

Chapter 5

Health and Medical Care

5001. Hygiene

Enforcing cleanliness in the field, and particularly in the cold, is a difficult but important job that falls to the small-unit leader. It may be convenient for an individual to go for long periods without bathing. In order to maintain a unit's combat effectiveness, leaders must take every opportunity to keep their units clean. Inattention to personal hygiene can quickly deplete a unit's combat strength. The small unit leader should closely monitor the following:

- Face, hands, armpits, and crotch should be washed daily. If water is not available, take a snow bath by scrubbing with a snowball. If neither is available, exposing bare skin to sunlight for ½ to 2 hours a day will kill some bacteria. However, one must be careful not to receive sunburn.
- Personnel should shave regularly. Shave daily if water is available, every three days otherwise. Shaving just prior to sleeping gives the skin the maximum time to recover before going out into the cold. Small battery-powered electric razors remove a minimum of facial oils, and may be used.
- Teeth should be brushed twice daily and flossed at least once a day.
- Underwear should be changed at least twice a week.
- Hands and eating utensils should be cleaned prior to eating. A case of diarrhea in cold temperatures is an experience all Marines should be spared.

5002. Medical Problems

Small-unit leaders must be prepared to identify medical problems immediately in the CWE. Cold weather illnesses such as the common cold can easily be transmitted through the sharing of beverages or simply by breathing in the close-quarters environment of a tent-team. It is therefore incumbent upon leaders to monitor for symptoms and treat illnesses as soon as they appear. The most common cold weather injuries and illnesses are summarized below.

- a. **Hypothermia.** Simply stated, hypothermia is a lowering of the temperature of the body's inner core to less than 95F. This happens when the body loses heat faster than it can produce it. Leaders must recognize the symptoms of hypothermia and take immediate action toward its treatment.

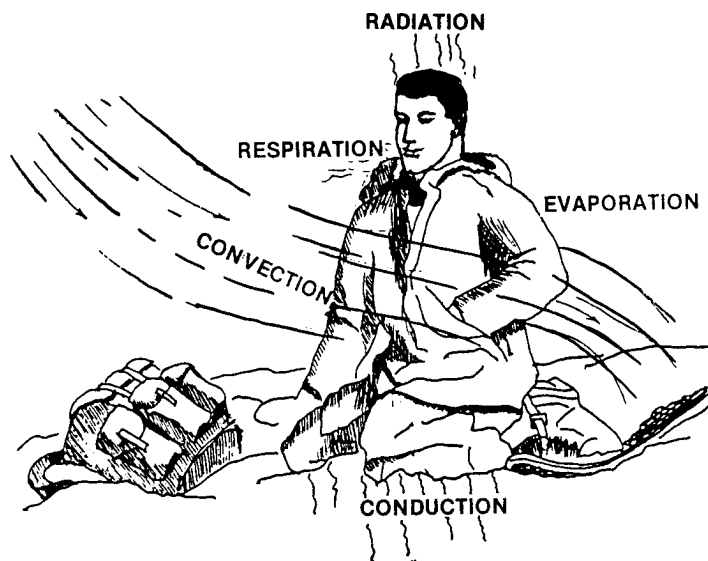


Figure 5-1. Mechanisms of Heat Loss From the Body.

(1) Prevention

- Stay physically fit.
- Keep active
- Keep uniform clean and dry
- Eat plenty and often
- Drink at least 6-8 quarts of water while performing hard work
- Get an appropriate amount of rest
- Be prepared for rapid changes in the weather
- Bivouac early before fatigue impairs judgement

(2) Symptoms

- The victim is shivering uncontrollably.
- The victim has difficulty speaking, is sluggish in thinking, or appears disoriented
- The victim has trouble walking or is poorly coordinated
- In later stages, shivering stops and is replaced by muscle stiffness or rigidity.

(3) Treatment

- Prevent any further heat loss.
- Remove the victim from the wind and into the best available shelter
- Replace wet clothing with dry. Place the victim in a prewarmed sleeping bag if one is available.
- Place as much insulation as possible between the victim and the ground.
- Add heat by the best available means to the victim's neck, groin and sides of chest.
- Heated water bottles should be insulated with clothing to prevent burns.
- If the victim is coordinated well enough to drink, give him warm fluids. If able to eat give candy or sweetened foods.
- If the victim is unconscious, he should remain on his back, with head tilted back to

help maintain an open airway.

- Do not massage the victim.
- Do not give alcohol to the victim; it may provide a temporary feeling of warmth, but will cause a further drop in core temperature.
- Get the victim to medical help as quickly as possible
- Victims with altered consciousness must be handled with care to prevent life threatening medical problems.

