



## AAC Publications

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### **Essentials: Wound Management**

From Gobies to Serious Lacerations

**THOUGH OFTEN not reported due to their relatively minor nature, the most common injury for climbing and other outdoor pursuits is wounds such as abrasions, lacerations, and, to a lesser extent, puncture wounds.** Such injuries may come from leader falls, rockfall, attempts to self-arrest in snow, and, of course, hand jams. An understanding of wound care principles is useful for all climbers, whether dealing with a gobie after climbing a long splitter crack or stopping major bleeding after a fall.

#### **STOP THE BLEEDING**

While many injuries in the backcountry will not require this step, treatment of any major laceration or puncture wound is likely to start with direct pressure. To stop uncontrolled bleeding, place the cleanest material possible over the wound and apply pressure directly over the site with your hands for a minimum of five minutes. If possible, raise the injured area above the heart. Once the bleeding has stopped, create a pressure dressing over the wound (see below).

Many first-aid kits include hemostatic gauze or bandages (they can be purchased at outdoor retailers or pharmacies), and these can be very useful for profuse bleeding. If direct pressure is unable to stop severe bleeding, consider the use of a tourniquet and begin evacuation immediately.

#### **CLEAN THE WOUND**

This is likely the most important factor in wound care for long-term healing and prevention of infection. Irrigating the wound should be done as soon as possible, with the cleanest water available. If possible, use at least one liter of clean water and rinse the wound using pressurized flow. If a good first-aid kit is available, use a 30–60 ml syringe with an 18-gauge needle to create a spray of fluid. Field-expedient methods to apply irrigation include puncturing a corner of a clean plastic bag with a small safety pin, adding water, and squeezing the bag. (This can also be replicated by punching a small hole in a water bottle lid.) Squeezing a hydration bladder also can provide high-pressure irrigation, though the bite valve should be removed to prevent introduction of bacteria harbored in the valve.

After irrigating the wound, it may be necessary to physically remove debris from the area. Over the years, we have had a number of reports of objects impaled in climbers after falls, including ice axes, carabiners, and tree branches. If any of these items is near vital structures such as large arteries, body cavities, or the face, they should not be removed, but instead should be stabilized in place, and evacuation should begin immediately.

#### **BANDAGE TO PROTECT**

Bandaging protects a wound from further contamination and should be completed as soon as possible after irrigation. For simple wounds, use sterile gauze or the cleanest material available, such as a spare T-shirt or other extra clothing. If using a non-sterile bandage, apply antibiotic cream to the wound, as this will help prevent bacteria or other debris from coming into contact with damaged tissue.

Complex and high-risk wounds include those still open after eight hours, wounds from animal bites, puncture wounds, crush wounds with a large amount of damaged tissue, and deep wounds to the hands and feet. Care for these wounds requires you to stop the bleeding using direct pressure, copiously irrigate with potable water, dress and pack wounds with wet sterile dressings, cover the area with sterile or clean bandages, wrap the affected body part, and apply a pressure dressing if needed. Pressure dressings can be created by tightly wrapping the affected body part with whatever materials are available and tying a knot directly above the wound.

Only consider closing wounds in the backcountry, either with sutures or with Steri-Strips, if you have the required knowledge and materials; if so, monitor the wounds closely for infection.

## **EVACUATE IF NEEDED**

Generally speaking, simple abrasions do not require evacuation unless they are located on the bottoms of the feet, the palms, or the genitalia, or if an abrasion begins to show signs of severe infection. Any lacerations that involve tendons, ligaments, or nerves, or cause severe bleeding, should be evacuated immediately. Large lacerations and puncture wounds, especially deep ones, likely require evacuation, as these are difficult to clean and are highly susceptible to infection. Additionally, any animal bites or wounds that are grossly contaminated with organic matter should be evaluated quickly by a medical professional. Tetanus and/or rabies vaccinations may be needed.

## **PROTECT YOURSELF**

Anytime you treat an injured climber, be aware of the risk associated with exposure to blood and body fluids (e.g. HIV, hepatitis). Carry disposable gloves (nitrile or latex) in your first-aid kit to prevent coming into contact with these fluids, and always dispose of bloody bandages and gear in a sealable container. After treatment, wash your hands with soap and water (if they are visibly bloody) or use an alcohol-based sanitizer if no blood is visible.

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## Images



### WOUND CARE BASICS

STOP bleeding

IRRIGATE the wound

BANDAGE to protect

EVACUATE if needed

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