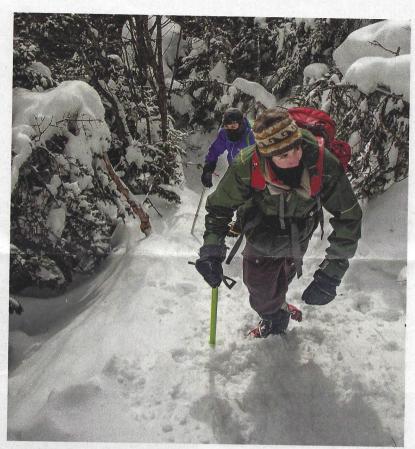
# **Biting Cold**

How to recognize and treat frostnip, preventing the more serious condition of frostbite.



## **EMERGENCY SITUATION:**

While hiking in Utah's beautiful and famously snowy Wasatch Mountains, you accidentally step in a snow-covered stream. The water isn't deep, but it is cold. Very, very cold. Forced to hike out with wet feet, after half an hour you begin to feel tingling in your toes. The tingling becomes sharp needles of pain. After an hour, you feel nothing: Your toes are numb. This isn't an improvement; it's the beginning of frostbite. What should you do?

## **Solution: Frostnip**

When flesh is exposed too long to low temperatures, water molecules in skin cells can freeze. This is called frostbite. A serious medical condition, frostbite is brought on by a combination of very cold temperatures and skin exposure — exacerbated by wind chill. In very cold (sub-zero) temperatures with wind, exposed skin can freeze in 30 minutes or less.

In this instance, the hiker is beginning to experience frostnip, the precursor to frostbite. This condition is treatable in the field, while the more serious frostbite is not. One indication of frostnip, along with numbness, is the formation of ice crystals on the skin. It typically affects the extremities — toes, fingers, ears, nose and lips. Frostnip is surface freezing without cellular damage.

To treat frostnip, move into a tent or other shelter and warm the injured area and keep it warm. If an ear or cheek is frozen, warm the injury with the palm of your bare hand. Slip a frostnipped hand under your clothing and tuck it beneath an armpit. Treat frostnipped toes by putting the patient's bare feet against the warm skin of your belly.

If left untreated, frostnip can develop into the more severe condition, frostbite — potentially causing permanent injury. Frostbite is characterized by grayish-white patches on the skin. A frostbite victim might complain that his ears, nose, fingers or feet feel painful and then numb, but sometimes the person won't notice anything. Dehydration can increase the danger of frostbite.

### **Treating Frostbite**

Scouts, Venturers and leaders should not attempt to treat frostbite in the field. If you suspect the frostbite is deep (extending below the skin level), wrap the injured area in dry fleece clothing and get the patient under the care of a physician as soon as possible. Do not rub the injury.

In the event that a physician cannot be reached (for instance, if you are lost or stranded), trained wil-



derness first-aid experts first remove all wet clothing that is in contact with frostbitten skin. The frostbitten skin is then rewarmed by slowly immersing in warm water — a delicate and extremely painful process — but only if there is absolutely no danger of refreezing.

"Thawing and refreezing is particularly harmful," says Dr. Chris Davis, a physician in the Department of Emergency Medicine at the University of Colorado School of Medicine. "If a victim's feet are frozen and that person needs to walk out, it does no good to thaw the feet, introduce considerable pain and then put the victim at risk of refreezing the feet as he or she walks out."

As the injured skin warms, the area will become painful and might blister. Do not attempt to rewarm the skin using a flame or any other direct heat source.

### **Proceed With Caution**

Davis adds that any decision to thaw a frozen limb in the field should not be taken lightly (and should be led by a trained wilderness first-aid expert) — and that ibuprofen should be on hand to administer for pain, which may be severe.

After rewarming, medical experts apply a clean, dry, bulky dressing to the affected area: gauze, if available, or strips of cloth. Dressing can be applied as long as it does not interfere with movement or travel.

Hike to safety (carrying the victim if his or her feet are affected) and seek medical treatment immediately. Experts recommend treatment at a burn center within 24 hours. •









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