

# Cold Weather Camping

## **COLD WEATHER COMFORT & SAFETY**

Cold weather camping as defined by BSA is "camping in weather where the average daily temperature is below 50 degrees Fahrenheit and conditions are cold, wet or windy."

The most important thing to remember about cold weather camping is to KEEP DRY. Moisture will reduce the insulating properties of almost everything. To keep yourself warm, remember the word COLD.

**C - Clean:** Since insulation is only effective when heat is trapped by dead air spaces, keep your insulating layers clean and fluffy. Dirt, grime, and perspiration can mat down those air spaces and reduce the warmth of a garment.

### **O - Overheating:**

Avoid overheating by adjusting the layers of your clothing to meet the outside temperature and the exertions of your activities. Excessive sweating can dampen your garments and cause chilling later on.

### **L - Loose Layers:**

A steady flow of warm blood is essential to keep all parts of your body heated. Wear several loosely fitting layers of clothing and footgear that will allow maximum insulation without impeding your circulation.

### **D - Dry:**

Damp clothing and skin can cause your body to cool quickly, possibly leading to frostbite and hypothermia. Keep dry by avoiding cotton clothes that absorb moisture. Always brush away snow that is on your clothes before you enter a heated area. Keep the clothing around your neck loosened so that body heat and moisture can escape instead of soaking several layers of clothing. The hints listed below are in a random manner. There is no order of importance to the list, just some suggestions that have proven true for me over the years.

# Clothing

- Layer your clothing. Wear several layers of lighter clothing instead of one heavy layer. This way you can better regulate the amount of insulation. If you get warm you can take layers off and add some more clothing layers if you get cold.
- Keep yourself dry, both from the weather and perspiration.
- Wear loose fitting clothing, to optimize insulation.
- Remember when buying clothes for cold weather that wool retains most of its insulation properties when wet, while cotton loses most of its.
- There are also excellent manmade fibers and insulations that retain their insulation properties as good as or better than wool. Other benefits include light weight, wide design options & wind-blocking.
- If you need a fire to keep you warm you are not dressed properly. If the heat can get to your body, so can the cold.

**Footwear:** The layer system is the answer for footwear.

- Start with a pair of silk, nylon, or thin wool socks next to your skin.
- Then layer on several pairs of heavier wool socks.
- When and if your feet become damp, change into another pair of dry socks at the first opportunity.
- Rubber over boots will protect the feet from water and will allow more comfortable shoes to be worn within.
- If you choose to wear rubberized boots, remember they do not allow for ventilation, therefore you will need to change your socks several times a day. Also you may want to get some felt inserts for insulation.

**Mittens and Gloves:**

- Mittens allow your fingers to be in direct contact with each other. They will keep your hands warmer than regular gloves that cover each finger.
- Select mittens that are filled with foam insulation, or pull on wool gloves and cover them with a nylon over-mitt.
- Long cuffs will keep wind and snow from getting in.
- Use a pair of socks to cover hands if mittens get wet.

**Headgear:** The stocking hat is the warmest thing you can cover your head with in cold weather.

- Get one that is large enough to pull down over your ears.

- Also ski masks are great in the winter and can help in keeping your neck and face warm as well.
- Noses and ears can be very easily frostbitten, so a scarf can be an invaluable item to have.

**Parka and/or Overcoat:** Your coat or parka is the most important piece of your winter clothing.

- It needs to be large enough to fit over extra clothing without cutting off blood flow, and allowing ventilation to keep moisture away from your body.
- A large permanently attached hood will prevent heat loss around your head and neck.

### **Sleepwear:**

- **Never sleep in the same clothes that you have worn all day.** They are damp and will cause you to chill. **This could cause frostbite and hypothermia.**
- It is advised that you bring a thick pair of sweats and thermal underwear to sleep in. Keep the thermals and sweats for sleeping in only. Do not wear them during the day; this will keep them the driest.
- Also be sure to have a couple of layers of wool or heavy thick cotton socks on as well. Always sleep with a stocking hat on your head or wear a loose fitting hooded pull over type sweatshirt to sleep in.
- Your sleeping bag needs to be a winter rated bag. Typically rated down to 15 degrees and stuffed with 5 pounds of Holofil, Fiberfil, or other polyester ticking.
- A mummy style bag is warmer than a rectangular, as there is less space for your body to heat. Also, most mummy bags have a hood to help protect your head.
- If you only have a rectangular sleeping bag, bring an extra blanket to pack around your shoulders in the opening to keep air from getting in.
- Do not sleep with your head under the covers. Doing so will increase the humidity in the bag that will reduce the insulation properties of the bag and increase dampness.
- It is also a very good idea to have some kind of sleeping mat to use in the winter. The mat can be a \$90 Thermal Rest from Galyans (Scouts get a %10 discount by showing Scout ID card) or a piece of high density rubber foam at least one inch thick.
- In cold weather camping you never want to sleep on an air mattress or off the ground in a cot. The air under you will cool you off in no time and this would create a threatening situation.
- If you don't have a sleeping mat, bring a spare wool or natural fiber blanket to use as a ground pad under your sleeping bag.
- The sleeping mat is worth its weight in gold.

