

WELLNESS UPDATE 1999, #8

FRICION BLISTERS

One of the most common injuries experienced by student-athletes beginning a new sport season is friction blisters on their feet. While blisters may not seem serious, they can certainly result in lost practice time or poor quality practice due to pain. **Friction blisters are caused by friction between the foot and/or toes and one's shoe.** Most friction blisters occur on the ball of the foot, the big toe, the heel, between the toes, and at the tips of the toes. Many athletes believe blisters are an unavoidable part of participation in athletics, but most blisters are preventable. Those that cannot be prevented should be treated in the early stages to minimize discomfort and the possibility of infection.

PREVENTION OF BLISTERS

The prevention of blisters, in most cases, can be accomplished with careful attention to shoes and foot care.

Shoes

Athletes must wear shoes that properly fit their feet and are designed for their sport and the activities they will be performing. For example, **wrestlers should never run in wrestling shoes and basketball players should not practice in running shoes.** Properly fitting and designed shoes are a must in order to prevent blisters.

Shoe Selection Suggestions

1. As a general rule, **there should be a thumb's breadth (thickness) of space between the end of the longest toe and the end of the shoe.** This space should be measured while standing, as the feet are about two sizes larger when standing versus sitting.
2. Because feet swell during the day, **shoes should be tried on in the late afternoon or evening.** Be sure to try on both shoes as foot size and shoe cuts can vary.
3. **Shoes should be tried on while wearing the socks which will be worn with the shoes during activity.** Walking around the store will help reveal any obvious discomfort that will rule out certain shoes.
4. **Shoes need to be broke in by wearing them during normal activities for several days** before wearing them for athletics. Before wearing the shoes for athletics, be sure you can wear them all day without any discomfort.
5. **Shoes should be allowed to air out after every workout.**

Socks

Socks should be selected based on one's foot size and the type of exercise in which one will participate.

Sock Selection Suggestions

- 1. Tube socks are not the best choice as they tend to slide down, wrinkle, and fold over at the toes more than fitted socks.**
2. While many people find cotton socks comfortable, those who sweat heavily may find socks made from synthetic fabric, such as acrylic, more comfortable. **Synthetic socks allow more air to penetrate the sock which draws away moisture and cools the foot.**
3. Many people find that **wearing two pairs of socks, or wearing "double-layered" socks provides more cushioning and reduces friction.**

Reducing friction

Even if one is wearing proper foot wear, there are several additional things that can be done to help reduce friction, especially if one is susceptible to blisters.

Friction Reduction Suggestions

1. Excessive callus buildup can be prevented by **filing large calluses so they are smooth and do not have a ridge.**
2. **Applying skin lubricant on any areas of the foot or toes susceptible to blisters can greatly reduce the friction.**
3. If one wears two pairs of socks, **rubbing a bar of hand soap on the first pair at the high friction areas, before putting on the second pair of socks, can also help reduce friction.** If excessive sweating is a problem, the athlete may choose to use foot powder to help reduce moisture. This can be done with or without the use of lubricants.
4. Be sure to lace shoes snugly, but not tightly, from the bottom to the top.

TREATMENT OF BLISTERS

Once a blister has developed, the goals must be to minimize discomfort, speed healing, limit the development of new blisters, and avoid infection. Treatment of blisters should begin immediately upon the development of a "hot spot" on the foot.

Blister Treatment Suggestions

1. When the athlete first notices the "hot spot," **activity should be stopped immediately and the area should be iced for 10-15 minutes.**
2. After icing the spot, **apply skin lubricant and cover the area with a bandaid or gauze secured with tape.** In most cases the athlete will be able to return to participation with no, or little, discomfort.
3. **When the activity is over, the tape and gauze should be removed and the area should be iced again for 10-15 minutes.** Icing blisters 2-3 times a day will help promote healing and reduce the amount of fluid that accumulates.

4. **If the blister is filled with fluid, it should be drained. Blisters should be drained by cleaning the area with soap and water, or antiseptic, then using a sterile pin to puncture the blister.** When a great deal of fluid is present, or the blister is quite large, a health professional such as a certified athletic trainer, a nurse, a physician, etc. should be contacted to drain the blister. **In order to protect the caregiver and the athlete from possible infection, protective gloves should always be worn when draining blisters.**
5. Once a blister has been drained, **antibiotic ointment should be applied and the blister should be covered with a bandaid or gauze.**

IF THE FLAP OF SKIN COVERING A BLISTER IS INTACT, DO NOT REMOVE IT!

That skin remains the best protection for the blister. **If the flap of skin has been torn open, the loose flap should carefully removed with a small scissors.** Antibiotic ointment should then be applied to the blister and it can be covered with a bandaid or gauze pad. It can then be covered with felt or other soft padding to help protect the area. **A “donut pad” made from felt or foam rubber can be secured to the area with the hole directly over the blister.** This may make the athlete more comfortable while walking or exercising. Skin lubricant can be applied to the outside of the tape to further decrease friction. During non-activity periods, antibiotic ointment should be applied and the blister should be covered. This reduces the risk of infection and allows the blister to heal properly.

Questions and comments concerning warm up and stretching, or any other area dealing with athlete wellness, are welcomed and encouraged. They should be addressed to Alan Beste, Administrative Assistant, Iowa High School Athletic Association, PO Box 10, Boone, IA 50036. (515) 432-2011.

SOURCES: American Academy of Orthopaedic Surgeons, Athletic Training and Sports Medicine, 444 North Michigan Avenue, Suite 1500, Chicago, IL, 1984; Arnheim, Daniel, ATC. Modern Principles of Athletic Training, Times Mirror/Mosby Publishing, St.Louis, 1989; Benda, Chuck. “Stepping into the Right Sock,” The Physician and Sports Medicine, Volume 19, Number 12, December 1991; Bergeron, Bryan, MD. “A Guide to Blister Management,” The Physician and Sports Medicine, Volume 23, Number 2, February 1995; Cushman, Deborah. “Tips ofr Happy Feet,” The Des Moines Register; Flegel, Melinda, ATC. Sport First Aid, Human Kinetics, Champaign, IL, 1997; Ramsey, Michael, MD. “Managing Friction Blisters of the Feet,” The Physician and Sports Medicine, Volume 20, Number 1, January 1992; Rice, Greg, ATC. “How to Prevent and Battle Those Bothersome Blisters,” Drug-Free Athlete Sports and Fitness, July 1992.