- b. Frostbite.** Frostbite is an injury in which tissues are frozen. It is almost always preventable. It seldom occurs in individuals who are not injured, dehydrated, malnourished, exhausted, or improperly clothed. The feet, hands and exposed facial areas such as eyes, ears and nose are the most vulnerable to frostbite, and should receive constant attention.

(1) Prevention

- Boots, socks, and gloves should not be tight.
- Personnel should be required to wear mittens instead of gloves in extreme cold.
- The buddy system should be used to check exposed areas, especially during wind.
- Require personnel to carry extra socks and mitten liners.
- Marines should not remain motionless for long periods of time.
- Use great caution when cold and wind are combined. (See fig. 1-1, Wind Chill chart)
- Check feet during halts on marches.
- Ensure Marines eat well and stay hydrated with hot drinks if possible.

(2) Symptoms

- The victim will have a painful feeling of coldness, followed by numbness.
- If an individual rewarms the part they will experience a burning, stinging or aching sensation.
- If the part is still cold it will usually be pale, whitish or bluish in color. If re-warmed, the part may be a variety of colors ranging from white, gray, blue, or red.
- The skin will be waxy in appearance and not glide freely over joints.
- Frostnip, which is an early, reversible precursor to frostbite may be similar in appearance to frostbite.

(3) Treatment

- For cases where frostbite is suspected, a fifteen-minute attempt at rewarming should be attempted. In cases of frostnip, the part returns to normal color and feeling and no further treatment is needed.
- The rewarming should be performed by placing the affected part against another person's stomach or underarms.
- If the affected part cannot be rewarmed within 15 minutes (i.e., capillary refill, feeling returns, toes and fingers move easily), the victim must be treated as a deep frostbite casualty.
- The patient must be MEDEVACED immediately.**
- No further field rewarming should be attempted; rewarming using dry heat may cause greater damage.
- If a frostbitten part does thaw while in the field, extreme care must be taken to ensure it does not refreeze.

- c. Dehydration.** Those who become dehydrated in the cold are headed for trouble. Even mild dehydration makes Marines more susceptible to other problems: frostbite, hypothermia, altitude illness, headache and constipation.

(1) Prevention

- The minimum daily fluid requirement for persons doing arduous physical activities in the cold is six quarts per day.
- By the time a person feels thirsty, he is already dehydrated. **Require Marines to drink water whenever they have the chance**, particularly during foot movement rest halts. Ensure canteens are full before any type of movement where resupply will be difficult.
- Do not allow personnel to drink coffee when water is scarce. Coffee contains substances which increase urine output, and can contribute to dehydration. Water should be the drink of choice.
- Squad leaders should designate a place for each tent team to urinate. The squad leader should monitor the color of the urine spots in the snow. Dark yellow to brown urine indicates dehydration. Individual tent team leaders should be held accountable for dehydration of their tent-mates.

(2) Symptoms

- Dark yellow or brown urine. Red urine indicates a severe condition requiring immediate medical attention.
- Headache.**
- Lack of appetite.
- Dry mouth, tongue, and throat.
- Upset stomach and vomiting.
- Constipation.

(3) Treatment

- Keep the victim warm.
- Give fluids by mouth if tolerated until the person has clear urine output.
- Refer to medical for IV fluids if the patient is unable to tolerate oral fluids.
- Rest.

- d. **Carbon Monoxide Poisoning.** Carbon monoxide (CO) is a deadly odorless gas given off by the burning of fuel.

(1) Prevention

- Ensure stoves and lanterns are functioning properly.
- Vehicles should not have exhaust leaks under passenger compartments.
- Ensure stoves and lanterns are used only in well ventilated areas.
- The tent door must be open while stoves are in use inside the tent.
- Stoves should not be used in snow caves.
- Do not allow personnel to warm themselves by engine exhaust.

(2) Symptoms

- Early symptoms include headache, dizziness, confusion or odd behavior.
- As CO poisoning progresses, the person's lips and skin will take on a bright red color.
- The victim may become drowsy and collapse without warning.
- If personnel are found unconscious in an enclosed shelter, suspect CO poisoning.

(3) Treatment

- Move the victim to open air.

- Keep the victim still and warm.
- Administer mouth-to-mouth resuscitation if victim is not breathing.
- Administer CPR if patient is without a pulse.
- If patient has altered consciousness, MEDEVAC as soon as possible.

e. **Snow Blindness.** Snow blindness is sunburn of the eye by ultraviolet radiation. The risk of snow blindness is greater on a cloudy day than on a clear day because ultraviolet radiation penetrates the clouds and brightness is not apparent as a warning.