## ODDS AND ENDS.

- If at night you get cold, let the adult leadership know so action can be taken before injury from cold weather health problems occur. In other words it's better to be kidded about forgetting your sleeping bag than risking hypothermia.
- Organization and proper preparation is very important in cold weather camping. Good meals, proper shelter and comfortable sleeping arrangements make for an enjoyable outing.
- Drink 2 quarts of fluids per day besides what you drink at meals.
- Learn to recognize and treat cold weather health problems. These include frostbite, hypothermia, dehydration, chilblains, trench foot, snow blindness and carbon monoxide poisoning.
- Use the buddy system to check each other for cold weather health problems. Notify the adult leadership if symptoms do occur.
- If you feel cold gather some wood or do some other type of work. Working will help warm you.
- Eating ice or snow can reduce your body temperature and it is not pure. **Don't eat it.**
- Snow and ice can be used for drinking water but only after boiling.
- No open flames (candles, matches, etc.) inside the tents. Wiggling your toes inside your boots will help keep feet warm. If your feet get cold put on a stocking cap.
- Take and wear dark sunglasses if snow is in the forecast. The glare of the sun off the snow could lead to snow blindness. The sunglasses will reduce the glare.
- Use the solid fuel hand warmers. They are cheaper and you can light them yourself. Adult leaders must handle all liquid fuel.
- The solid fuel hand warmers tend to have flair up of heat after burning for a while and then they start to cool down. Placing them in an old sock will help to protect you from this "hot spot".
- Keep off ice on streams, lakes and ponds.
- It takes longer to cook food in cold weather, so plan accordingly. Before going to bed pour enough water for breakfast into a pot. It is easier to heat the pot than plastic water can.
- Keep your matches in a metal match safe as plastic can freeze and break if dropped.
- Gather twice as much fuel as you think you'll need for fires.
- Carry tinder from home. It may be hard to find in snow or wet conditions.
- Gather your wood and tinder for the morning fire in the evening so that you will be able to start the fire quickly in the morning.
- Space blankets make good wind shields only. The metallic properties take over the insulation properties in cold weather and become cold conductors.

- Carry extra plastic bags in cold weather. They can be used as personal wind shields and ponchos by slitting a hole in the top for your head to go through.
- Carry extra matches because the more you need a fire to warm up the less likely you will be able to start one easily.
- Flashlight batteries are affected by cold. You can revive a dead battery by warming it up near the fire.
- You may want to take a bottle of propane into your tent with you at night. This will keep it warmer and make it easier to light your stove for breakfast.
- Heaters inside your tent can lead to carbon monoxide poisoning.

## **LAYERED CLOTHING SYSTEM**

Select the proper type and amount of clothing. Regulate your clothing according to your activity rate. This is the most effective way to ensure comfort. Pay attention to your bodies' signals. Don't wait until you are cold to put on more clothing. Act when you first begin to feel cooler.

Clothing layers:

- Long, thermal underwear. polypropylene
- Shirt or inner layer
- Sweater, light jacket
- Wind or rain gear
- Inner pants wool, wool blend
- Wind or rain pants
- Wicking inner socks polypropylene
- Insulating socks wool or wool blend
- Boot liners insulated insoles
- Footwear, boots waterproof, loose-fitting, mukluks or snow boots
- Head coverings
- Gloves and mittens

# COLD WEATHER FIRST AID

**Dehydration: Excessive loss of body water. Impairs the ability to reason, so the victim may not react properly.**

## **Prevention:**

- Drink at least 2 quarts of water a day.
- Avoid dehydrating foods (high protein) and fluids (coffee, caffeine).
- Increase fluid intake at first signs of darker yellow urine.

## **Symptoms:**

### **1 to 5 % deficiency**

- Increased pulse rate
- Nausea and loss of appetite
- Dark urine or constipation
- Irritability, fatigue
- Thirst

### **6 to 10 % deficiency**

- Headache, dizziness
- Labored breathing
- Tingling
- Absence of salivation
- Inability to walk
- Cyanosis (bluish or grayish skin color)

### **11 to 20 % deficiency**

- Swollen tongue, inability to swallow
- Dim vision, deafness
- Shriveled, numb skin
- Painful urination
- Delirium, unconsciousness and death

## **Treatment:**

Mild cases - drink liquids, keep warm.

