

## **FREQUENCY OF FRICTION BLISTERS IN MALE AND FEMALE ATHLETES**

*(Research note)*

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### **Abstract**

*The aim of this study was to determine the frequency of friction blisters in male and female athletes practicing outdoors in spring and summer. One of the most common injuries experienced by student-athletes is friction blisters on their feet. Friction blisters are caused by friction between the foot and/or toes and one's shoe. Hydrostatic pressure causes the area of the separation to fill with a fluid that is similar in composition to plasma but has a lower protein level. Materials and Methods: The subjects were 100 (50 men and 50 women) athletes aged 18 to 25 years. All tested athletes have trained outdoors. The diagnosis was made based on the clinical picture and history. Results: Friction blisters on feet was diagnosed in 21 men and 18 women. Conclusion: Friction blisters on feet was diagnosed in 42% of men and 36% of women. While blisters may not seem serious, they can certainly result in lost practice time or poor quality practice due to pain. Many athletes believe blisters are an unavoidable part of participation in sports. Foot blisters may be the most common sports injury. The prevention of blisters, in most cases, can be accomplished with careful attention to shoes. Shoes Athletes must wear shoes that properly fit their feet and are designed for their sport.*

**Keywords:** *athletes, training, percentage, shoes athletes*

### **INTRODUCTION**

The aim of this study was to determine the frequency of friction blisters in male and female athletes practicing outdoors in spring and summer. One of the most common injuries experienced by student-athletes is friction blisters on their feet.

Blisters occur frequently, especially in athletes (Akers, 1985; Hoeffler, 1975; Kaufman, Brodine, & Shaffer, 2000; (Knapik, Hamlett, Thompson & Jones, 1996); Knapik & Reynolds, 1999; Mailler & Adams, 2004).

Hydrostatic pressure causes the area of the separation to fill with a fluid that is similar in composition to plasma but has a lower protein level. About 6 hours after formation of the blister, cells in the blister base begin to take amino acids and nucleosides; at 24 hours, there is high mitotic activity in the basal cells; at 48 and 120 hours, new stratum granulosum and stratum corneum, respectively, can be seen. The magnitude of frictional forces and the number of times that an object cycles across the skin determine the probability of blister development - the higher the frictional forces, the fewer the cycles necessary to produce a blister. In summary, blisters appear to be caused by repeated frictional forces that result in a cleft at the level of the stratum spinosum due to mechanical fatigue; the cleft fills with a serum-like fluid due to hydrostatic pressure. The probability of blister formation increases with high frictional forces,

more shear cycles, high external loading and moisture (Knapik, Reynolds, Duplantis & Jones, 1995).

Friction blisters tend to occur in areas of thick adherent stratum corneum (eg, palms, soles, heels, dorsa of fingers). In regions of the body where the stratum corneum is thinner, a repeated friction force causes the stratum corneum to erode, and instead of a blister, an erosion or abrasion occurs. The likelihood of forming a friction blister at susceptible sites is based on the magnitude of the frictional force and the number of times an object moves across the skin (ie, shear cycles). Moisture and lubricating substances present on the skin surface are additional factors. With a greater frictional force, fewer cycles of rubbing against the skin are needed to produce a blister. Moisture on the skin surface may either increase the friction force or, in the case of very moist skin, decrease it temporarily by providing lubrication. Lubricating agents also tend to reduce the friction force temporarily at the onset; however, friction tends to increase with prolonged application of the external force (Schwartz, Chima, & Lambert, 2014).

### **METHODS**

This prospective, randomized study was undertaken during open in the spring and summer. All tested athletes have trained outdoors. The subjects were 100 (50 men and 50 women) athletes aged 18 to 25 years. The diag-

nosis was made based on the clinical picture and history.

## CONCLUSION

Foot blisters may be the most common sports injury. The incidence of blisters in marathon runners is 0.2% to 39% (Mailler & Adams, 2004)

By identifying those factors that most influence blister formation, an athlete may reduce the risk by avoiding them or preparing for them. Common factors include moist damp feet, foot temperature greater than 40° C, emollients like petroleum jelly after an hour of exercise, tobacco use, heavier pack loads, and lack of an ability to train in a shoe (Brennan, Jackson, Olsen, & Wilson, 2012).

Many sports allow you to do workouts outdoors in spring and summer, but if you wear comfortable shoes risk of blistering. Foot blisters may be the most common sports injury.

Fiction blisters on feet was diagnosed in 42% of men and 36% of women. While blisters may not seem serious, they can certainly result in lost practice time or poor quality practice due to pain. Many athletes believe blisters are an unavoidable part of participation in sports. Foot blisters may be the most common sports injury. The prevention of blisters, in most cases, can be accomplished with careful attention to shoes. Shoes Athletes

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