(1) Prevention.

- Require personnel to wear approved sunglasses. If they do not have sunglasses they can construct field expedient sunglasses from cardboard.

(2) Symptoms

- Eyes have a burning, gritty, or painful sensation.
- The person can not tolerate to look at bright light.
- Sight becomes blurred, tears flow from the eyes.
- Headaches.

(3) Treatment

- Rest in darkness.
- Antibiotic ointment designed for use in the eyes.
- Cool compresses.
- The injury should be referred for medical attention, but will usually heal in 2-4 days.

f. **Sunburn.** Sunburn occurs quickly in a snow covered, high altitude environment. People must deal with the sun's direct rays, as well as those reflected off the snow. At high altitude there is less of the earth's protective atmosphere to filter harmful ultraviolet radiation.

(1) Prevention

- Wear a cover when possible.
- Require personnel to wear sunscreen and chapstick with sunscreen protection.

(2) Symptoms

- Redness of skin.
- Prolonged exposure may cause pain, swelling and blistering.
- In severe cases, chills, fever, and headache may develop.

(3) Treatment

- Prevent further exposure of the affected skin to sunlight.
- Motrin or Ibuprofen 400mg twice a day will help reduce the inflammation
- Apply aloe vera cream 2-3 times daily to the affected skin if available
- Refer severe cases for further medical attention.

g. **Tent Eye.** Tent eye is caused by fumes from stoves or lanterns used in a poorly ventilated shelter. It is an irritation of the eye's cornea. It may be prevented by using properly functioning stoves and lanterns in only well ventilated shelters. The treatment is fresh air.

- h. Trench/ Immersion Foot.** Trench foot (also known as immersion foot) is an injury caused by prolonged exposure of the skin to wetness. Such conditions are common when vapor barrier boots are worn. This injury may be very painful and may adversely affect combat readiness.

(1) Prevention

- Ensure personnel have extra, dry socks available.
- Remove wet socks, dry feet, and put dry socks on at least twice each day.
- Pay special attention to feet while wearing vapor barrier boots.

(2) Symptoms

- Early symptoms include wrinkling of the skin, redness, and a numb or painful sensation.
- Symptoms may progress to include swelling, extreme pain, blisters, a mottled red and white appearance.

(3) Treatment

- In early stages; keep the feet clean, dry, elevated, and exposed to air.
- In later stages, MEDEVAC.

- i. Constipation.** At very cold temperatures, personnel tend to postpone bowel movements, leading to constipation. Dehydration will also contribute to constipation.

(1) Prevention

- Ensure that a head is designated in the bivouac area where it is accessible to all troops.
- The head should be sheltered from wind and snow.
- Ensure that Marines eat regularly and drink an adequate amount of water.
- Ensure men stay on their regular bowel movement schedule.

(2) Symptoms

- Lack of regular bowel movements.
- Stomach pain, cramping, or a bloated sensation.

(3) Treatment

- Prevention is the best medicine.
- Increase fiber and water intake.
- If symptoms persist, get medical help.

- j. Heat injuries.** Even in cold environment heat injuries may cause significant casualties, especially if personnel are not educated about the risk. Individuals unfamiliar with cold environments often overdress, especially during periods of physical activity.

(1) Prevention

- Personnel should be instructed to dress so as to remain “comfortably cool” and avoid sweating.
- Personnel should dress in layers, and be given breaks to remove extra clothing during periods of exertion.
- Ensure proper hydration of your men.

(2) Symptoms

- The individual's skin will be flushed and they may be perspiring.
- They may become dizzy, lightheaded, or nauseated.
- In later stages the individual may become confused, uncoordinated, and may even pass out.

(3) Treatment

- If they passed out, or became confused they need immediate medical attention.
- Rest, if they are feeling dizzy it may be helpful to lay them down with their legs elevated above head level.
- Hydration.
- Replace wet clothing with dry. A heat casualty may quickly become a hypothermia casualty in a cold environment.
- Do not** rub snow on the person.

k. High Altitude Illness. There are several illnesses that may result from rapid exposure of individuals to high altitude that exists in many mountainous areas of operation. As a Marine moves to higher altitude there is less oxygen in each breath he inhales. The body must undergo a complex acclimatization process to prevent illnesses ranging from minor to life threatening. Altitude illness is rare below 7,000ft. Medical doctors and corpsman must be prepared for these contingencies; oftentimes, the best treatment is to descend.

