

FOOT CARE BASICS FOR HIKERS

BY JOHN VONHOF, AUTHOR OF FIXING YOUR FEET: PREVENTION AND TREATMENT FOR ATHLETES

John Q. Hiker knows the feeling, it has happened over and over. This past weekend on an overnighiter in preparation for next month's weeklong backpack, he felt the burn as a hot spot turned into a blister- another one-and on top of the one from the week before. John has had so many blisters he stopped counting. He has also lost count of the blister prevention remedies and blister fixes he has tried¾ all shared by fellow backpackers or recommended in his stacks of books and magazines.

Like John Q. Hiker, most of us know first-hand the agony of blisters. Just one can ruin an otherwise good day, whether on a short one-day outing or during a long multi-day hike. The blister may be on your heel, the ball of your foot, between the toes, or on the tip of a toe. No matter where, blisters have the ability to reduce a fast hiker to a slow hiker, a slow one to a shuffler, and a shuffler to a walker. There are basics of foot care for hikers and methods to prevent and treat blisters that are easily learned.

You need to recognize that you and you alone need to find what will work on your feet. That goes for what you put on your feet and how you treat blisters. Others can give suggestions, but what works for them may not work for you. Much of your training should be done in your hiking gear, with the shoes or boots, and socks you will use, and with the packs and other gear in the approximate weight you will carry. This avoids subjecting your feet to new stresses on when you start out on your long awaited trip.

Blisters are very predictable. Take four elements: moisture, friction, heat and cold, common in any mix to your feet when you hike, and the likelihood of a blister appearing is high. The longer these elements exist on the feet, unattended to, the greater the risk.

So, what can we do to reduce one or more of these elements? Before one can solve the dilemma, one needs to understand the problem. Adventure racing doctor Billy Trolan MD, in his Outdoor Research (OR) Blister Fighter's Manual defines our skin and blisters as follows, —Our skin is designed to protect the rest of our body against temperature extremes and infections. Divided into two layers, the epidermis (outer) and the dermis (inner) constitute the main parts of the skin. Between the two is the Basement Membrane Zone or BMZ, which acts as the glue that holds the two layers together. Blisters form when the "glue" that holds the layers of skin together breaks down. A space forms between these layers, which fills with fluid.

The glue zone is like two-ply tissue paper and the most common area of blister formation. Trolan identifies four primary causes of blister formation. Understanding these four elements that cause blisters, whether independently or in combination, is key to preventing and eliminating blisters. Most hikes are fairly straightforward and failure to heed common sense advice can cost you dearly.

The First Line of Blister Defense

Proper socks are next. Moisture-wicking socks are available from almost every sock manufacturer, and given a choice, should always be picked before an all-cotton sock. Two pair of socks or double-layer socks offer an inner layer that moves against the outer layer, reducing friction to the skin. Try several different types of socks of various weights and fabrics.

Lubricants are next on the list. Most hikers grew up using a lubricant, usually the age-old standby, Vaseline. Another favorite is Bag Balm, a salve with healing properties. Newer, state-of-the-art lubricants may contain silicone, pain-relieving benzocaine, or antifriction polymers. The trick with lubricants is to reapply them frequently, being sure to clean off the old layer before another application. Remember that lubricants and grit don't mix. The grit will quickly become an irritant, then a hot spot, and finally a blister. If your skin becomes too tender from the softening effects of the lubricant, then powders may be better for your feet.

Powders can help reduce friction by absorbing moisture. This reduces friction between the feet and the socks. Dry skin is more resistant to blister formation than skin that has been softened by moisture. Beware of powders that cake up and cause blisters. A good powder, like Zeasorb, will absorb many times its weight in moisture. Simple and readily available cornstarch also works.

The Second Line of Blister Defense

The second line of defense includes a variety of options. Proper footwear, skin tougheners, taping, frequent sock and shoe changes, proper hydration, correct lacing techniques, and gaiters all contribute to the prevention of blisters. Some of these options may be more important for your feet than others. Well-broken in footwear is important. Good outer soles for traction, enough room in the toe box, a good heel counter that grips your heel, and quality insoles all contribute to comfortable feet. Get them fit at a good store and break them in well. Wear them until you know they are the right ones for your feet.

Skin tougheners work three ways. They coat the feet for protection, toughen the skin, and if using tape, help the tape or blister patches adhere better to the skin. Tincture of benzoin is commonly used, however if it gets into a cut or open blister, it will be momentarily painful. It is important to recognize that one's feet are also toughened as they are conditioned to the stresses and distances of hiking through proper training. Another way to toughen the skin is to go barefoot, even running barefoot, in gradual stages to toughen one's outer layer of skin.

Taping provides a barrier between the skin and socks to reduce friction. There are specific methods of taping toes, the balls of the feet, heels, the bottoms of the feet, between toes, and even the whole foot. Duct tape is commonly used, but Johnson & Johnson's Elastikon tape works well and is porous. Making the tape stick involves cleaning the feet well, using a tape adherent, and rounding corners of the tape. Frequent sock changes will help keep the feet in good condition. Wet or moist shoes and socks, from water or constant sweating, can cause problems over time as the skin softens, maceration occurs, and skin layers separate. Changing

the socks also gives opportunity to reapply either powder or lubricant and deal with any hot spots before they become blisters.

Maintaining proper hydration helps reduce swelling of the feet, often common after hours of running, so the occurrence of hot spots and blisters is reduced. When you become fluid and electrolyte deficient the skin loses its normal levels of water in the skin and easily rubs or folds over on itself which leads to blisters.

Adjusting your shoelaces can relieve friction and pressure over the instep and make footwear more comfortable. Shoes that are too tight in the toe box or too loose in the heel can be adjusted by using different lacing techniques. Several alternatives to shoe laces are commonly found in running stores. These include thin elastic laces or laces with an interlocking lock. Hikers should consider wearing gaiters to provide protection against sand, dirt, rocks, and grit. These irritants cause friction and blisters as shoes and socks become dirty. The gaiter's typical weak point is the strap under the shoe's arch. Plan ahead for equipment failure by finding alternate ways of attaching gaiters to your feet or by carrying an extra strap.

Additional tips include elevating your feet above the level of your heart when resting to reduce swelling, and taking off your shoes and socks to air your feet whenever possible.

Being Proactive or Reactive

Every hiker, from the first-timer to the experienced, must make the choice to be either reactive or proactive in managing blisters. Being reactive means taping hot spots and fixing blisters when they develop. It means making fixes under less than ideal conditions, with less than adequate materials and in a manner that does not work for your particular foot problem.

Being proactive, on the other hand, means discovering before a trip, what works for your feet and knowing how to treat any potential problems before they develop. This means knowing what resources are available to use and trying out blister fixes before the hike. It can also include pre-hike taping of your feet where hot spots and blisters typically develop. Being proactive means doing your homework.

It is essential to have shoes that fit properly, are broken in, and are appropriate for the terrain and weather you will encounter. Find the best socks for your feet, preferably that wick moisture away from the skin. Some racers like single-layer socks, others like double-layer, and still others use a two-sock combination.

Preventing hot spots and blisters requires knowledge of what is best for your feet. Some feet respond well to lubricants while others are best when powders keep them dry. Others require taping to protect hot spots and blister prone areas. There are several types of tape to use on the feet and there are several combinations of products that make the feet more resistant to blisters. All of these must be tried before a hike.