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Backcountry Health and Hygiene

Ankle Sprains: The Hiker's Achilles Heel

In 1992, a group of wilderness medicine devotees at Stanford, led by Dr. Gentile, undertook a study looking at the major types of injuries disabling backpackers. As data for the study, they mined the voluminous records of the National Outdoor Leadership School (NOLS). In this, the largest survey of health problems involving wilderness pursuits, a single injury accounted for three-quarters of medical evacuations: the common ankle sprain.

In the vast majority of situations, ankle sprains are medically trivial injuries, most of which do not even result in a physician visit. Indeed, I suspect that most readers have sprained an ankle on one or more occasions. However, a serious ankle sprain may make weight-bearing temporarily very painful, if not impossible. While one can rather easily hobble off the tennis court or track, getting from Ouluska Pass to the parking lot may be another story.

The damage in an ankle sprain is most often to one of two sets of ligaments that help attach the foot to the lower leg. Both of these begin just below the bony prominences on either side of the ankle (the "malleoli"), and fan downward to attach to bones in the foot. Over 90% of sprains are to the ligaments on the *outside* of the ankle. Among hikers, ankle sprains most often result from sudden *inward* twists from a slip on the trail. Wet rocks, roots and blowdown are common triggers of these injuries. Fatigue, darkness, uncontrolled running, poorly balanced loads and low footwear each contribute to the problem.

Field recognition of an ankle sprain is not difficult. A twisting force is immediately followed by pain below the malleolus, usually accompanied by rapidly developing swelling. While some fractures can be confused with ankle sprains, especially in children, the distinction in the field is moot, as the first aid is the same.

In the home setting, first aid for ankle sprains is summarized by the acronym "RICE": **r**est, **i**ce, **c**ompression, **e**levation. On the trail, however, some modifications are in order. Rest may not be an option miles from the road, and ice is rarely available (instant "cold packs" are worthless for these injuries).

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In fact, the first thing to consider when a suspected ankle sprain occurs on the trail is *doing nothing.* Removing a heavy hiking boot to "check" the ankle right after injury may be a mistake. Some sprains can swell enormously in the minutes to hours after injury, and the hiker may well find himself unable to get the shoe back on. This could convert what began as a bad day to an absolutely awful one! If a suitable campsite is a ways from the place of injury, it may be best to leave the boot tightly in place, easing oneself to the site with benefit of a walking stick or companion's shoulder.

Once at a suitable campsite, modified first aid can begin. At this point, the hiking boot can be removed, and the injury examined. Cold Adirondack streams are often a useful surrogate for ice; submerging the foot as long as the cold can be tolerated is a reasonable approach.

While it is not submerged in water, compression of the ankle with an elastic wrap (Ace® bandage) is done. Remember that the elastic wrap is not designed to stabilize or immobilize the ankle, but rather to provide firm, uniform compression, preventing or reducing swelling. Elevating the injured leg on a pack while resting and at night complete the field treatment. In most cases, after 24 hours of this therapy one can make it to the trailhead, albeit not gracefully.

Are there circumstances in which one should seek help, requesting assisted evacuation because of a sprain? My usual answer, in tune with my typical low tolerance for whining, is "hardly ever." The distances and trails in the Adirondacks are rarely such that a sprained ankle sufferer cannot handle them after a day or two of field treatment. It may necessitate a change in plans or even a delayed end of a trip, but I look upon these as part of the risks we assume anytime we step into the wilderness. Evacuations can be hazardous, both to the participants and to the environment, and should never be undertaken lightly.

An obvious exception to this is the hiker whose ankle sprain was triggered by another problem. An intercurrent illness, heat exhaustion or early hypothermia may increase susceptibility to foot instability. Obviously, it would be unsafe for such an individual to attempt walking with an already-injured ankle. In such circumstances, assisted evacuation is clearly preferable.

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