

Preventing Injuries and Illnesses in the Wilderness

David Angert, BS^a, Eric A. Schaff, MD^{b,*}

KEYWORDS

- Wilderness • Injury • Travel • Review
- Adolescents • Prevention

Getting away for the weekend, summer wilderness trips, and organized outdoor outings are becoming increasingly popular. These outings provide a way to decompress from the stresses of routine family life, school, and work while enjoying the benefits of exercise and experiencing the beauty of nature. It allows families, friends, and peer groups to spend time together, often in challenging and educational settings. The wilderness also can be fraught with dangers under the best of circumstances. Trouble is foreseeable when teenagers are placed in this setting who have the drive to explore and test their limits while pushing their physical capabilities at a developmental time when they are both impulsive and have a sense of invulnerability.

Some of the concerns for the practitioner to consider include potential injuries and illnesses that occur during various wilderness experiences and the frequency with which they occur, as well as the age, gender, medical or psychological conditions that place youth at greater risk. This article focuses on common injuries and illnesses as well as dangerous scenarios encountered in the outdoors. The authors emphasize the need for greater understanding, education, and preventive measures regarding youth trips into the wilderness.

EPIDEMIOLOGY

The 2000 National Survey on Recreation and the Environment surveyed over 57,000 individuals who were 16 years of age or older across the United States.¹ It found that 97% of Americans had participated in outdoor recreation activities in the past year. Hiking, backpacking, and developed (family or group campgrounds) camping

^a Department of Physiology, Cardiovascular Research Center, Temple University School of Medicine, Medical Education and Research Building, 3500 North Broad Street, 10th Floor, Philadelphia, PA 19140, USA

^b Department of Pediatrics, Temple University School of Medicine, Kresge Building West, Room 222, 3440 North Broad Street, Philadelphia, PA 19140, USA

* Corresponding author.

E-mail address: eric.schaff@tuhs.temple.edu

experiences had increased significantly, with an estimated 72 million people hiking in 2002 and 24 million backpackers spending an average of 17 days per year in the woods.

There are limited data about the morbidity and mortality associated with such activities. Most data in the United States comes from the National Parks Services, organized outfitters such as the National Outdoor Leadership School (NOLS), and surveys of hikers on major trails. Because research on wilderness injuries is limited to descriptive studies, determining accurate injury rates are difficult.² The literature is also limited in children and teens. Many of the studies in adults are consistent, however, and some data can be extrapolated to youth.

In a 1987 to 1988 study of 224 hikers who successfully hiked the entire 2100-mile Appalachian Trail,³ 82% responded to a 3-page survey regarding their experience. Eighty-two percent of the respondents reported an injury or illness, with the most common injuries being extremity or joint related. The loss of at least one day of hiking from an illness or injury occurred in 52% of hikers, diarrhea in 63% (only 7% drank exclusively from protected water), and foot blisters in 7%. Hypothermia or frostbite was reported in four hikers, hospitalization in three hikers, and one hiker reported being struck by lightning. The most frequent allergic reaction was caused by insect bites.

Ten years later, in a 1997 prospective study of 334 hikers on the Appalachian Trail who had planned to hike at least 7 days or longer, complete data were obtained from 280 respondents.⁴ The most common medical complaints included feet blisters in 180 (64%), diarrhea in 156 (56%), skin irritation in 143 (51%), acute joint pain in 102 (36%), sunburn in 72 (26%), tick bites in 68 (24%), dehydration in 55 (20%), heat exhaustion in 13 (5%), and hypothermia in 13 (5%) of the participants. The risk of diarrhea was significantly greater in those who reported that they frequently drank untreated water from the streams or ponds (odds ratio [OR] = 7.7; 95% confidence interval [CI]: 2.7 to 23; $P < .0001$). In contrast, routine washing of cooking utensils and hands after bowel movements was associated with a significantly decreased risk of diarrhea (OR = 0.46; 95% CI: 0.22 to 0.97; $P = .04$). Eighty-eight hikers (31%) did not complete the hike as expected, with reported reasons of injury, time limitations, and psychosocial problems.

In the NOLS study (1999 to 2002), involving 1679 students and 233 staff, 678 injuries were reported, of which 50% were from sprains and strains of knees, ankles, and back (most commonly caused by falls, slips, and overuse factors). Thirty-one percent were from soft tissue injuries including burns, blisters, wound infections, and stings. There were 549 illnesses reported, of which 26% were gastrointestinal and 17% were respiratory.⁵

In a 2-year US National Parks study, children and adolescents (≤ 19 years of age) accounted for 13% of the 356 deaths.⁶ Adolescents made up 23% of search-and-rescue operations in Alaska's National Park Service units that resulted in a death.⁷ In a study of the California-based National Parks Service, children and adolescents suffered disproportionately more with hypothermia, diarrhea, and noninsect anaphylaxis.⁸ In a 5-year study in five contiguous counties in western Washington State, there were 40 wilderness recreational deaths among children and adolescents aged 12 months to 19 years, of which 34 occurred in teens 13 to 19 years of age.⁹ Most deaths were associated with hiking, swimming, and river rafting, with the youngest children experiencing drowning and closed head injury as the most frequent cause of death. In 27 of the 40 deaths, youth were lacking in basic preparedness including inadequate clothing layers and the absence of life vests. In another study of wilderness injuries in Mount Rainier and Olympic National Parks in Washington State over a 5-year period,

Download English Version:

<https://daneshyari.com/en/article/4174649>

Download Persian Version:

<https://daneshyari.com/article/4174649>

[Daneshyari.com](https://daneshyari.com)