More severe cases require professional medical treatment.

## **Hypothermia**

Lowering of the inner core temperature of the body. Can and usually does happen above freezing. The victim may not recognize the symptoms and may not be able to think clearly enough to react. Injury or death may result.

### **Predisposing Conditions:**

- Poor physical condition.
- Inadequate nutrition and water intake.
- Thin build.
- Nonprotective clothing.
- Getting wet.
- Inadequate protection from wind, rain and snow.
- Exhaustion.

### **Symptoms:**

- Loss of ability to reason.
- Shivering.
- Slowing, drowsiness, fatigue.
- Stumbling.
- Thickness of speech.
- Amnesia.
- Irrationality, poor judgment.
- Hallucinations.
- Cyanosis (blueness of skin).
- Dilation of pupils of eyes.
- Decreased heart and respiration rate.
- Stupor.

### **Treatment:**

- Shelter the victim from wind and weather.
- Insulate the victim from the ground.
- Change wet clothing.
- Put on windproof, waterproof gear.
- Increase exercise, if possible.
- Put in a prewarmed sleeping bag.
- Give hot drinks, followed by candy or other high-sugar foods.
- Apply external heat; hot stones, hot canteens.
- Huddle for body heat from others.
- Place victim in a tub of 105° F water. Never above 110° F.



## **Prevention:**

- Keep rested, maintain good nutrition.
- Consume plenty of high-energy food.
- Use proper clothing.
- Make camp early if tired, injured or lost.
- Get plenty of exercise. Don't sit around much.
- Appoint an experienced person to watch the group for signs.
- Take immediate corrective action for any signs.

## **Frostbite**

Tissue injury involving the actual freezing of the skin and underlying tissues. Recovery is slow, severe frostbite can lead to gangrene. Once exposed the victim will be predisposed toward frostbite in the future.

## **Predisposing Conditions:**

- Prolonged exposure to temperatures 32° F or below.
- Brief exposure at extremely low temperatures, -25° F and below.
- Exposed body parts
- Restriction of circulation.
- Fatigue, poor nutrition, low liquid intake, poor physical condition.
- Previous case of frostbite or other cold injury.

## **Symptoms:**

### First Degree (Frostnip)

- Redness, pain, burning, stinging or prickly sensation.
- Pain disappears and there is a sudden blanching of the skin.
- The skin may look mottled.
- Skin is firm to the touch, but resilient underneath.
- On thawing, there is aching pain or brownness. The skin may peel off, and the part may remain cold for some time.

### Second Degree (Superficial Frostbite, Frostbite)

- No pain, the part may feel dead.
- Numbness, hard to move the part.
- Tissue and layers underneath are hard to the touch.
- After thawing (takes 3 to 20 days) pain, large blisters, sweating.
- Black or discolored skin sloughs off, leaving tender new skin.

### Third degree (Severe Frostbite)

- Full thickness of the skin is involved.
- After thawing, pain continues for 2 to 5 weeks.

### Fourth degree (Severe Frostbite)

- Skin and bone are frozen.
- Swelling and sweating occur.
- Gangrene may develop, amputation may be necessary.

### **Treatment:**

- Do not rub affected area with snow. Hold it over fire, or use cold water to thaw it.
- Exercise the affected area to promote blood circulation.
- Use any warmth available to thaw area.
- Do not attempt to thaw frostbitten limbs in the field. It is less harmful for the victim to walk out on a frostbitten limb than to thaw it in the field. Thawing only risks additional injury and the victim will be in too much pain to walk.
- Check for hypothermia.
- For more severe cases refer to more complete instructions.

### **Prevention:**

- Proper clothing.
- Good nutrition, drink water, maintain core temperature.
- Use buddy system to check face, nose, and ears.
- Immediate treatment of minor symptoms.

## **Snow Blindness**

Inflammation of the eye caused by exposure to reflected ultraviolet rays when the sun is shining brightly on an expanse of snow.

### **Symptoms:**

Sensation of grit in the eyes, made worse by eye movement, watering, redness, headache, and increased pain on exposure to light.

### **Treatment:**

Blindfold the victim and get rest. Further exposure should be avoided. If unavoidable, the eyes should be protected with dark bandages or the darkest sunglasses. The condition heals in a few days without permanent damage once exposure is stopped.

### **Prevention:**

Wear sunglasses when any danger is present. Do not wait for discomfort to begin.