

Achilles' Ankle

By Tom Welch, M.D.

IN DECADES OF RUNNING, hiking, and climbing, I have had only one ankle sprain. I was running on a dark road at night (pretty dumb!), when my right foot stepped into a rut on the shoulder and I lost my footing. Within a minute, the ankle was painful, swollen, and unable to bear weight. Fortunately, I was a short distance from home. I treated it with BRICE ("RICE"—see below—plus a beer),

located some crutches, and became the butt of jokes at work for the weeks it took to heal. I have not had any subsequent problems.

If this same injury had occurred in the backcountry, the outcome would have been very different. I probably would not have been able to get to a trailhead, unless I stayed put for several days until the pain and swelling improved. I likely would have needed assisted evacuation. I might have even wound up in this magazine's "Accident Report"!

My experience illustrates why I teach ankle sprains as the defining injury of "wilderness medicine." This single injury is responsible for about three-quarters of wilderness medical evacuations—vastly more than any other problem. Yet, the basic medical management of the problem is known by any 11-year-old Scout with a First Aid Merit Badge. As with most "wilderness medicine," ankle sprains are a very straightforward issue that become a problem only because of remoteness. The competencies for handling them are not medical; they involve general wilderness skills, judgement, navigation, and so on.

The mechanics of ankle sprains are relatively simple. The two bony "bumps" on our ankles are the *malleoli*: *lateral malleolus* on the outside and *medial malleolus* on the inside. Strong ligaments extend from each malleolus downward to the other bones of the foot. These structures keep the ankle stable. A twisting motion can strain or even tear one of these ligaments, creating a sprain. Since such twisting almost always occurs with the foot

turning inward, lateral (outside) ankle sprains are the most common. The ankle is swollen, often bruised from damage to blood vessels, and unstable. Tenderness is virtually always *below* the malleoli, distinguishing the ankle sprain from other injuries such as lower leg fractures.

In the front country, treatment is straightforward RICE: Rest (stay off the ankle); Ice (as much as one can tolerate); Compression (an elastic wrap, not to "stabilize" the joint but to lessen swelling); Elevation. These require modification in the backcountry, mostly because of the lack of ice. Commercial cold packs are of little value on treks. Elastic wraps, however, are essential in trekking first aid kits.

The big question with wilderness ankle sprains is getting out. There is no simple formula; decisions need to be based on severity, terrain, available help, weather, and the overall health of the patient. An easy walk out with trekking poles might work for a mild sprain in a healthy person, with a flat trail in nice weather. With sufficient help, the two-person assisted walk (one helper on each side) is very efficient in this setting. Keep in mind that there is quite a difference between doing this in a church basement during a first aid class and attempting it on a rugged trail; it is a physically difficult technique for all involved. Particularly challenging terrains and a very painful ankle may necessitate a more dramatic evacuation, even including a litter. Helicopter evacuations for ankle sprains in very challenging environments are not unheard of.

There are few evidence-based rec-

ommendations for preventing ankle sprains. Certain obvious hiking maneuvers (e.g., rock-hopping for a stream crossing) should be avoided, but my experience as a trek leader has been that most ankle sprains occur in fairly "conventional" walking. For many years, I taught my wilderness education students that conventional high-top hiking boots had superior ankle protection and were therefore safer. As I discussed in an earlier essay on barefoot hiking, that teaching was probably incorrect. I have now ditched my high-top mountaineering boots except for the most challenging environments, and use lightweight low-profile boots for most hiking.

Minimizing pack weight can help prevent the instability which often predisposes to ankle injuries. There is some evidence that strengthening the muscles of the lower leg may help prevent foot inversion injuries. This is also important during the period of rehabilitation after sprains. A good physical therapist can help with this, and a number of exercises can be found at www.verywellhealth.com/ankle-exercises-a-complete-guide-2696480. Individuals who are prone to ankle sprains may wish to discuss the technique of ankle taping with a therapist.

Most of us take to the woods to enjoy remoteness. Unfortunately, such remoteness can also turn a rather straightforward injury into a major nightmare. ▲

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