(1) Prevention

- For personnel coming from low altitude begin operations at an altitude no higher than 7,000ft if the mission permits.
- Between elevations of 7,000ft and 14,000ft ascend at a rate not greater than 2,500ft per day.
- At elevations higher than 14,000ft ascend at a rate not greater than 1,000ft per day.
- There are medications (diamox) which may be useful in preventing altitude illness in the situation of a forced ascent.
- Avoid alcohol, it interferes with the acclimatization process
- Maintain proper water intake which assists in acclimatization.

(2) Symptoms (In the setting of high altitude)

- Early: headache, nausea, vomiting, difficult sleeping
- Later: Confusion, personality changes, stumbling gait, shortness of breath at rest, and cough productive of pink sputum. If one or more of these symptoms are present, it may signify a life threatening illness, which requires immediate medical attention.
- Serious high altitude illness is rare below 12,000ft.

(3) Treatment

- For mild symptoms: rest, hydration, restrict tobacco use, Tylenol for headache and refer to medical for evaluation of more serious conditions
- For later symptoms: descent of 2,500 ft may be life saving; victims also need immediate medical attention.

l. Battle Wounds. In cold weather, casualties should be given first aid treatment, protection from the cold and evacuation to an aid station without delay. Casualties should be insulated as best possible by placing them in a sleeping bag or other available insulating material. The patient should be monitored closely for shock and continued bleeding.

Wounds open to the weather may freeze quickly. Wounds that do become frostbitten heal poorly. The body loses heat in the area around the wound as blood soaks the skin and clothing. Blood loss

and immobility will increase the risk of hypothermia. Therefore, early first aid treatment becomes even more important at low temperatures.

m. Shock. Shock is caused by a reduction in the effective circulating blood volume. Shock is usually due to blood loss from wounds, but may also be a response to severe pain.

(1) Symptoms

- Rapid, faint pulse
- Apprehension
- Cool, clammy skin
- Pallor
- Lightheadedness
- Thirst

(2) Treatment

- Tourniquets should be used to lessen severe bleeding. Place the tourniquet as close to the wound as possible. Loosen the tourniquet every 5-10 minutes to see if the bleeding has subsided enough that a pressure bandage may be used instead.
- Pain can be greatly reduced with proper positioning, good bandaging, and splinting.
- Position the stretcher so that the casualty's head and chest are lower than his legs and abdomen. A six to twelve inch difference in height is best.
- Keep the casualty warm; his inactivity and blood loss will predispose the victim to hypothermia.
- Do not move the casualty any more than necessary. This does not mean movement over distance, but rather movement of the casualty from one stretcher to another, from one sleeping bag to another, unnecessary lifting or turning when bandaging or splinting.
- If the casualty is conscious and not experiencing abdominal trauma, give sips of warm soup, tea, cocoa, or other warm liquids except for alcohol.
- The casualty should receive medical attention as soon as possible.

5003. Medical Emergency Evacuation

Injuries in the cold have great consequences because the body often reacts by going into shock. This causes the blood to collect in the body core, making frostbite and hypothermia more likely. MEDEVAC procedures must be rehearsed ahead of time. Helicopters may not be available for casualty transport due to weather or tactical considerations. Even tracked vehicles may be unable to move over terrain that is not groomed. Movement of patients over snow by sled is very time consuming and labor intensive. Units must be prepared with predesignated litter teams and potential rewarming stations along the MEDEVAC route. If the patient is transported by sled ensure he is well insulated for the trip.

- a. Training Situations.** In a training situation, evacuate all but superficial frostbite cases. Helicopters are the most desirable means due to their speed. However, worsening of the casualty's condition must be weighed against risk to the helicopter crew, especially in bad weather. The next preferred method is evacuation ambulance or other vehicle. Such modes of transportation are often restricted by the snow pack. The least desirable method of evacuation is by sled. However, terrain and weather conditions may leave the sled team as the only choice. The decision then becomes whether to risk further harm to the casualty and possible injury of the sled team by movement on foot. A better choice may be to obtain medical advice by radio until an evacuation vehicle can get to you.
- b. Combat situations.** In combat, the decision to evacuate a casualty becomes even more complicated. You should consider the following:
 - Will the enemy ground fire endanger the helicopter?

- Will the snow cloud created by the helicopter disclose your position?
- Can the unit afford to give up the combat power of a squad for each casualty moved by sled and continue to carry out the mission? Three to four people will be needed to pull the sled. Two men will be needed for security in the front, and one in the rear. Additional personnel will be required to rest the primary team or break trail in heavy snow.