probably the most rewarding part of my job is seeing kids return to the field after a prolonged injury.”

In the brisk evenings of the late fall and early winter you can find athletic trainers making the transition between seasons. Juggling the tournaments at the end of the fall season and preparing for the new beginnings of the winter activities.

Amongst these is Angela Stahl, a certified athletic trainer and certified strength and conditioning specialist for Miami Valley Hospital. These days Angela can be found tending to the Knights of Alter High School in Kettering.

### What is the most common injury you see?

**Angela:** The typical, or most common, injury that I see is a lateral ankle sprain. This is usually caused by an athlete coming down from a jump wrong or from taking a misstep and twisting the ankle. Usually, the athlete describes feeling or hearing a pop in the ankle. The athlete may or may not be able to put weight on the involved leg. Pain, the majority of time, is on the outside of the ankle near the ankle bone (lateral malleolus).

### Describe your diagnosis of the ankle injury.

**Angela:** My evaluation of the injury first starts with seeing if there is any kind of deformity or anything noticeably “wrong” with the ankle. I then will palpate the ankle, lower leg, and foot, to see exactly where the athlete is most sore. Range of motion and strength testing are assessed as well as any special tests that need to be done. Usually there are differences in the evaluation between the injured ankle and the uninjured ankle.

### What is the most gratifying part of your job as an Athletic Trainer?

**Angela:** The most gratifying moment of working with high school athletes would be hearing a sincere “thank you” from the athlete and the parents after helping with an extended rehab, such as an ACL tear. It is very gratifying to see that first moment the athlete returns to the sport that he/she loves, knowing that I helped get that athlete back.

### What advice do you have for an ankle injury?

**Angela:** One of the first things to do for an ankle injury is R.I.C.E.—rest, ice, compression, and elevation. This can help with managing the acute swelling that can occur with any injury. Once an athlete is capable, introducing a strengthening program for the ankle is very important.

With an ankle sprain, the ligaments and supporting structures are torn or stretched out and therefore the ankle is no longer as stable as it was prior to the injury. Strengthening the surrounding musculature can help prevent re-injury. Also, wearing a supportive brace is beneficial after an injury as well as for injury prevention.

### What sports cause the most ankle injuries?

**Angela:** Most injuries occur in sports that require a lot of jumping or agility type movements. Sports such as volleyball, basketball, soccer, and football present the majority of ankle sprains.

*Reflecting on her career choice, Angela knows immediately what keeps her in the game. “I think probably the most rewarding part of my job is seeing kids return to the field after a prolonged injury.”*

# Weight Loss and Body Composition

By Dusty Rhodes, DO, and Mike Laycox, LAT, RN



When Tommy visited the training room and asked for advice on how to lose 25 pounds following the football season, it wasn't a surprise. He had started conditioning for wrestling and was planning on competing in the 151-pound weight class.

When football began five months ago, he had visited the training room and asked for advice on how to gain 25 pounds. Now, he wanted to get lean and mean for the wrestling season but hadn't thought about how rapid weight loss might effect his athletic performance. He naturally assumed that he had a much better chance of winning at the 151-pound weight division than at 176 pounds. It does make sense that there's an advantage in wrestling to being lean, but body weight can be a very misleading measure. Rapid weight loss can have an adverse affect on performance and that's why it's important to understand weight loss in the context of body composition.

The body is made up of lean muscle, water, fat and bone. Lean muscle is essential to strength and athletic performance. Frequently an athlete will lose muscle mass while dieting and be unaware of it because they rely on standard scales to measure weight-loss. But the scale doesn't offer any information about where weight loss is coming from, so he or she may feel that they are successfully losing weight when an eight-pound weight loss shows on the scale after a vigorous workout. It is usually from water loss however, and doesn't represent any benefit. In fact, losing large amounts of water shortly before an athletic event can have a negative effect on athletic performance. The goal of any successful weight loss plan should be to lose fat and preserve muscle, and it can be accomplished through a careful balance of diet, exercise and monitoring of body composition. It can't be done quickly.

Miami Valley Hospital's Sports Medicine Center recommends a minimum of 5 to 7 percent body fat for high school wrestlers. The guideline may vary depending on the athlete's age. Skin fold measurement by a skilled professional is a good way to monitor body composition during the weight loss process.

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